



ევროკავშირი
საქართველოსთვის
The European Union for Georgia



საქართველოს ეკონომიკური განვითარებისა
და ინფრასტრუქტურის სამინისტრო



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



WITH FUNDING FROM
AUSTRIAN
DEVELOPMENT
COOPERATION



Empowered lives.
Resilient nations.

Competitive Advantages of the Mountainous Regions of Georgia



July, 2019

The study “Competitive advantages of the mountainous regions of Georgia” conducted by the Department of Rural Development and Vocational Education (RDVD) at the Georgian Institute of Public Affairs (GIPA) in collaboration with ISET Policy Institute (ISET PI) at the International School of Economics at Tbilisi State University (ISET) was funded by the United Nations Development Program (UNDP), Swiss Agency for Development and Cooperation (SDC) and Austrian Development Cooperation (ADC). The views expressed in the publication represent authors’ views and might not reflect the views of abovementioned international organizations.

The document has been produced with the assistance of the European Union. Its content is the sole responsibility of authors and can in no way be taken to reflect the views of the European Union.

Contents

1. Introduction	5
2. Methodology.....	7
2.1 Identification of gravity centers and functional regions.....	7
2.2 Identification of sectors with competitive advantages and potential for economic growth and an assessment of their competitiveness	9
2.3 Research limitations.....	11
3. Results	13
3.1 Gravity centers and functional regions.....	13
3.2 Leading economic activities and an assessment of their competitiveness in the mountains.....	16
3.2.1 The production of dairy products	18
3.2.2 Hotels and similar accommodation	36
4. Final remarks.....	51
Annex	52

Tables

Table 1. Data for identification of gravity centers.....	7
Table 2. Evaluation Criteria	10
Table 3. Factors affecting competitiveness.....	11
Table 4. The final list of gravity centers.....	13
Table 5. High mountainous municipalities	17
Table 6. The list of municipalities and relevant functional regions	18
Table 7. Milk production in 2017, by regions.....	20
Table 8. The quantity and proportion of total number of households involved in the dairy sector.....	22
Table 9. The number of enterprises registered in the dairy sector, by municipality.....	23
Table 10. The number of supermarket branches and bazaars, by municipality	24
Table 11. The number of registered hotels and other short-term facilities, by municipality	24
Table 12. The number of veterinarians, by municipality.....	26
Table 13. The number of banks and microfinance organizations, by municipality	28
Table 14. Factors affecting competitiveness in the dairy sector	29
Table 15. SWOT analysis of the dairy sector	33
Table 16. The list of municipalities and relevant functional regions	36
Table 17. Number of registered and operational hotels and similar accommodation places	38
Table 18. Factors affecting competitiveness in the industry	41
Table 19. SWOT analysis.....	48

Figures

Figure 1. The initial map of gravity centers and functional regions.....	14
Figure 2. The final map of gravity centers and functional regions	15
Figure 3. The distribution of mountainous regions within functional regions	16
Figure 4. Priority sectors in high mountainous municipalities	18
Figure 5. The value chain of dairy products.....	21
Figure 6. Imports of milk and dairy products.....	25
Figure 7. The amount of raw milk produced in Georgia and imported milk powder	25
Figure 8. The value chain of hotels and similar types of accommodation.....	37

1. Introduction

According to the Georgian socio-economic development strategy, “Georgia 2020”, the economic politics of the Georgian government is based on the following principles:

- Ensuring fast and efficient economic growth that is oriented towards the real (production) sector development;
- Implementing the economic policy that stimulates inclusive economic growth;
- Exploiting natural resources rationally in the economic development process;
- Ensuring environmental safety and sustainability and avoiding the risks of natural disasters.

Effectively elaborating and implementing a policy that is necessary for regional development plays one of the crucial roles in achieving inclusive economic development. It is important to reveal the comparative and competitive advantages of Georgian regions, to define their potential and exploit it to the maximum. As a result, this will contribute to developing those regions that are strong and competitive and ultimately, will increase the welfare of population.

One of the main premises for reducing inequality among regions, stimulating local economic growth, attracting direct investments and getting closer to European Union is to further arrange and develop the local infrastructure. Moreover, according to the “Georgia 2020” strategy, it is important for the local self-governing bodies to be also involved in planning and carrying out activities corresponding to each region’s development plan priorities.¹

According to the ISET-PI, there are differences among the regions, however, the most systemic regional inequality can be explained by the urbanization indicator. In particular, usually, relatively more urbanized regions have higher added value per capita, more diversified and developed economic structure and infrastructure. In this regard, there is especially complicated situation in the mountainous regions of Georgia that can be considered as the most vulnerable regions of the country.

Population living in the mountains is facing problems as lack of infrastructure, complicated living conditions, limited economic resources for households and lack of food security. Often, all this drives the population out of mountainous regions to the lowland.

Due to the relevance of the above-mentioned issues, the “Law on the Development of High Mountainous Regions” has been adopted in 2015. The aim of this law is to define socio-economic benefits for high mountainous regions in order to stimulate progress, the welfare of people living in high mountainous regions, improve their quality of life, stimulate employment and improve their social and economic conditions.² Georgian Law on the Development of High Mountainous Regions is based on the article 31 of the Georgian constitution that states the following: “The state shall take care for the equal socio-economic development of the whole territory of the country. With the view of ensuring

¹ Retrieved from http://www.economy.ge/uploads/ecopolitic/2020/saqartvelo_2020.pdf May, 2019

² Retrieved from <http://www.parliament.ge/ge/kanonmdbloba/constitution-of-georgia-68>, May, 2019

the socio-economic progress of the high mountain regions special privileges shall be determined by law". While adoption of the law is a sign that developing mountainous regions is one of the policy priorities for the country, in order to overcome the challenges existing in terms of regional development, the involvement and the joint efforts of the government, public and private sectors are needed. The role of research activities is also large in this. Nowadays, there are a few researches that would allow us to base the sustainable regional strategy on factual evidence and arguments.

The goal of the research is to support elaborating informed regional policy that is based on evidence. In order to achieve this goal, the objective of this research is to:

- Identify gravity centers;
- Determine functional regions;
- Identify priority economic activities and sectors with the high potential for economic growth;
- Examination of competitive advantages of identified priority sectors;
- Develop specific recommendations for local and central governments to increase the competitiveness of functional regions.

2. Methodology

2.1 Identification of gravity centers and functional regions

The concept of functional regions has various definitions in scientific literature (Erlebach, Klapka, Halas, & Tonev, 2014). For the purposes of this research, a functional region will be defined as a territorial entity characterized by a high frequency of intra-regional economic interactions. Such economic interactions include intra-regional trade in goods and services, labour commuting, and household shopping (Karlsson & Olsson, 2006). A functional region is defined by the agglomeration of economic activities and the development of intra-regional transport infrastructure, thus promoting the mobility of people, products, and raw materials within its boundaries (Konjar, Lisec, & Drobne, 2018). Functional regions have either one or several gravity centers, each serving as the most active facets of economic interaction. They are essentially large, economically developed cities or municipalities.

The literature offers various approaches in identifying functional regions and gravity centers. For instance, the short-term and long-term migration approach (Hemmasi, 1980), the local labor market approach, the commuting zone approach, the commuting aggregation approach (Karlsson & Olsson, 2006), and the delimitation of functional regions using mobile phone locational data (Novak, Ahas, & Aasa, 2013).

For this study, the research team used the local labor market method, the best practice for European applied research, to identify functional regions and gravity centers. Under this approach, functional regions have been defined in Slovenia (Konjar, Lisec, & Drobne, 2018) and the Czech Republic (Klapka, Halás, Tonev, & Bednář, 2013), and the results were thereafter used to develop the regional economic policies of these countries.

During the first stage of the local labor market method, the main gravity centers of strong, self-sufficient municipalities are formerly identified. A municipality is considered to be strong and self-sufficient, and pre-identified as the main gravity center, if it satisfies the following conditions:

1. Fewer than a set percentage of workers commute to other municipalities daily;³
2. The number of workplaces in the municipality exceeds a certain number.⁴

For Georgia there is no information regarding daily commutes to individuals' workplaces, thus during the initial stage of the pre-identification of potential gravity centers (strong, self-governing municipalities), the research team used the following data (Table 1):

Table 1. Data for identification of gravity centers

#	Data	Source
---	------	--------

³ The benchmark of 20% was used in research implemented in the 1990s (Karlsson & Olsson, 2006). While for Slovenia this indicator was equal to 35% (Konjar, Lisec, & Drobne, 2018).

⁴ There is no universal benchmark and the figure is dependent on a country's economic and demographic indicators.

1	The total population of self-governed cities and municipalities	Geostat, 2014 General Population Census
2	The distribution of internal migrants discerned by prior and current permanent residences	Geostat, 2014 General Population Census
3	The number of employees in self-governed cities and municipalities	Geostat, DataLab
4	The average monthly reimbursement of employees in self-governed cities and municipalities	Geostat, IDFI, DataLab
5	Number of registered business entities in self-governed cities and municipalities	Geostat
6	The number of branches of supermarket in self-governed cities and municipalities	Webpages of supermakets
7	The number of branches of electronics and home appliance stores in self-governed cities and municipalities	Webpages of electronics and home appliance stores
8	The number of branches of commercial banks and microfinance organizations in self-governed cities and municipalities	Webpages commercial banks and microfinance organizations
9	The luminosity data by municipality (see the Annex, Figure A1)	NOAA

The sources of information listed in the first five sections are derived from the National Statistics Office of Georgia (Geostat) and the 2014 Georgian population census. The information indicated in points 6, 7, and 8 was collected from screening websites of supermarkets, electronics and home appliance stores, and commercial banks and microfinance organizations. Whereas, the luminosity data was obtained from the US National Oceanic and Atmospheric Administration (NOAA).

To identify the final list of gravity centers, the municipalities were ranked by every indicator, each weighted equally, and at the final stage an average rank was calculated for each municipality (see the Annex, Figure A2). In order to ensure that the selected municipalities were not geographically concentrated in a single administrative region, the research team restricted the number of gravity centers per administrative region - at least one and maximum two per administrative region. Considering this restriction, the team identified eighteen gravity centers.

In order to identify functional regions around gravity centers, a municipality is considered to be a part of a functional region if it satisfies this condition:

$$FR_i = \{x: f_i(x) \geq f_j(x)\}$$

Where:

i and j are gravity centers of two functional regions;

FR_i is a functional region with a gravity center i ;

x is a municipality located between the i and j gravity centers;

$f_i(x)$ is the number of workers from municipality x who travel to their workplace in gravity center i ;

If this condition holds, the x municipality x belongs to the functional region with gravity center i .

Information on the movement of the labor force is unavailable in Georgia, thus the research team used field survey data from minibuses guides (see the questionnaire in the Annex, Table A1). It should be noted that at least one guide works in every municipal center bus station and performs the function of a controller and observer for the minibus drivers. They provided information regarding the departure and arrival times of minibus routes, the ridership, and travel prices.

2.2 Identification of sectors with competitive advantages and potential for economic growth and an assessment of their competitiveness

In order to identify the sectors with significant potential for economic growth in the mountainous regions of Georgia and to assess the competitiveness of those areas, the research team used the following methods:

- Specialization index and growth rate of economic activities;
- Value chain analysis (VCA) for the identified priority sectors;
- Description of production factors, based on the Porter Model;
- SWOT analysis of the priority sectors.

Within the first stage of the research, high mountainous regions to be covered by the research were identified based on the following assumption: if 50% of the villages in a municipality were considered high mountainous villages⁵ they were included in the research.

The specialization index was calculated for economic activities in the municipalities based on the following formula:

$$SI_{ij} = n_{ij}/N_i$$

Where:

i denotes economic activity type (sector);

⁵ According to the MRDI villages located at the height of 1500 meters and more above the sea level, are considered to be high mountainous villages.

j denotes municipality;

SI_{ij} denotes specialization index for sector i in j municipality;

n_{ij} denotes the number of registered and active enterprises in i sector in j municipality;

N_i denotes the number of registered and active enterprises in sector i for the whole country.

Since the data on the growth rates of the sectors is not available at the municipal level, country level data has instead been utilized and an average growth rate of economic activities for 2010–2017 was used in calculations.

All the indicators were calculated based on Geostat data (Geostat, 2019)

The specialization index and growth rates of economic activities were calculated for every high mountainous municipality and economic activities with high and medium specialization indexes and high growth rates were identified for each municipality. The list of the sectors identified was assessed against the criteria below (Table 2) in order to select the priority sectors, namely those with the potential for economic growth in Georgia’s mountainous regions.

Table 2. Evaluation Criteria

Ranking	Criterion	Weight
1	Access to resources (labor, human, natural, capital- including infrastructure, etc.);	0.31
2	Employment opportunities;	0.23
3	Income generation opportunities;	0.21
4	Relevancy for other mountainous regions (potential up-scaling);	0.14
5	Connection with other sectors.	0.12

Note: The criterion with the highest weight is considered the most important, while the criterion with the lowest weight is the least important. The weights were identified from consultations with experts.

Assignment of weights to each criterion was done by the representatives of GIPA, ISET, MEPA and independent experts. Based on the criteria in Table 1, each identified sector was given a score from 1 to 10 by the research team representatives based on literature review of existing research and studies, marked against every other criterion. The sectors with the highest score were regarded as priority sectors.

A VCA was conducted for the priority sectors, and the major actors of the value chains were subsequently identified alongside the supporting services. The research team thereafter looked at the relationships between the foremost players, as well as the availability of supporting services. VCA was done through literature review and field work – interviews with state and private sector representatives as well as experts and civil society representatives.

To study the competitive advantages of the identified sectors, the research team relied chiefly on the Porter Diamond Theory of National Advantage. The Porter Diamond theory represents the Market-Based View (MBV), which argues that industry factors and external market orientation are the primary determinants of the performance of a firm (Bain, 1968; Caves & Porter, 1977; Peteraf & Bergen, 2003; Porter, 1980, 1985, 1996). Bain’s (1968) Structure-Conduct-Performance (SCP) framework and Porter’s (1980) five forces model (which is based on the SCP framework) are two of the best-known theories in this area. While, the value sources for a firm are embedded in its competitive environment, thus characterizing its end-product strategic position.

Based on this approach, priority sector competitiveness was assessed by the following dimensions (Table 3):

Table 3. Factors affecting competitiveness

Factors affecting competitiveness	Description of factors
Production factors	Natural and human resources, capital resources, infrastructure, knowledge and experience, technologies.
Market factors (market demand)	Market size, customer characteristics, distribution channels, etc.
Related and supporting industries	Supporting sectors, directly or indirectly linked to the selected sector.
Governance	State policy regarding the prioritized sector; state regulations and standards.

The data was collected via desk and field research: the desk research relied on an analysis of statistical information, and a review of existing reports and publications; while the field research included 60 interviews with respective value chain participants. The interviews were conducted in March-April of 2019, where the respondents represented the state, and both private and civil society organizations. One interview lasted for 45 minutes on average.

Based on the information collected, specific recommendations have been developed to increase the competitiveness of priority sectors. The research team has also developed an advocacy plan for communicating their results and recommendations with the relevant stakeholders.

2.3 Research limitations

This research has certain restrictions that are described below.

While determining gravity centers and functional regions, it was revealed that:

- Information on travel routes is gathered only from central bus stops and stations, which may lead to the loss of some data, as in certain cities there are additional bus stops. To minimize the potential negative impact of this issue, in the second part of the survey when evaluating the competitiveness of priority sectors, the information was verified and specified by the respondents in order to determine the gravity centres for every municipality.
- Bus stations serve a small number of minibuses in certain municipal centers, although most passengers use transit lines (for example, Borjomi, Mtskheta). In this instance, it is assumed that 30% of the transit passengers arrives in the specified municipality.
- In determining functional regions, due to the high concentration of population, Tbilisi was not considered as a gravity center. It was expected that Georgia would have only one gravity center, leaving the rest of the country as its functional region. Although Tbilisi was omitted during the first stage of the research, the second stage highlighted the necessity of including Tbilisi as a gravity centre, and thus it was taken into account in the final results.

While evaluating the competitiveness of priority sectors, it was revealed that:

- For calculating the specialization index, it is important to consider that where an enterprise is registered does not necessarily coincide with its actual geographic location. To minimize the influence of this restriction on the results of the survey, the priority sectors were selected based not only on the specialization index and growth rates, but also on the combination of these indexes alongside a set of criteria developed by research team.
- As sector growth rates are unavailable at the municipal level, country level data has been used instead. Therefore, in the same sectors the variation between municipalities equals zero. Under this limitation, the same sectors have equal growth rates in different municipalities, which may not be accurate. This restriction is caused by a lack of statistical data at the municipal level, nevertheless, it is noteworthy that country level growth rates reflects a particular sector's priority across the country and, therefore, this variable is still relevant to the research. As the priority of a sector is defined not solely by its growth, rather by a combination of other variables, this limitation is considered to have little impact on the final results.
- Due to the relatively small sample size of the respondents interviewed, the results of the interviews cannot be generalized. In order to overcome this limitation interview results are triangulated with secondary sources (studies, reports etc.).

3. Results

3.1 Gravity centers and functional regions

Using the described methodology, eighteen gravity centers, municipalities or self-governing cities have been identified (Table 4):

Table 4. The final list of gravity centers

#	Gravity Centers	Average Ranking
1	Tbilisi	1.4
2	Batumi	4.1
3	Kutaisi	5.6
4	Rustavi	5.8
5	Poti	9.6
6	Zestaponi municipality	11.6
7	Kobuleti municipality	12.6
8	Telavi municipality	13.2
9	Marneuli municipality	13.3
10	Gori municipality	15.3
11	Zugdidi municipality	15.8
12	Ozurgeti municipality	17.4
13	Khashuri municipality	19.0
14	Sagarejo municipality	20.8
15	Gurjaani municipality	20.8
16	Akhaltikhe municipality	20.9
17	Borjomi municipality	21.3
18	Mtskheta municipality	22.3

It should be noted that Table 4 contains three municipalities from Kakheti (Telavi, Gurjaani, and Sagarejo), because Gurjaani and Sagarejo held identical positions within the rankings (see the Annex, Figure A2).

Utilizing the information obtained and the aforementioned methodology, the research group defined eighteen functional regions within certain gravity centers (Figure 1), as defined in the previous investigative phase.

Figure 1. The initial map of gravity centers and functional regions



Note: As conflicted territories the following municipalities are excluded from the research area: Gagra, Gudauta, Sokhumi, Gulrifshi, Ochamchire, Gali, Java, and Akhagori.

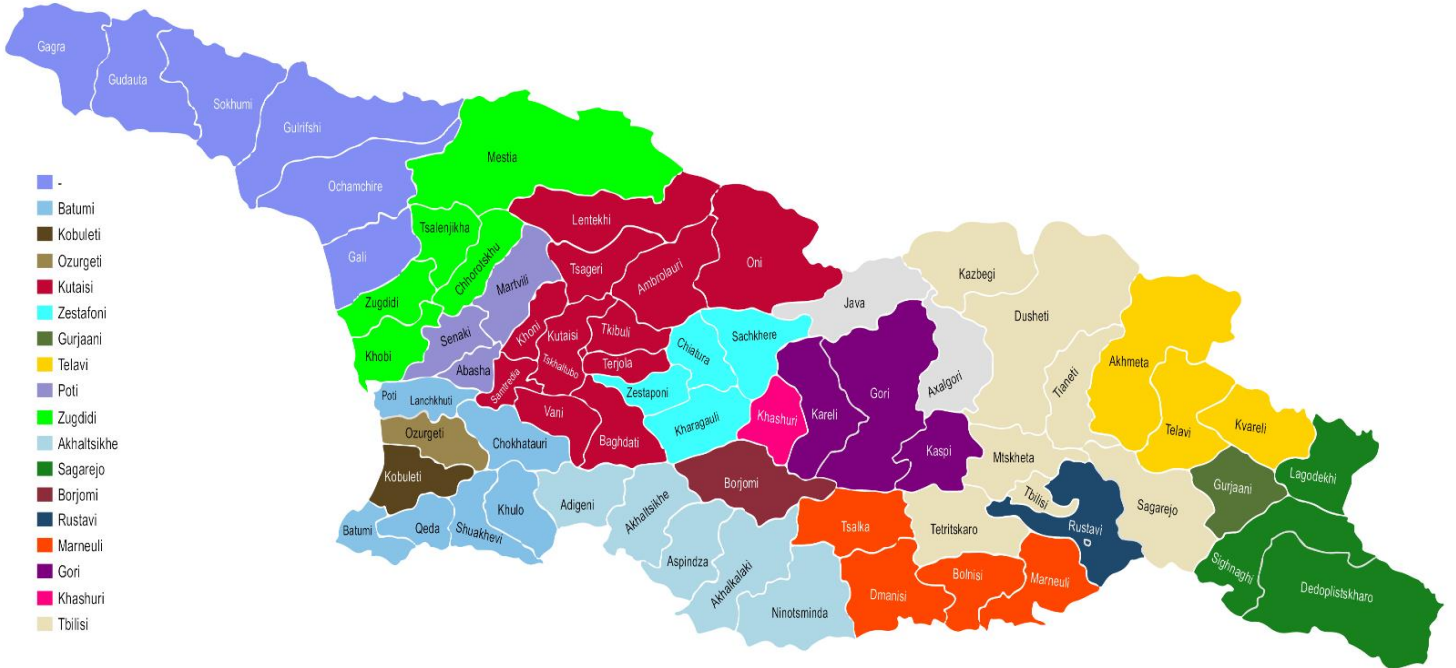
Figure 1 reveals that some municipalities are outside of a specific functional region (specified in grey); the municipalities of Lentekhi, Tsageri, Oni, Kazbegi, Dusheti, Tianeti, Kaspi, and Tsalka showed no connection to any gravity center. In Kutaisi, results from the interviews established that there is no regular line connecting the main city station to the municipalities of Lentekhi, Tsageri, or Oni. The same results are found from surveying the bus stations at Zugdidi and Poti. In the case of Kazbegi, Dusheti, and Tianeti the only route is connected via Tbilisi. These issues were factored into the previously mentioned limitations, connected to the results of the poll of the main stations for passenger transit and passage line use.

During the second stage of the research, when the researchers analyzed the sectors with the highest potential for economic growth in the mountains, the boundaries of functional regions were clarified and adjusted accordingly. In particular, it was revealed that the population of the municipalities of Sachkhere, Chiatura, and Kharagauli often shop or work in Zestaponi, rather than Kutaisi. Such connection is observed between Kutaisi and Tsageri, Lentekhi and Oni.

Hotels and restaurants in the municipalities of Kazbegi, Dusheti, and Tianeti are supplied from Tbilisi; whereas the Mtskheta municipality it is not a gravity center and is included as a functional region for Tbilisi; and the same holds true for Sagarejo. The fieldwork carried out in the Tsalka municipality highlights the absence of the workforces' active movement between Tsalka and its gravity center, although a section of its population shops in the Marneuli municipality. While, the Caspi municipality

is adjoined to the nearest gravity center of Gori. To account for these irregularities, the second finalized map was thus developed, and all municipalities are located within functional regions (Figure 2).

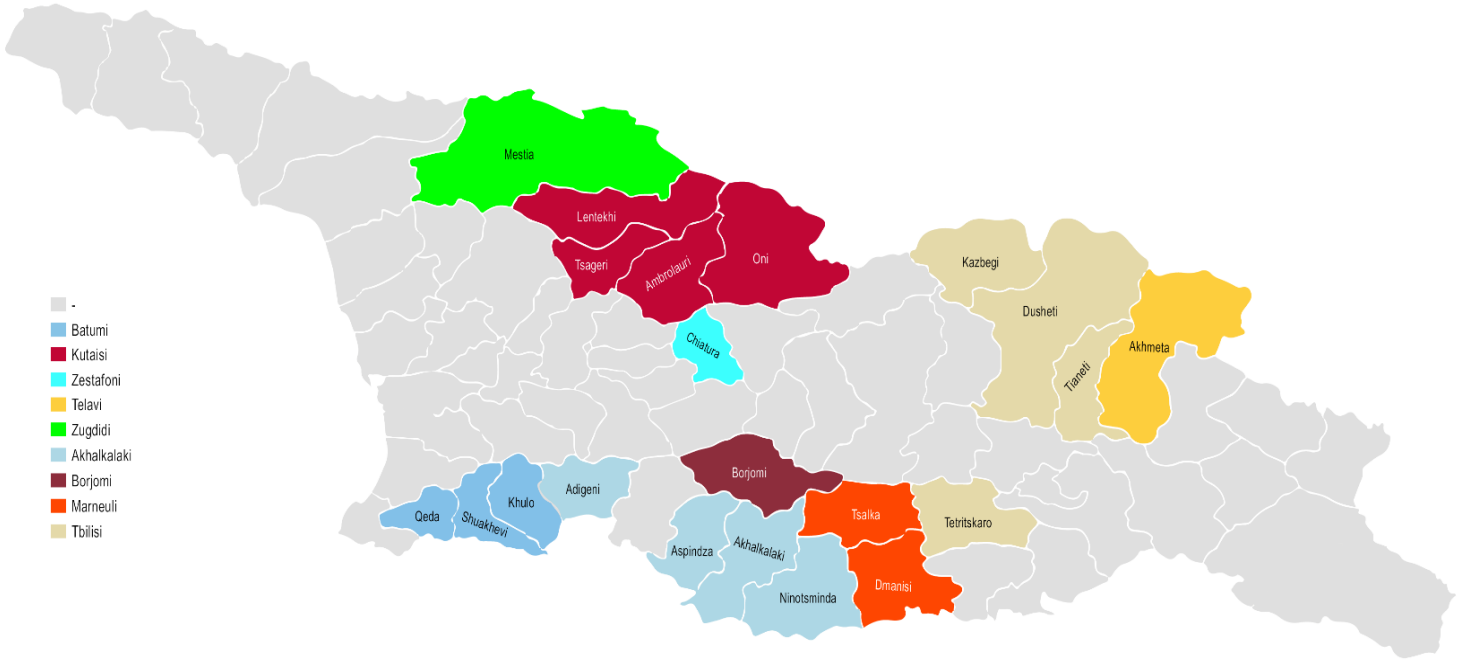
Figure 2. The final map of gravity centers and functional regions



Note: As conflicted territories the following municipalities are excluded from the research area: Gagra, Gudauta, Sokhumi, Gulrifshi, Ochamchire, Gali, Java, and Akhlagori.

The distribution of mountainous regions within their functional regions is presented in Figure 3.

Figure 3. The distribution of mountainous regions within functional regions



Note: As conflicted territories the following municipalities are excluded from the research area: Gagra, Gudauta, Sokhumi, Gulrifshi, Ochamchire, Gali, Java, and Akhagori.

The research identifies that most mountainous municipalities belong within the functional regions of Tbilisi, Kutaisi, and Akhaltsikhe. Although the majority of municipalities fall into the functional regions of the largest cities, certain mountainous municipalities have a relatively high position in the municipal ranking compared to other mountainous areas of the same region (see the Annex, Figure A2). Such municipalities are considered to be potential gravity centers for the mountains. For instance, in Samtskhe-Javakheti the Akhalkalaki municipality holds the highest position among the region's mountainous municipalities. The same is true of the Tsalka municipality in the Kvemo Kartli region; the Dusheti municipality in Mtskheta-Mtianeti; the Akhmeta municipality in Kakheti; the Ambrolauri municipality in Racha-Lechkhumi and Kvemo Svaneti; the Mestia municipality in the region of Samegrelo-Zemo Svaneti; and the Shuakhevi municipality in Adjara.

3.2 Leading economic activities and an assessment of their competitiveness in the mountains

A competitiveness analysis was implemented for municipalities in which over 50% of villages are considered by the law to be mountainous. Accordingly, this study has identified 21 mountainous municipalities across the country (Table 5).

Table 5. High mountainous municipalities

#	Municipalities	#	Municipalities
1	Keda	12	Tsageri
2	Shuakhevi	13	Mestia
3	Khulo	14	Adigeni
4	Chiatura	15	Aspindza
5	Akhmeta	16	Borjomi
6	Dusheti	17	Akhalkalaki
7	Tianeti	18	Ninotsminda
8	Kazbegi	19	Dmanisi
9	Ambrolauri	20	Tetritskaro
10	Lentakhi	21	Tsalka
11	Oni		

Utilizing the approaches of the methodology, the following sectors with a high and medium specialization index and a high growth rate were identified: hotels and similar types of accommodation; the production of precious and other metals; mixed agriculture; the production of medical equipment; the production of home appliances and instruments; supporting services for enterprises; the production of fertilizers; the production of fire-proofing materials; the production of dairy products; and the production of plastics.⁶

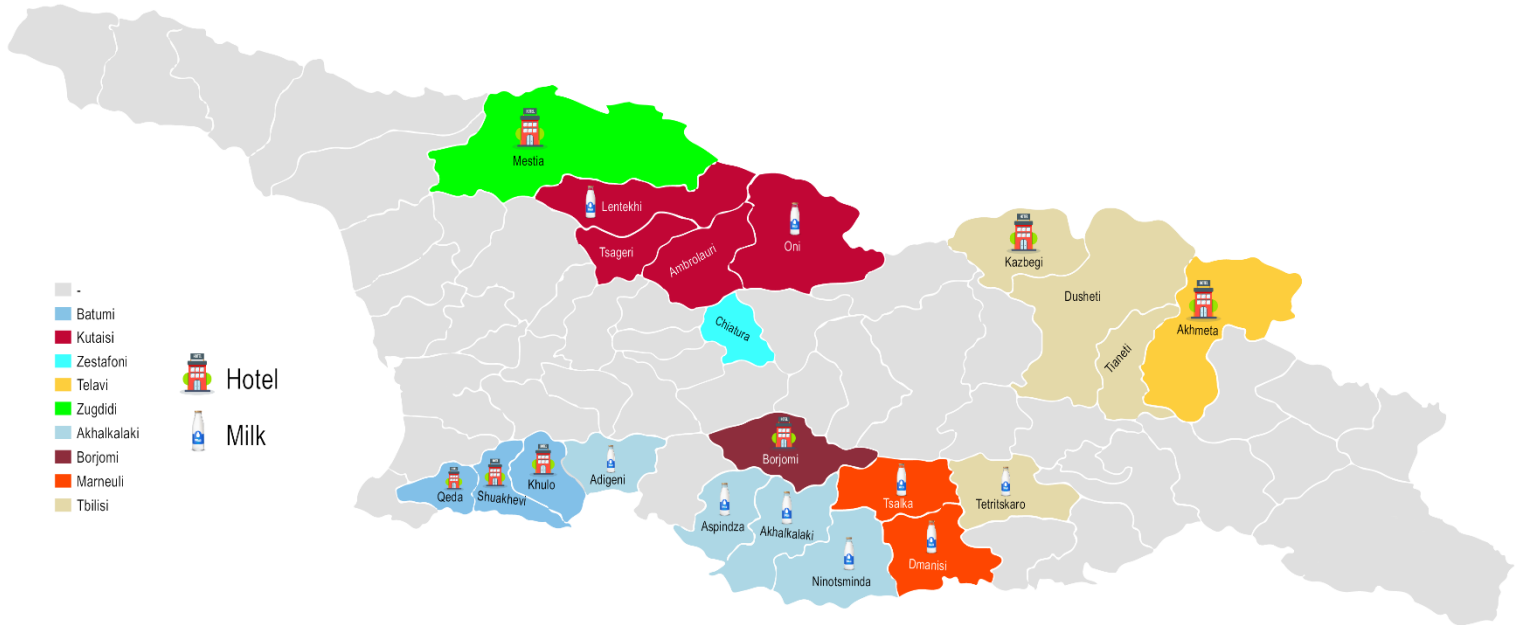
When assessed against the criteria, two sectors maintained the highest scores:

1. The production of dairy products;
2. Hotels and similar types of accommodation.

These two priority sectors were distributed among the mountain municipalities as follows (Figure 4):

⁶ These activities are listed in no particular order.

Figure 4. Priority sectors in high mountainous municipalities



Note: As conflicted territories the following municipalities are excluded from the research area: Gagra, Gudauta, Sokhumi, Gulrifshi, Ochamchire, Gali, Java, and Akhagori.

These two sectors are, naturally, not a priority for all municipalities, however they are in the leading majority. In the remaining municipalities, for example in Chiatura, the main sector is iron ore; in Tsageri and Ambrolauri the most important sector is viticulture; and in Dusheti and Tianeti it is mixed agriculture.

3.2.1 The production of dairy products

Cattle breeding is traditionally one of the leading economic activities for municipalities in mountainous regions and compared to the rest of Georgia these areas maintain significant numbers of cattle (see the Annex, Table A2).

Dairy products were defined as a priority sector for the following functional regions and their relevant municipalities (Table 6):

Table 6. The list of municipalities and relevant functional regions

Functional regions	Municipalities
Tbilisi functional region	Tetrtskaro
Kutaisi functional region	Oni Lentekhi
Marneuli functional region	Tsalka Dmanisi

Akhaltzikhe functional region	Adigeni Aspindza Akhalkalaki Ninotsminda
-------------------------------	---

Though production of dairy products is the primary activity for the high mountainous municipalities listed above, the environment in each of these areas differs greatly. For instance, in the Tetrtskaro municipality, its proximity to Tbilisi is an extremely important factor, and thus defines the main market for its dairy products. Because the Marneuli market is supplied by neighboring villages, the market also becomes quite saturated. It is moreover noteworthy that the majority of households in Tetrtskaro do not sell milk directly to collectors or processors, rather they produce cheeses for sale. Although cattle breeding is one of the leading fields in the municipality, there are few milk processing enterprises and, currently, only one is functional.

In the Oni and Lentekhi municipalities, belonging to the Kutaisi functional region, the specialization index and growth rates reveal that cattle breeding is characterized by high specialization rates and negative growth rates. Due to favorable natural conditions, cattle breeding is a traditional practice for these municipalities, however, the migration of young people from highland villages alongside the retirement of the remaining population, ensures that labor-intensive sectors, such as cattle breeding, cannot be maintained. It is noteworthy that, unlike Mestia, tourism in Lentekhi is less well-developed, and agriculture remains its main influence. In comparison with other regions, there are also a lack of non-governmental organizations and their relevant implemented projects. Thus, this municipality is characterized by low income and high distance from its markets.

Furthermore, the Tsalka and Dmanisi municipalities, within the Marneuli functional region, are also characterized by specific features that affect the dairy sector. For instance, the milk and dairy product value chain in Tsalka is better developed than in the other municipalities mentioned above. There are both milk collectors and processing enterprises available in Tsalka; including, vertically integrated enterprises that cooperate with large supermarkets, such as Goodwill and Ori Nabiji in Tbilisi. While in the Dmanisi municipality, there is only one intensive cattle breeding farm that produces and sells milk to large companies (for example, Santa and Soplis Nobati). A milk processing plant is currently being constructed in the area.

For milk and dairy products, the functional region of Akhaltzikhe is the largest among those listed in Table 5. The production of dairy products is carried out in every mountainous municipality in the region, aside from Borjomi. While the Adigeni, Aspindza, Akhalkalaki, and Ninotsminda municipalities are prominent for their abundance of milk collectors and processing enterprises, with dairy products being sold in Tbilisi, as well as Batumi and Kutaisi.⁷

In a regional context, 20% of the milk produced in Georgia originates from Kvemo Kartli, with large amounts produced in the lowlands, while a further 14% of milk is produced in Samtskhe-Javakheti (Table 7).

⁷ It should be noted that the distribution of sectors according to municipalities is based on both the indexes and interviews. Consequently, Lentekhi and Oni were defined as municipalities with significant potential for dairy sector development.

Table 7. Milk production in 2017, by regions

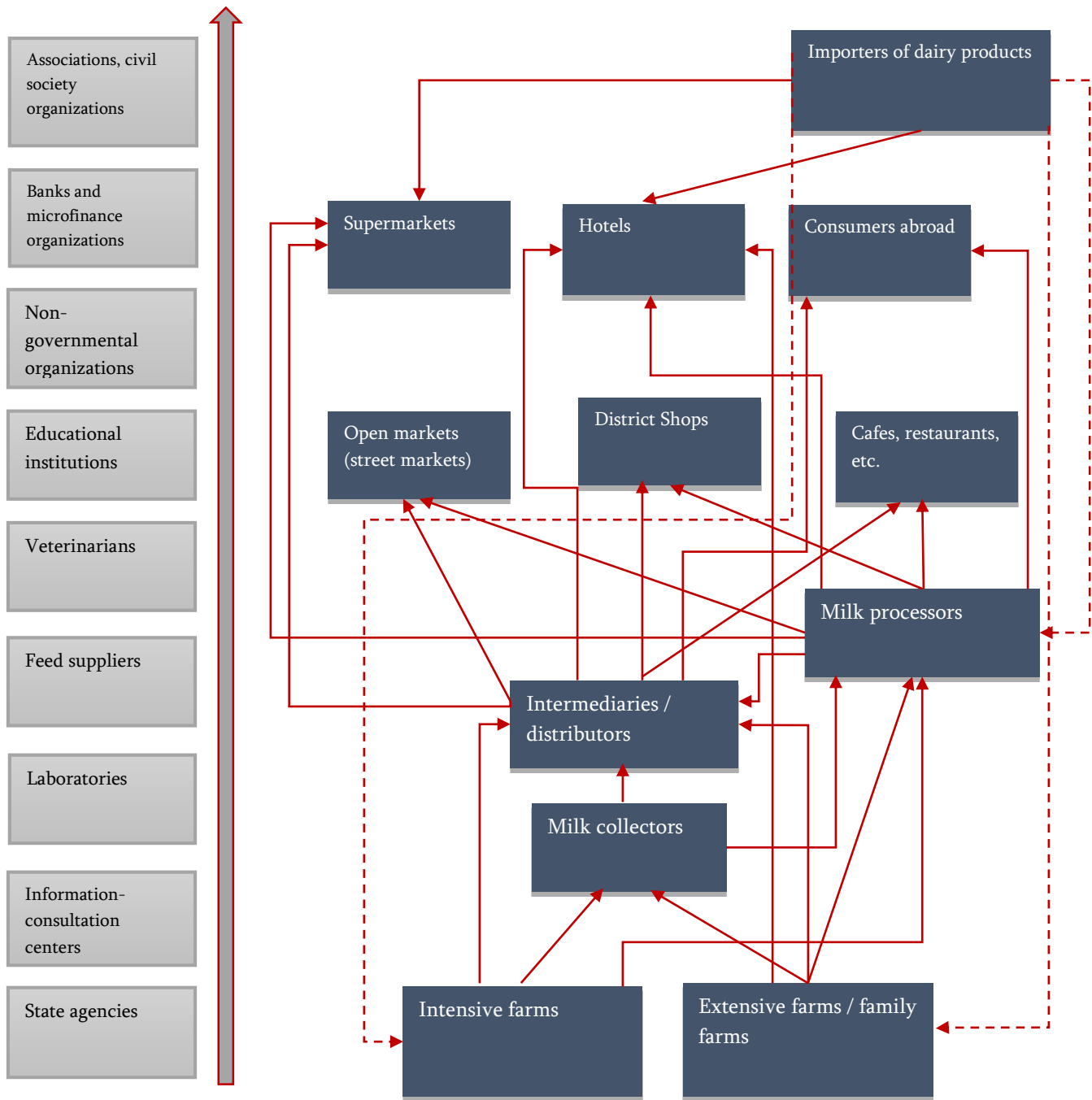
Region	Dairy production (million liters)	The percentage of total production
Tbilisi City	2.5	0.5%
The Autonomous Republic of Adjara	32.5	6%
Guria	24.5	5%
Imereti	110.7	21%
Kakheti	53	10%
Mtskheta-Mtianeti	19.4	4%
Racha-Lechkhumi and Kvemo Svaneti	7.1	1%
Samegrelo-Zemo Svaneti	64.8	12%
Samtskhe-Javakheti	71.7	14%
Kvemo Kartli	103.2	20%
Shida Kartli	39	7%
Total production (output)	528.4	

Source: Geostat, 2019

3.2.1.1 Value chain mapping

The value chain of dairy production is presented below in Figure 5:

Figure 5. The value chain of dairy products



Note: The dotted line refers to the movement of milk powder.

The main participants in the dairy value chain are intensive farms, family farms, and milk collectors and processors who sell their products in open markets, district shops, catering facilities, hotels, and supermarkets. Moreover, the key participants are the distribution companies and the importers of dairy products, including powdered milk. The remainder of the chain provides support services to the crucial participants, such as: state agencies, information-consultation centers, laboratories, feed suppliers,

veterinarians, educational institutions, banks and microfinance organizations, NGOs, and associations and civil society organizations.

3.2.1.2 The characteristics of the main participants

The majority of dairy products from the mountains, as well as from the rest of Georgia, are produced in family farms; largely extensive farms characterized by low-level commercialization. In general, the IFAD survey identifies two types of mountainous producer:

- Extensive farms- non-commercial family farms that produce dairy products using traditional methods. They mainly use local breeds and the average number of cattle on these farms is 20. During the summer season (May-June), farmers take the cattle to mountain pastures, where they produce milk products and supply them to the valley. There are around 50,000 of such farms across the country (IFAD, 2018).
- Intensive farms- industrial producers, which in certain cases are vertically integrated. There are a limited number of such enterprises in Georgia’s mountains, though they are found within the previously defined functional regions. Such farms typically utilize high-quality breeds of cattle and well-developed feed supply systems. According to data from the Georgian Dairy Association, there are approximately fifteen industrial (intensive) farms in Georgia, with around 2,600 cows. The Association also highlights that, in 2018, these farms produced 22 million liters of milk, with 1/3 of these farms located in high mountainous municipalities (Akhmeta, Tsalka, Akhalkalaki). It is also remarkable that cattle productivity on industrial farms fluctuates from 7 to 10 tons per year, on average equaling 8.8 tons, which is six times higher than average Georgian productivity.

It is noteworthy that in the majority of the municipalities listed in Table 5, over 60% of households are engaged in the dairy sector, leaving only Tetrtskharo (44%) and Oni (31%) as exceptions (Table 8).

Table 8. The quantity and proportion of total number of households involved in the dairy sector

Functional regions	Municipalities	The households involved in dairy sector	
		Quantity	%
Tbilisi functional region	Tetrtskaro	3,289	44%
	Oni	952	31%
Kutaisi functional region	Lentekhi	1,033	70%
	Tsalka	4,097	77%
Marneuli functional region	Dmanisi	3,772	68%
	Adigena	2,984	66%
	Aspindza	1,781	62%
Akhaltzikhe functional region	Akhalkalaki	6,362	67%
	Ninotsminda	4,272	75%

Source: Geostat, 2019

Dairy collectors take milk from farmers and deliver it for dairy processors. However there are processors who collect milk from farmers directly. Generally there are two key groups of processors:

- Unregistered processors - family farms that produce cheese, yogurt, and cottage cheese products for personal use and sale. Such producers dominate the cheese market. They sell their products through intermediaries in local markets, as well as in the regional markets and district shops of major cities (Tbilisi, Kutaisi, and Batumi). Unregistered products are also provided to cafés, restaurants, and hotels via local intermediaries and distributors.
- Registered processors- relatively large enterprises that produce milk, cheese, butter, and other dairy products, which generally supply supermarkets (Goodwill, Carrefour, Ori Nabiji, Madagoni, etc.) (Table 9).

Table 9. The number of enterprises registered in the dairy sector, by municipality

Functional regions	Municipalities	The number of the enterprises registered in the dairy sector	
		Registered	Active/Operating
Tbilisi functional region	Tetritskaro	7	1
Kutaisi functional region	Oni	0	0
	Lentekhi	0	0
Marneuli functional region	Tsalka	10	5
	Dmanisi	7	1
Akhaltzikhe functional region	Adigena	27	3
	Aspindza	15	3
	Akhalkalaki	11	5
	Ninotsminda	25	11

Source: Geostat, 2019

Table 9 illustrates that the functional region of Akhaltzikhe is distinguishable by its number of registered and active enterprises, whereas there are simply no registered enterprises in Oni or Lentekhi. The production of dairy products, chiefly by unregistered producers, often in family farms, helps explain such a deficiency. Family farms and intensive farms typically supply their products to markets via unregistered individual intermediaries. Whilst, processors dispense their products through a chain of distributors.

The selected municipalities have no notable local consumer markets. For instance, there is only one supermarket in Akhalkalaki, while in Lentekhi, Aspindza, and Ninotsminda there are neither supermarkets nor markets (Table 10).

Table 10. The number of supermarket branches and bazaars, by municipality

Functional regions	Municipalities	The number of supermarkets	The number of markets
Tbilisi functional region	Tetritskaro	0	1
Kutaisi functional region	Oni	0	1
	Lentekhi	0	0
Marneuli functional region	Tsalka	0	1
	Dmanisi	0	1
Akhalsikhe functional region	Adigena	0	1
	Aspindza	0	0
	Akhalkalaki	1	3
	Ninotsminda	0	0

Source: Geostat, 2019

The distribution channels of dairy products in the mountains differs according to municipality and functional region. For instance, dairy products produced in the functional region of Akhalsikhe are primarily sold in Tbilisi hypermarkets. Tbilisi is also the main consumer market of dairy products from Tetritskaro and Tsalka. The key markets for products from Tetritskaro are Tbilisi shops and large supermarkets, like Madagoni, Zgapari, and Fresco. While, products derived from Tsalka are available in Goodwill and Ori Nabiji. In Dmanisi, livestock farms cooperate with vast companies, such as Sante and Soplis Nobati. Whereas in Oni and Lentekhi, dairy products are largely produced in the region, with a certain amount sold in Kutaisi bazaars.

Local hotels are often important customers for dairy producers. It is significant that hotels and other forms of short-term accommodation are only unregistered in the Dmanisi municipality, whereas in Adigeni (20) and Akhalkalaki (15) their quantity is quite notable (Table 11). Many hotels, though, remains unregistered in the high mountainous regions.

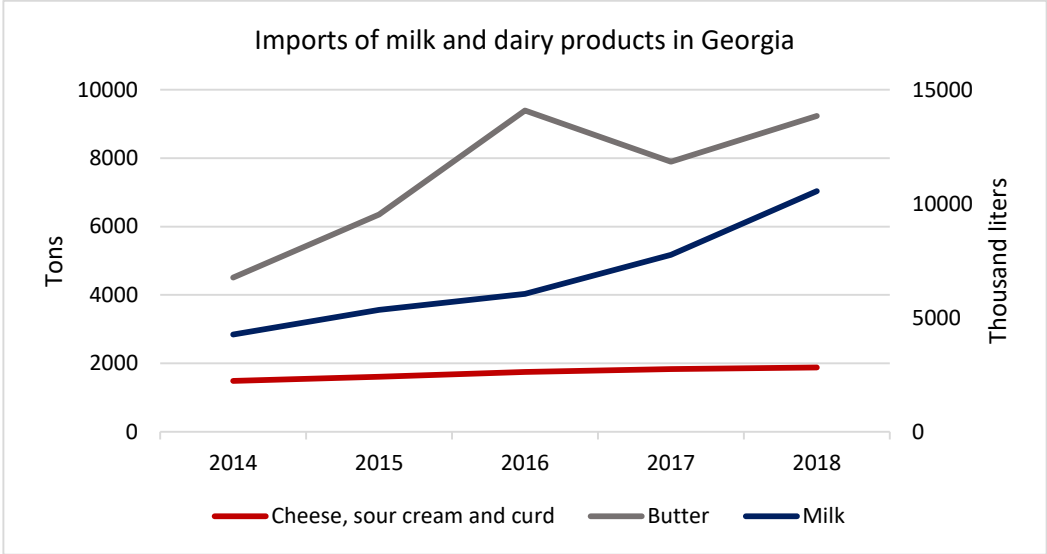
Table 11. The number of registered hotels and other short-term facilities, by municipality

Functional regions	Municipalities	Registered hotels and the quantity of other short-term placement facilities	
		Registered	Active/Operating
Tbilisi functional region	Tetritskaro	5	2
Kutaisi functional region	Oni	8	7
	Lentekhi	8	3
Marneuli functional region	Tsalka	5	2
	Dmanisi	0	0
Akhalsikhe functional region	Adigeni	20	18
	Aspindza	6	5
	Akhalkalaki	15	8
	Ninotsminda	3	2

Source: Geostat, 2019

Importers are one of the most important participants in the chain, and the imports of milk and dairy products have an increasing tendency (Figure 6). The import of milk rose by 10,557 thousand liters in 2018, which is 36% higher than 2017. The number of imported dairy products also increased by comparison to the previous year.

Figure 6. Imports of milk and dairy products

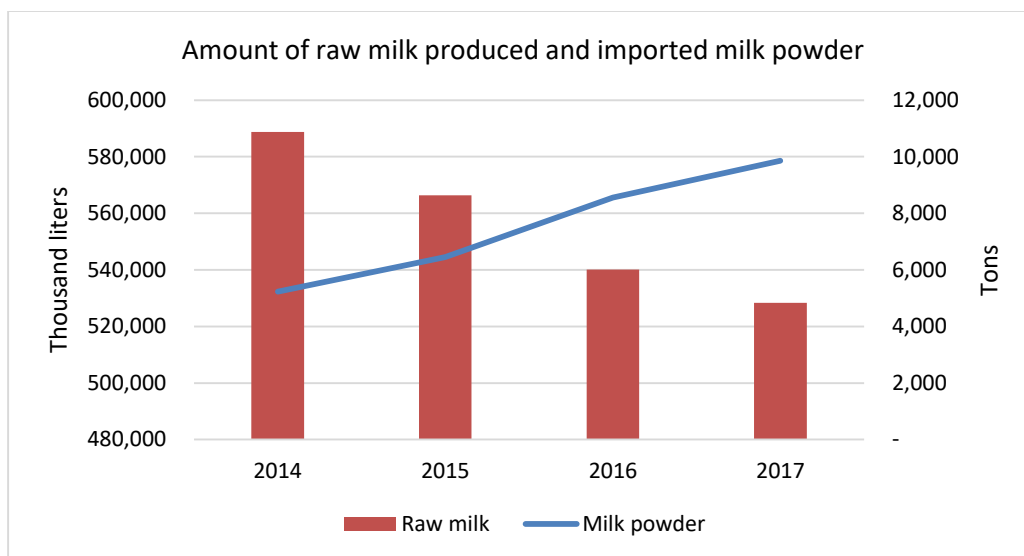


Source: UNcomtrade, 2019

Dairy product importers are not located in the mountains and operate mostly in gravity centers; however, they maintain a close relationship with processors and intermediaries (distribution companies), through which they are connected to milk producers. For instance, the company Prodinvest is such an importer.

Powdered milk is used in dairy products throughout the country, and Figure 6 reflects the dynamics of milk production and milk powder import since 2014. While milk production has reduced over the last four years, the amount of imported milk powder has increased (Figure 7).

Figure 7. The amount of raw milk produced in Georgia and imported milk powder



Source: Geostat and The Ministry of Finance, 2019

3.2.1.3 Supporting services

External factors - support services greatly influence the dairy value chain, and the so-called supporting service suppliers include state agencies; informational consulting centers; laboratories; food suppliers; veterinarians; educational establishments; banks and microfinance organizations; non-governmental organizations, associations and civil community organizations; business supporters; and further organizations.

Of state bodies, the most notable are the Ministry of Environmental Protection and Agriculture of Georgia (MEPA), and its agencies the Agricultural Projects Management Agency (APMA) and the Agricultural Cooperatives Development Agency (ACDA). The work of these agencies is notably spread across the mountainous regions. It is also vital to mention the ACDA's state support program for dairy cooperatives, which includes capital investments and technical support components. Yet another program supervised by the ACDA is the "rational utilization of hay-pastures in mountainous regions".

Among state agencies, it is important to mention the National Food Agency, the main organization that regularly controls food safety in hotels and restaurants. The National Food Agency is also the chief supplier of veterinary services. Data from the National Food Agency reveals that the majority of vets are found in the municipalities of Tsalka (20) and Akhalkalaki (19), with the fewest in Oni (3) and Lentekhi (2) (Table 12).

Table 12. The number of veterinarians, by municipality

Functional regions	Municipalities	The number of veterinarians
Tbilisi functional region	Tetritskaro	13
Kutaisi functional region	Oni	3

	Lentekhi	2
Marneuli functional region	Tsalka	20
	Dmanisi	14
Akhalsikhe functional region	Adigena	11
	Aspindza	12
	Akhalkalaki	19
	Tetritskaro	15

Source: *The National Food Agency, 2019*

Over the last ten years, the government has adopted many new and important resolutions to regulate the dairy sector:

- A general rule regarding the hygiene of food and animal feed: №173, 25.06.2010;
- A special rule regarding the hygiene of products of animal origin: №90, 7.03.2012;
- A rule regarding for sales of food and animals in agricultural markets: №417, 31.12.2013;
- A rule regarding business operator approval: №722, 26.12.2014;
- A rule regarding cattle identification-registration and their temporary placing and registration: №764, 31.12.2014;
- A rule approval on state registered veterinary medicine, either produced in Georgia or imported: №327, 07.07.2015;
- A resolution regarding the approval of traceability in the fields of animal and food safety, veterinary science, and plant protection: №577, 10.11.2015.^[1]_[SEP]

Beyond these resolutions, operational since 1 August 2015, there is also a technical regulation for dairy products. Its main purpose is to “define the regulation principles and protect customer rights regarding dairy products, the production of dairy products and their distribution”. It moreover determines the core definitions of milk and dairy products, and its intention is to regulate raw milk, cream, lactic acid, butter, cheese, cheese products, and other dairy products.

Since 1 July 2017, due to the regulations, it is prohibited to use the title “cheese” on any product made from milk powder. Similarly, butter is also regulated, and it is prohibited to use word “butter” if vegetable fat, or anything other than milk fat, is used in its production.

From March of 2019, a technical regulation regarding the rule of labeling food to inform the customer about products is in place. This technical regulation ensures additional requirements for food labeling, which aims to protect rights and increase customer awareness. The regulation was developed through the obligations of the Deep and Comprehensive Free Trade Area (DCFTA); based on European Commission regulations and directives: N1169/2011, N1333/2008,1332/2008, 1334/2008, 2006/114, 2913/92, 2002/46, 2009/39 (SES, 2019; the National Food Agency, 2019).

MEPA’s regional information-consultation centers (RICC) are represented in every municipality and they are a crucial source of information. They assess the dairy sector’s current tendencies, challenges, and opportunities. These centers also maintain close connections with producers. Besides the RICC, there are also private consulting companies, such as Rural Advisory Services (RAS).

Laboratories also play an important role in the dairy value chain. In total, there are eleven MEPA laboratories operating in Georgia. They are located in Tbilisi, Kutaisi, Akhaltsikhe, Gori, Marneuli, Dusheti, Gurjaani, Ambrolauri, Ozurgeti, Zugdidi, and Batumi. There are, moreover, a number of private laboratories (the Ministry of Agriculture Laboratory, 2019).

Amongst animal feed suppliers, there are several local producers of combined feed, like Nutrimax, Agrokiziki, and Inveti. While, animal feed importers include Caucasus Genetics and Sano.

Every level of educational establishment is represented in the mountainous regions, however vocational education institutions are particularly relevant to the dairy sector. In selected municipalities there are the following vocational education and training (VET) schools:

- The public Opizari college, located in Akhaltsikhe, offers programs in veterinary sciences and food production;
- The Erkvani vocational college, located in Ambrolauri, which offers on-job trainings to students

Samtskhe-Javakheti State University in Akhaltsikhe also offers a bachelor's program in agronomy; which includes fundamental livestock husbandry and animal feed production.

In terms of NGO influence, one has to note the impact of the ENPARD program and the Swiss Agency for Development and Cooperation (SDC) on market alliances in livestock farming in the regions of Samckhe-Javakheti and Kvemo Kartli.

The number of available banks and microfinance organizations (MFI) differs by each municipality (Table 13). For example, there are simply no MFIs in any of the respective municipalities, and relatively few banks in Lentekhi and Tetrtskaro.

Table 13. The number of banks and microfinance organizations, by municipality

Functional region	Municipality	The number of banks	The number of MFIs
Tbilisi functional region	Tetrtskaro	2	0
	Oni	3	0
Kutaisi functional regions	Lentekhi	2	0
	Tsalka	4	0
Marneuli functional region	Dmanisi	3	0
	Adigeni	3	0
Akhaltsikhe functional regions	Aspindza	3	0
	Akhalkalaki	6	0
	Ninotsminda	3	0

Source: The official websites of commercial banks and microfinance organizations.

Various associations, business support groups, and civil society organizations also have representation in the mountainous regions. Their core mission is to support local production and to improve living standards in rural areas, both of which are vitally important in remote areas.

It is moreover significant that Local Action Groups (LAG) have been developed within the EU ENPARD program. Though, among the selected municipalities, LAGs are only available in Tetrtskaro and Akhalkalaki, with a future development planned for Tsalka.

Georgian Veterinarians' Regional Associations (VRAs) are also important within the dairy value chain. Their primary mission is to improve vet services in Georgia, to deepen veterinarians' professional skills, and to increase the number of local veterinarians.

Associations work throughout the country, including the mountainous regions. The various associations in the dairy value chain are listed below:

- Sakrdze, which combines 40 dairy processors;
- The Georgian Milk Association, which unites 14 intensive farms;
- The Cheese Production Guild, which brings together over 100 cheese producers;
- The Georgian Farmer Association, with more than 3,000 members;
- The Guda Cheese Production Association, recently established with five current members;
- The Milk Supplier Association, which unites 250 milk producers;
- The Georgian Shepherd Association, which has 500 members;
- The Tushi Shepherds Association, which has 70 members.

There are also the following civil community organizations in the sector:

- The mountain development center, located in Stepantsminda, has a core objective to promote civil society engagement in the advancement of mountainous regions. They also support agricultural development in the mountains and in the milk price chain;
- The sustainable development association of Racha, which is located in Ambrolauri, seeks to develop local producers' qualifications and to support the accessibility of markets;
- The Samkaro Union, in Akhaltsikhe, aims to provide information to local producers and manufacturers regarding all-inclusive market spaces.

3.2.1.4 Factors affecting competitiveness in the sector

An evaluation of factors that affect the dairy value chain is presented in Table 14 below:

Table 14. Factors affecting competitiveness in the dairy sector

Production factors

Natural resources
<p>The majority of municipalities in mountainous regions have rough climate conditions. The steep relief should be also be noted, though some municipalities have a warm and moderate climate (Tetritskaro, Dmanisi, Akhaltsikhe, Aspindza, Adigeni). Alpine pastures, a very important natural resource for the development of livestock, are also accessible in mountainous municipalities (see the Annex, Table A3).</p>
Human resources
<p>A general tendency of the workforce is to migrate away from the mountains. This is particularly notable in Lentekhi and Oni. Moreover, the majority of their population (60-70%) is of retirement age.</p> <p>There are many abandoned villages, while in some villages only a few people remain over winter. This negatively affects the development of the livestock sector, as it requires a relatively young workforce.</p> <p>Although some families have settled in municipalities (for example in Tsalka) from Guria and Samegrelo, and they are engaged in dairy production, there is still a lack of workforce, veterinarians, and technicians in every municipality.</p>
Capital
<p>Grants from international organizations and state programs have improved access to capital, nevertheless, access to commercial financial resources is still low. High-interest rates on loans and mortgage requirements reduce access to capital for local producers.</p>
Geographic location and transport infrastructure
<p>The majority of municipalities (Oni, Lentekhi, Dmanisi, Adigeni, Aspindza, Akhalkalaki, and Ninotsminda) are on a borderline, and it is very important to reduce the migration rate from those municipalities for reasons of national security.</p> <p>In terms of transport infrastructure, the main roads are in a satisfactory condition, though village roads often require repair. Such roads can only be traversed slowly, and the utilization of those roads can damage vehicles, thus increasing local dairy processor expenditure.</p> <p>It is also worth mentioning that inaccessible roads to mountain pastures can delay summer milk delivery. While in winter the roads are closed, and cheese producers must remain in the mountains.</p>
Other infrastructure

There is no natural gas in Lentekhi or in the villages in the area. Moreover, several villages are lacking tap water and electricity. While in the Akhaltsikhe functional region, there are problems with the electricity supply which hinders food safety standards in cheese production. Dairy processors have discussed both communication issues and the availability of natural gas.

Technologies

Milking machines are used in intensive farms and not in family farms, and typically traditional methods are still used in dairy production; with different varieties of cheese being produced, especially in the Akhaltsikhe functional region.

Milk collection with special equipment (refrigerated cars) has become a challenge for factories, as most milk collection vehicles are not properly equipped.

Many dairy processing factories are also not fully equipped, for example in processing extremely fatty milk.

Innovations

There were no innovations identified in any of the municipalities during the research.

Market factors (size, customer characteristics, methods of sale)

There is a high demand for milk and dairy products. Most dairy consumers are children and adolescents; thus, the consumption rate is highest among these ages. The number of dairy products created from milk powder is significant, as is the import of milk powder products.

In most municipalities, every form of dairy is under production: cheese, butter, cream, sour cream, matsoni, etc. The most popular dairy product in Georgia is cheese, and the following types of cheese are produced throughout the municipalities: the so-called factory cheeses, Imeruli, Sulguni, Armenian (ham in Akhalkalaki and Ninotsminda), smoked cheeses, Swiss (Akhalkalaki), and Georgian Parmesan (Khizabevrian Batiste).

The price of the milk changes seasonally, from 0.7 GEL to 1.25 GEL per liter. While the average prices for cheese are: factory cheese, 8.5-9 GEL per kilo; Imeruli, 6-8 GEL per kilo; Sulguni, 8-11 GEL per kilo; sprinkled cheese, 10 GEL per kilo; smoked cheese, 15 GEL per kilo; Armenian (ham), 10-11 GEL per kilo; Swiss, 30 GEL per kilo; and Parmesan, 35-40 GEL per kilo.

As discussed, the relative municipalities have only a few local markets. Tbilisi is the main selling market for the Akhaltsikhe functional region as well as Tetrtskaro, Dmanisi, and Tsalkamunicipalities. In Oni and Lentekhi, dairy products are primarily consumed locally, and the remainder is sold in Kutaisi.

In the Akhaltsikhe functional region, most producers have private and corporate customers. Dairy products are delivered by the producers themselves or by a third party. They also deliver dairy products to hotels and sanatoriums in Borjomi, Batumi, and Kobuleti (for example, the Javakheti factory in Ninotsminda).

It is furthermore noteworthy that 15% of items produced by Alpine Javakheti Ltd. (in Ninotsminda) are exported to the US and Israel. While the company Vaio Valley 2017 sells its products on a website, soflidan.ge, highlighting an innovative method of sale for the region.

Other sectors directly or indirectly associated with the selected sector

Feed production and veterinary services directly relate to the dairy sector, and both fields are underdeveloped. One of the limiting factors for animal feed production is a limited access to small scale machinery suitable for small land plots in mountains.

Veterinary services are generally covered by the National Food Agency, and the private veterinary sector is still undeveloped. Farmers are also unwilling to spend financial resources on preventive actions (CARD & GFA, 2018). The number of young veterinarians is extremely limited and youth demand entering the profession is low. Furthermore, those that master the profession are often not interested in working in rural areas and usually seek jobs in shops, private companies, or veterinary clinics (PIN, 2015). Consequently, there is a deficit in this field, most visible in mountainous regions where the migration of the young population is generally high.

Lack of machinery and underdeveloped vet services contribute to low sector productivity, and thus cause seasonal dairy production and a greater dependence on imported milk powder.

Milk production is directly connected to agrotourism. For hotels and restaurants, it is important to use local dairy product suppliers. However, because of poor local quality and unstable supplies, tourists are sometimes forced to buy imported products.

Governance (state regulations and standards)

Over the last ten years, despite tight regulatory control in the dairy sector, the main challenge has been executing the regulations. Such poor execution is notable in the following:

1. The absence of control over unregistered individuals in the production, processing, and the distribution of milk and dairy products;
2. A lack of control in dairy distribution by legal entities, leading to consumers potentially coming across expired products in supermarkets;
3. A lack of control of labeling by legal entities; in some cases, information on labels is incomplete or blurred, and the consumer is unable to identify whether the product is produced from real raw milk.

Poor consumer awareness must be also mentioned during the execution of the regulations. Many consumers are unaware of how to act when they discover a food safety violation. The current

legislation formally regulates business operators registered within the dairy sector, nevertheless 97% of milk is produced on family farms (Geostat, 2019). Thus, the regulations do not apply, and, in most cases, dairy production safety practices are being violated.

Regarding state projects, it is noteworthy that support agencies (for example APMA) have successfully completed many projects. Although, there are cases in which state program rules do not take into account the local context of the mountainous regions. Certain program deadlines and competition terms overlook the challenges of documentation collection (the applicant's location, availability of a notary and other services, etc.) There have been cases when the application process had ended before the applicant had ever managed to resolve various administrative issues. This is particularly apparent in high mountain regions, those most distant from Tbilisi (for example, the Oni and Tsageri municipalities).

3.2.1.5 SWOT analysis

Milk production in the mountainous regions is characterized by certain peculiarities, some of which either promote or prevent development in the sector. The key weaknesses and threats to dairy production in Georgia's mountains are summarized in Table 15.

Table 15. SWOT analysis of the dairy sector

Strengths	Weaknesses
<p>Production factors:</p> <ul style="list-style-type: none"> • The traditionality of the livestock sector in mountainous regions ensures experience and knowledge throughout the field; • The availability of pastures (including alpine pastures); • The suitable climatic conditions for livestock development; • The proximity to Tbilisi of certain municipalities (Dmanisi, Tetrtskaro, Tsalka). 	<p>Production factors:</p> <ul style="list-style-type: none"> • The underdevelopment of the feed base; • The poor genetic potential of local breeds and their decline; • A lack of veterinarians; • A lack of land and high land fragmentation; underdevelopment of the land market; • Steep relief (e.g. Oni, Lentekhi) and strict climatic conditions; • Limited access to mechanization, especially smaller equipment; • The cities and villages with no access to natural gas (Lentekhi); • A lack of internal transport infrastructure between villages;¹ • A lack of roads and other infrastructure in mountain pastures. <p>Connection to other sectors:</p> <ul style="list-style-type: none"> • A weak supply of dairy products for hotels and restaurants.

	<p>Governance:</p> <ul style="list-style-type: none"> • A lack of state control over dairy producers; • Inconsistencies in the state programs relating to mountainous regions.
Opportunities	Threats
<p>Market factors:</p> <ul style="list-style-type: none"> • High demand for local dairy products from local people, as an import replacement; • The dairy trade to EU countries within the association agreement; • Diversification of dairy products; • Connections to other sectors; • Agro-tourism development via extensive and intensive livestock farming; • Biologically and ecologically pure dairy production. <p>Governance:</p> <ul style="list-style-type: none"> • A high number of programs financed the by state and donor organizations in agriculture, including the dairy sector. 	<p>Production factors:</p> <ul style="list-style-type: none"> • Population migration from the mountain and a lack of effective workforce; • Natural disasters (landslides, heavy snows) and climate change; • The spread of diseases. <p>Market factors:</p> <ul style="list-style-type: none"> • Deterioration of relationships between trading partners. <p>Governance:</p> <ul style="list-style-type: none"> • Political instability; • Threats to border locations.

¹ During milk collection, poor-quality roads cause extra fuel costs, worsen the quality of milk, and cause transport amortization, etc. This is particularly difficult for the following Samtskhe-Javakheti destinations: Gogasheni, Samsari, Bezhani, Altumani, Olaverdi, Kumurdo-Akhalkalaki, Spasovka, Arlovka, Toria, Eshtia, Abuli, and Takhcha-Ninotsminda.

3.2.1.6 Conclusions and recommendations

Considering the dairy value chain in the mountains and the factors affecting the sector's competitiveness, one must note that livestock husbandry, and thus dairy production, are traditional activities in the mountainous regions. Nevertheless, due to the high migration rates of the youth, development of the industry is hindered.

The majority of livestock farms represent family holdings, where the productivity of local cattle breeds is poor. Consequently, the lack of raw milk creates a significant need for milk powder. Therefore, local milk production, being limited, does not fulfil the demand, nor does it conform to food safety standards.

Most of the milk produced in the mountains is obtained from family farms and only a rather small amount from registered dairy producers. Nonetheless, every type of milk product is still produced in the mountains and sold throughout the country.

With regard to resources, in order to comply with food safety regulations and ensure sustainable development in the sector, it is recommended to:

- Favor the grouping of family producers, in production cooperative or other flexible types of cooperative arrangements, in order to generate economies of scale and the advantages of larger-scale production, investments and productivity
- Invest in road improvement, especially in villages producing high volume of quality cheese. Provide electricity and/or gas infrastructure to these places.
- Help milk collectors to improve their equipment and fund milk collectors and processing enterprises (in particular in Racha-Lechkhumi where collectors and processing enterprises are largely unregistered).
- Create a financial incentive for veterinarians to work in mountainous regions
- Promote vet studies and training programs
- Increase access to small-scale mechanization via installment or leasing, to contribute to animal feed production;
- Introduce innovations into the sector. For example, the development of a vertically integrated production cycle, which uses whey to feed domestic animals (e.g., pigs); the use of bio-humus as a fertilizer; and the use of fertilizers in greenhouses;

With regard to market development and diversification, it is recommended to:

- Create a local commercialization association (or cooperative) of producers in each functional region, to identify all hotels and restaurants to which farmers could sell cheese directly, to exchange information and to cooperate
- Develop some specific branding for traditional cheeses, for example by creating specific labels of certifications, in order to generate premium higher margins.
- Favor exports of traditional Georgian cheese. Create a unit to promote Georgian cheeses in other countries (cheese stores, etc.).
- Involve livestock farms in agro-tourism, for instance in cottages and farmers' houses, for tourists interested in farming from locals wishing to share their experiences;
- Develop degustation sites in the yards of milk enterprises; this will ensure that dairy products, alongside other agricultural products (e.g. wine and honey), are sampled;

With regard to governance, it is recommended to:

- Control the use of powdered milk; improve the legislation concerning registered milk producers and processors;
- Enhance the control of family farms and ensure fair competition by offering alternatives for local farmers who do not produce dairy products to food safety standards;
- Adapt to state programs related to the mountains (e.g., APMA projects);
- Promote land leasing and facilitate the expansion of farmers willing to lease;
- Improve mountain pasture management and develop infrastructure for the promotion of milk and dairy products, and ultimately save costs.

3.2.2 Hotels and similar accommodation

Aside from dairy production, tourism is a key leading sector in the high mountainous municipalities. Tourist activity is being developed in all mountainous regions. There are currently many hotels and guesthouses in the mountains, and they have been defined as a priority sector for the following functional regions and their relevant municipalities (Table 16):

Table 16. The list of municipalities and relevant functional regions

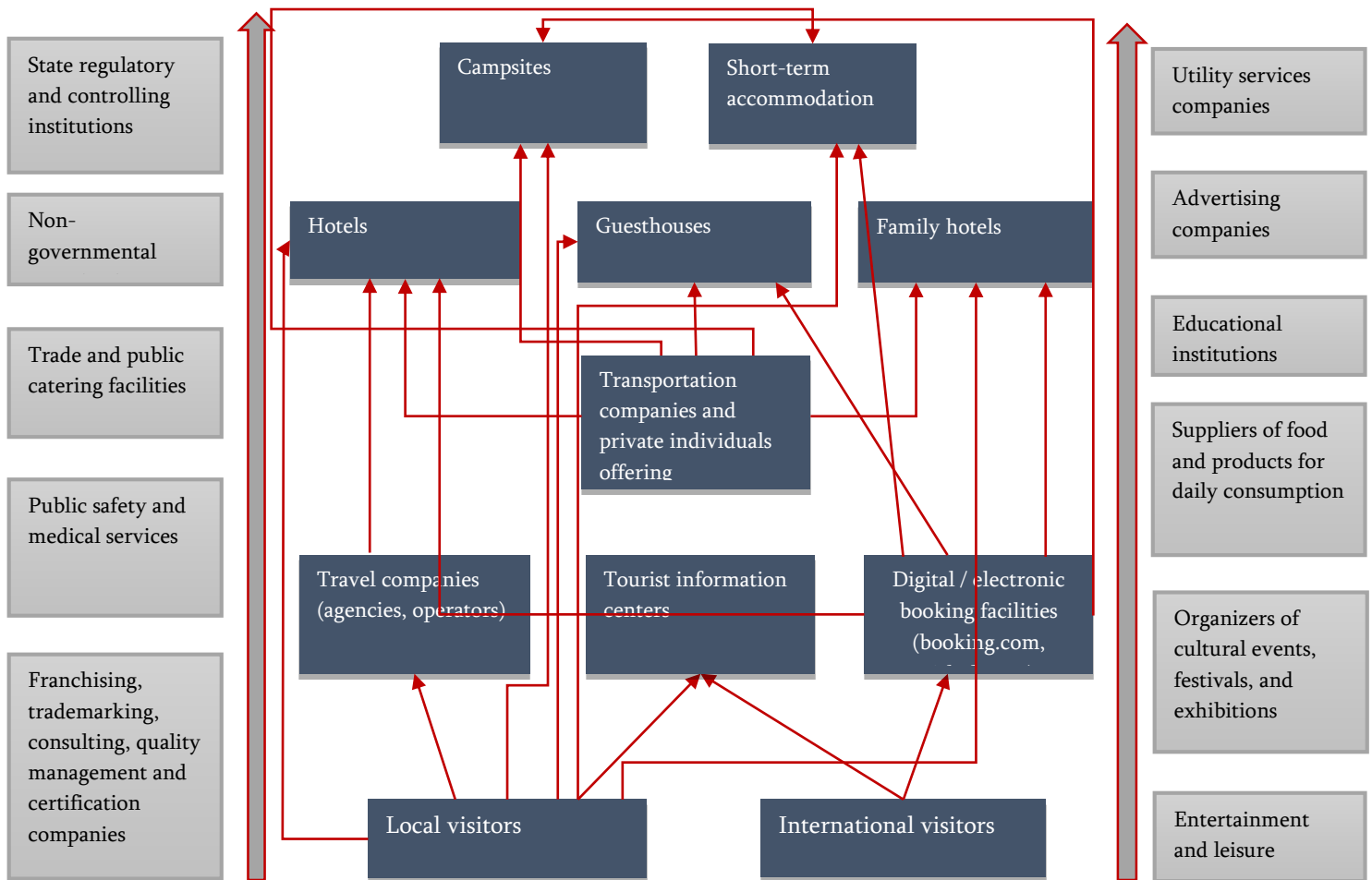
Functional regions	Municipalities
Tbilisi functional region	Kazbegi
Borjomi functional region	Borjomi
Telavi functional region	Akhmeta
Zugdidi functional region	Mestia
Batumi functional region	Keda Shuakhevi Khulo

In the municipalities listed above, the value chain of hotels and similar forms of accommodation is affected by a number of characteristics and conditional on location, the natural setting, the availability of infrastructure and services, and their operation. The municipalities of Kazbegi, Borjomi, and Mestia provide every local type of hotel, guesthouse, and short-term accommodation. While the Akhmeta municipality, in particular Tusheti, is represented by relatively low-class hotels and guesthouses. In the Keda and Shuakhevi municipalities there are only several family hotels, where in the Khulo municipality, there are guesthouses and few hotels. Therefore, this sector is undergoing different stages of development and is thus characterized by various opportunities and interests.

3.2.2.1 Value chain mapping

The value chain of hotels and similar types of accommodation in the mountains is best represented in the following manner (Figure 8):

Figure 8. The value chain of hotels and similar types of accommodation



Within this chain, the main participants are local and international visitors, travel agencies and tour operators, tourist information centers, digital electronic booking facilities, transportation companies, hotels, guesthouses, family hotels, other forms of short-term accommodation, and campsites. The chain also indirectly involves various companies providing visitors with additional services, such as internal tours, gastronomic services etc.

The support services of the main participants are provided by: local and central public authorities responsible for regulation and control; non-governmental organizations; educational institutions; public catering and shopping facilities; public safety and medical services; entertainment and

recreational facilities; franchising, branding, consulting, quality management and certification companies; organizers of cultural activities, festivals, and exhibitions; and local farmers.

3.2.2.2 Characteristics of the main participants of the chain

Every local form of accommodation is available throughout the municipalities, namely: hotels, guesthouses, family houses, and short-term housing. These include:

- Low-class as well as medium and high-class hotels, including international brands, totalling over 21 rooms. Where, high-class hotels are only available in the municipalities of Kazbegi, Borjomi, and Khulo (as current investments). There are significantly fewer top-range hotels than other forms of accommodation, and they are found largely in ski resorts. Low and mid-range hotels are found in Kazbegi, Borjomi, and Mestia, and in the Khulo municipality (Goderdzi).
- So-called hotel houses, with fewer than 20 rooms, are found in all municipalities. A large number of such houses are located in Kazbegi (Gudauri), Borjomi (Bakuriani), and in Mestia. These guesthouses are a hybrid type of small accommodation, akin to low budget hotels. They offer bed and breakfast (B&B), where it is possible to eat two or three times a day. This type of accommodation is typically distant from the owner’s home and is intended for the reception of guests.
- Family hotels are a hybrid type of small hotel, between budget hotels and private houses, with a number of rooms varying between 4 and 10. They also offer bed and breakfast, where it is possible to eat two or three times a day. The owners often also live near their guests. Such accommodation is frequently found in the municipalities.
- Short-term housing, including private houses, country houses, cottages, and apartments, which are rented seasonally by their owners. These services do not include breakfasts, though the rooms are arranged with a kitchen area. Similar accommodations are generally available in the municipalities of Kazbegi and Borjomi. There is no statistical data for short-term housing facilities.
- Recreational and camping zones, in places attractive to tourists, are usually owned by a municipality or a private owner and exist in each municipality.

Table 17 includes the Geostat data on registered and operational hotels and other short-term accommodation. However, due to the significant numbers of unregistered accommodation, it is impossible to define the exact quantity or type in any particular municipality.

Table 17. Number of registered and operational hotels and similar accommodation places

Functional region	Municipalities	Number of registered hotels and similar accommodation places	
		Registered	Active/Operational
Tbilisi	Kazbegi	47	31
Borjomi	Borjomi	87	48
Telavi	Akhmeta	35	11

Zugdidi	Mestia	105	17
Batumi	Keda	18	4
	Shuakhevi	16	8
	Khulo	17	3

To help attract large groups of foreign guests seeking high-quality services, travel agencies find cooperation with hotels attractive. Travel companies also offer transportation services to visitors. While hotels also independently attempt to attract visitors.

Whereas, guesthouses and short-term lodgings do not cooperate with tourist companies and attract customers privately. Visitor typically find their own means of transportation to hotels. Although, taxi drivers frequently recommend a hotel or take tourists directly to a hotel.

Tourist information centers, located in municipal centers, airports, and tourist centers, play an important role in the chain. They offer visitors advice about various tourist routes and sights, as well as hotels and accommodation facilities.

There are various web platforms (e.g., booking.com, hotels.com) available for owners to register their accommodation, sell rooms, and control reservations (bookings). It is noteworthy that in the mountains most hotels and facilities actively use these platforms.

Transportation companies are also main participants within the chain, as transport services vital for individuals in the mountains. Consequently, such services are available throughout most mountainous municipalities. Although hotels generally offer transport and collection services, their visitors mainly opt for different types of transportation such as car rentals for example.

3.2.2.3 Support services

Suppliers of food and products for daily consumption are the most important of the support services. Distribution companies, local farmers, households, and open markets are each considered as suppliers. The suppliers are present at the local level, as well as in gravity centers, where they establish trade links with hotels and other accommodations. Their products include fruit, vegetables, meat products, and various other items for daily consumption, including household and hygiene related goods.

Big hotels struggle with supply of local fruits, vegetables, milk, and meat products from farmers. Hotels have an almost complete supply from the gravity center of their functional region, and supply occurs through relatively well-developed distribution services. One of the main problems hotels face is a scarcity of professional staff, as they are often attracted from a gravity center (e.g., from Tbilisi to Kazbegi).

Unlike large hotels, guesthouses attempt to offer tourists homemade or regional local products. While they are often more successful than hotels, guesthouses are not typically fully supplied by locally produced food and goods. As to other types of short-term of accommodation places, they do not face this issue as they do not offer food to their visitors.

Utility service providers offer TV and communication, water, electricity, natural gas, and cleaning services. Although most municipalities do not suffer from problems, it is notable that for some time the internet was unavailable in the Akhmeta municipality (Tusheti); it is now available in certain villages.

Advertising-information companies are composed of different private and state organizations. The state is actively trying to popularize the country on an international level by presenting its potential for tourism in various exhibitions. Tourist information centers act as one of the main networks in this chain, while private advertising companies also work in tourist locations and in various forms of accommodation, mainly in large hotels.

Public nutrition and trade facilities are comprised of restaurants, shops, and bazaars. Borjomi is remarkable due to its abundance of such places, although in other locales the full spectrum of these services is not yet available. The same is true of recreational and leisure facilities, for instance museums, theatres, parks, protected regions, ski runs, pedestrian paths, sports halls, swimming pools, etc.

State regulatory and controlling institutions also play an important role in the chain, for example:

- The National Tourism Administration aims to attract foreign tourists to Georgia, develop domestic tourism and infrastructure, promote tourism and support human resource development in this field;
- The National Food Agency inspects hotels and other accommodation, and the Agency has full coverage over the country;
- The Emergency Management Agency ensures compliance with regulatory norms, technical fire safety regulations and standards in hotels and similar forms of accommodation;
- An environmental and ecological examination is carried out by LEPL the National Environmental Agency;
- The City Halls supervise construction related matters at the municipal level.

Beyond regulatory state agencies, one can consider other state agencies and NGOs which contribute to increased access to capital and financial resources in the value chain. Donors provide grants programs, and banks and microfinance organizations offer credit portfolios specifically for hotels. At the same time state institutions such as state agency LEPL “Produce in Georgia”) support development of the hotel industry. The role of non-governmental organizations in tourism and the hotel business should also be highlighted, and their activities are particularly important for family hotel owners. These organizations often operate free training sessions on various topics, and they conduct surveys and provide consultations for owners of family hotel.

In terms of education, the Kazbegi municipality is within the Tbilisi functional region, and thus has access to professional programs. Furthermore, the Ilia Tsiamdzgvrishvili Community College is located in the village of Tsiamdzgvrantkari in Mtskheta, and from there those in Kazbegi can develop from professional programs and training courses on the hotel business and tourism. Equally, there is the Akhaltsikhe vocational school, Opizar, towards Borjomi. While in Alian, there is a vocational college, Aisi, which prepares guides, and plans to include additional professions as well. In Mestia, there is also a vocational college, Tetnaldi, which accounts for tourism-related professions. Additionally, in

the village of Khichauri in the Shuakhevi municipality, there is the St. Tbel Abuseridze Teaching University, which includes professional programs and training in various subjects. Since Khulo, Shuakhevi, and Keda have close ties with Batumi, where there are various vocational colleges and higher education institutions,

Advisory, consulting, quality management, and certification companies offer consultations and certification to various types of accommodation places. Such companies also issue licenses to hotels from a specific brand giving them the right to operate under that brand.

The Mountain Resorts Development Company Ltd., the Ministry of Regional Development, and Infrastructure of Georgia have contributed to the development of additional ski routes.

The organizers of cultural events, festivals, and exhibitions tend to be the same state and private organizations that hold similar events. For instance, Tbilisi City Hall heads such organizations for Georgia’s tourist product development. For instance, the state is currently implementing the project Check-In Georgia, while other projects include the TBC Jazz Festival and Club Iveria, amongst others.

The police and rescue services comprise public safety and emergency organizations, while medical institutions include clinics, hospitals, and ambulance and emergency services.

3.2.2.4 Factors affecting competitiveness in the industry

The table below identifies the assessment of factors affecting the value chain of hotels and similar accommodation (Table 18).

Table 18. Factors affecting competitiveness in the industry

Production factors
Natural resources
<p>In the mountains, there are various advantages of natural resources that have a positive effect on the industry, such as the unique and attractive landscape; rich flora and fauna; the clean environment; coniferous and mixed forest arrays; alpine meadows and pastures; mineral and health waters; and lakes, rivers, and waterfalls.</p> <p>Furthermore, the number of protected regions and their respective value is important. The Keda municipality borders the protected regions of Machakhela, Mtirala, and Kintrishi. While, the Borjomi municipality includes the Borjomi-Kharagauli protected region, and Mestia borders the Svaneti protected region. Kazbegi includes a national park within the Kazbegi protected region. Finally, the Akhmeta municipality includes both the Batsara-Babaneuli and Tusheti protected regions.</p>

The existence of these territories positively influences the industry and provides opportunities for additional tourist development.

Human resources

The main problem for these municipalities is migration and outflow of the youth. The absence of qualified labor is apparent in all municipalities. Besides which, most of the population in the target municipalities have reached retirement age. Thus, demand for many vocations and professional skills is high (e.g., administrators, accountants, bartenders, cooks, artists, carpenters, electricians, welders, etc.). Ultimately, more than half of all employees are local, and the remainder come from different regions and cities (the latter are often more qualified).

Guesthouses are primarily managed by their owners and provide various jobs for their residents, although there are rare cases when non-local laborers work in guesthouses. High and mid-range hotels have enough resources to prepare and train their staff. Whereas, low-class and budget hotels and guesthouses find it hard to attract professionally skilled people. Many of these hotels also have a problem using English, which constrains communication and reduces service quality.

In family guesthouses, the staff are commonly made up of family labor, though in some cases they may also employ one or two local people. The interviews revealed that owners and staff of these establishments need to be trained in the areas of fire safety, food safety, and small business location management.

Capital

Investor interest is rather high in the municipalities of Kazbegi, Borjomi, Mestia, and Khulo, which positively affects local revenue and offers further motivation to create hotel businesses. Investment projects are currently underway at Danisparauli and Goderdzi pass, which will provide the Khulo municipality with significant potential for the development of a mountain ski resort. Various types of hotel are also presently under construction.

In general, municipal budgets are insufficient to eliminate existing infrastructural challenges. Nevertheless, in some municipalities, it remains not possible to fully allocate their existing budgets due to the lack of reliable service providers who can participate in tenders.

Access to commercial credit is poor due to high interest rates, participation, loan terms, and other obligations.

Under ENPARD, the European Union is implementing the Village Development Program, which started in Akhmeta and Mestia, and will continue in the municipalities of Borjomi, Kazbegi, Keda, and Khulo. Projects related to tourism are also supported by ENPARD, although the 2019 program is limited by time and financing.

Regional programs are also under implementation for the development of the hotel industry, and micro and small businesses. The respondents consider the initiative extremely positive for the

promotion and development of the local economy, although the mechanism is extremely bureaucratic and financial resources are limited.

Geographic location and transport infrastructure

Tourist locations of Akhmeta and Mestia are the most distant from their respective gravity centers and travelling there requires quite a lot of time and is tiresome. The main roads are paved in Mestia and there are few obstacles throughout the seasons. Whereas, the rural roads are in disrepair and often the land is unpaved, which, due to heavy snowfall, are often closed and traffic can be stopped for several hours. However, the reconstruction of the Mestia Ushguli road section is ongoing, and the new Tsageri-Lentekhi-Mestia road aimed at facilitation of transport access to Mestia from Kutaisi and Zestaponi is under development as well. Visitors can also access Mestia by taxi or minibus from Zugdidi, and there are flights from Kutaisi and Tbilisi. However, flights are sometimes delayed due to poor visibility and weather conditions.

In Akhmeta, the absence and the lack of visitors, particularly in winter, is caused by natural, climatic conditions and a faulty road infrastructure; the road is often impassable because of snowfall in Tusheti. It requires permanent restoration as there is the significant risk of landslides and water damage. While in certain places, such as Tsovata and Gometsari there are no roads at all. From Tbilisi, a car takes around two hours to reach Kvemo Alvani and between four to five hours to reach Omalo. In winter, once per week, from Kvemo Alvani a helicopter, carrying up to 20 local people, also takes off for Omalo (noncommercial flight). Seasonally, taxis drive from Tbilisi and Akhmeta to Tusheti, while to Pankisi a minitaxi runs several times a day from Akhmeta. The internal roads to Pankisi, however, remain in disrepair. A minitaxi to Ilto gorge runs from Akhmeta on Sundays, although the roads are also in a state of disrepair.

Kazbegi borders the Russian Federation, thus there is international transit in the municipality. However, the internal roads are not owned by the municipality. Periodically, the roads become blocked due to heavy snow, and problems with road clearing negatively affect tourism and the safety of the population. At such times, it can take three hours to get from Tbilisi to Stepantsminda.

Towards Borjomi, located on the Khashuri Akhaltsikhe central road highway, the road infrastructure is regulated and transport can pass in all seasons. The Tbilisi-Borjomi journey takes 2-3 hours by car, and less than an hour from Borjomi to Bakuriani. The road infrastructure in Borjomi-Bakuriani remains satisfactory, with tourist sites easily reachable, although certain repairs for internal roads and infrastructure are still necessary in Bakuriani. Visitors often use taxis and railway transport, available from Tbilisi to Borjomi. There is also a railway from Borjomi to Bakuriani, however, the local railway stations need rehabilitation.

Keda, Shuakhevi, and Khulo are located on the Batumi-Akhaltsikhe central highway. The road infrastructure from Batumi to Khulo is satisfactory but requires expansion. Transport can move in every season, though the Goderdzi section can be slow in winter because of heavy snowfall. Roads in most of Keda, Shuakhevi, and Khulo villages are rehabilitated and are in satisfactory condition. The development of Akhalkalaki-Batumi highway and the completion of infrastructural projects on the

Goderdzi pass will enable Keda, Shuakhevi, and Khulo to further develop. Similarly to Kazbegi, transit movement on Goderdzi pass from Russia is quite dense. Whereas the Akhalkalaki-Batumi highway is expected to increase transit between Armenia and the west of Georgia.

Other infrastructure

Common problems have been identified in every functional region. For instance, each of the following requires infrastructural investment: trails, lighting, rest areas, picnic and campsites, parking, and sanitary nodes. While, local architecture, museums, cultural heritage monuments, historical bridges, and observation towers are also in need of rehabilitation.

At tourist sites there are common destination markers, and information boards and banners. However, a lack of trade facilities and entertainment holds visitors back from staying longer and enjoying various sites. Local experts and accommodation owners note, moreover, that there is not enough infrastructure for the development of extreme tourism (rafting, ziplining, etc.).

It is remarkable though that the ski-slopes of Tetnuldi and Khatsvali are well-developed. Whilst in Kazbegi, a new cableway has opened from Kobi to Gudauri, which attracts skiers and sport lovers. Although, many tourists stay in Stepantsminda as hotel prices are relatively low in comparison to Gudauri.

The municipal infrastructure in Borjomi is relatively well-developed, and the ski infrastructure is also well-adjusted, however electricity supply is frequently cut.

The electricity supply in Tusheti is only found in Shenako, from a small HPP. There is no natural gas and hotels use solar energy (with the assistance of the Czech Embassy projects). Water systems are only available in Omalo and Shenako; and the villages have water supply problems. Sewerage problems are acute at tourist locations (Omalo, Shenako, Dartlo, Girev). Although, these services are available in Pankisi and Ilto. Due to low permeability, water and sewerage problems are also still common in Kazbegi.

There is a gas supply problem in Mestia, though the municipality has a system to delivery electricity. While water supply and sewerage issues are managed in the center of the municipality, the water supply to villages is problematic and the sewerage system is unregulated.

Water and sewerage issues in Keda, Shuakhevi, and Khulo are resolved in their municipal centers. However, village drinking water is not centralized, and the water supply is carried from a general or an indirect water intake. In all three municipalities, there are also problems with the gas supply, but an improvement project has been initiated and a central gas line is being developed. During the first stage municipal centers will be covered, and this will subsequently continue to the villages. The electricity supply, though, remains unhindered. The Danisparauli-Goderdzi Pass will be developed, as the expansion of a ski resort is underway. There is currently a 7 km cable route toward Goderdzi, and two new ropeways are planned in the direction of Green Lake and Beshumi. Gomarduli (in

Shuakhevi) has continued to encourage investments into mountain skiing and the development of a cableway.

Technologies and innovations

At this stage, certain hotels in the mountains use solar panels which may be considered as an innovation.

Market factors (market size, consumer characteristics, methods of sale)

The data-analytical service from the Ministry of Internal Affairs of Georgia shows that international visitors amounted to 7.2 million individuals in 2018; consisting of 4.8 million tourist trips and 2.4 million one-day visits. However, there is no statistical data for visitors at the municipal level. Only tourists who visit tourist information centers are considered, and it is thus extremely difficult to determine the size of the market. Moreover, there is no data on how many local citizens visited each municipality for their vacations.

The dynamics of visitor growth in Georgia is positive. According to Geostat, in 2018, the main purpose for visiting the country was for fun and to rest (42.7%), thereafter visiting friends and relatives (20.3%); with an additional 16.5% as transit visits; 8.7% related to business and professional activities; 6.9% for shopping; 2.7% for treatment; 0.5% arrive for educational interest; 0.3% for religion and pilgrimages; and 1.4% of visitors arrive for other reasons.

Geostat identifies that visitors are interested in the following five core activities (by priority): shopping, Georgian cuisine and wine tasting, sightseeing, nature and landscape, sea and lake shores.

Marketing is developed by partner organizations and business operators, travel agencies, various websites, and social networks. Despite this, the respondents think that marketing and advertising for the country are still weak. It is also more difficult to advertise and popularize small-scale accommodation than larger hotels.

Accommodation processes differ based on the following key factors: the location of a hotel and the resort region (for example, skiing); seasonality; hotel type; the services offered (transport, dining, pool, spa, gym, etc.); the proximity to various service providers; the amount of competition; and the currency exchange rate.

There is a wide range in the prices of accommodation between the municipalities of Borjomi, Kazbegi, and Mestia; where one can find certain top-rated (4-5 star) hotels. During the high season, the price for a double room varies from 250-500 GEL, while the cost of low-class hotels (up to 3 stars) varies from 150-300 GEL. The price of a single guesthouse room ranges from 100-250 GEL, and in family houses it varies between 30-100 GEL per double room. While, the cost of short-term placement (private houses, country houses, cottages, apartments) fluctuates between 80 to 600 lari for a maximum of six people.

In the Akhmeta municipality, particularly in Tusheti, the price of accommodation ranges from 90-230 GEL, and the price of private houses ranges from 50-170 GEL. Aside from Tusheti, there are also

guesthouses where the price varies from 50-100 GEL, although there is the exception of one hotel in which the price is around 250-300 GEL.

The price of accommodation in family hotels in the municipalities of Keda, Shuakhevi, and Khulo typically ranges between 40-70 GEL.

In Kazbegi (Gudauri and Daba Stepantsminda), Borjomi (Borjomi and Bakuriani), and Mestia accommodation is available throughout the year, however they are at their fullest during winter and summer. Depending on the season, visitors can, for instance, go skiing, or enjoy cultural and eco-tourism. In Mestia, for example, there are typically more visitors in the summer. While in the Akhmeta municipality (Tusheti, Pankisi, and Ilto gorge) eco and cultural tourism are highly attractive, though tourists only visit in the summer.

Because of ski resorts, lengthy durations are more common in winter in Kazbegi, Borjomi, Mestia, and Khulo than in the other seasons. However, the interviews have identified the need for the development of further types of entertainment. It is also noteworthy that Kazbegi and Borjomi serve every kind of tourist (low-budget and high-income visitors).

The number of tourists to the Kazbegi municipality increases annually. The municipality is focused on eco, extreme, skiing, and cultural tourism. Currently, the majority of tourists are Russian citizens, though European tourists are becoming more common. Many international visitors arrive in the winter and summer seasons, though in Gudauri especially, local tourists are frequently interested in the ski resorts; with an average visitor duration of 2-3 days.

In the Borjomi area, traditionally a Soviet Union tourist destination, the number of tourists from Europe and Asia is increasing. The municipality of Borjomi emphasizes ecological, recreational, and ski tourism. Tourists therefore come for refreshment, health procedures, and often stay for at least one week. Most of the visitors to Bakuriani are Georgian and such visitors make use all types of accommodation.

The main flow of visitors in Mestia are from Russia and Europe. In the summer, Mestia is at its most crowded. While the ski resorts primarily attract local tourists, and only some foreigners (particularly those interested in extreme sports). Mestia chiefly focuses on eco, extreme, skiing, and cultural tourism, where the average visitor stays for 2-3 days, with all types of accommodation available.

In the Akhmeta municipality, people come to Tusheti from all over the world, although they only visit in the summer. The average visitor stays for 2-3 days, where they are able to walk, ride horses, and cycle. In general, visitors come to Pankisi from Asian and Arabic countries. Although, due to a lack of roads and infrastructure, the flow of tourists to Ilto gorge is small. The Akhmeta municipality focuses on agro, eco, and culture tourism.

Skhalt gorge, in the Khulo municipality, is typically visited in the spring, summer, and fall; with agro, eco, and cultural tourism being its most significant features. Furthermore, the Beshumi summer resort is a popular destination for local tourists, while the Goderdzi resort is attractive year-round; especially to winter sport tourists and during the best agro, eco and cultural touristic periods.

The Shuakhevi and Keda municipalities are most attractive to visitors during the spring, summer, and autumn. Although in winter in the Shuakhevi municipality, Gomarduli opens as a ski resort. Whereas in Keda, as it is close to Batumi, visitors tend to stay for one day before going to Makhuntseti to see the waterfall and taste some local food. At the Makhuntseti waterfall, there are on average 3,000 visitors per day.

The tourist season of Keda, Shuakhevi, and Khulo runs from June to September and again from November to February. Visitors mainly come from Batumi or are visiting via the Batumi-Akhaltzikhe road. The main flow of visitors is from Russia, Ukraine, Germany, Austria, France, Eastern Europe, Iran, Israel, and Arabic nations. With visitors typically staying for 2-3 days.

Most visitors are interested in local wine and cuisine, the life of the local people and their traditions, historical monuments, and cultural heritage, as well as extreme tours. The Khulo municipality has, moreover, the potential for the development of a large ski resort.

Other sectors directly or indirectly associated with the selected sector

Road infrastructure and the transport sector are considered integral supporting sectors for hotel and accommodation businesses. Access to most municipalities is well provided by road transport, although in some municipalities internal roads are in disrepair. In certain cases, the roads that connect functional regions to gravity centers are in poor condition. In the Akhmeta Municipality, particularly in Tusheti, it is impossible to drive during the winter. While public transportation remains outdated and uncomfortable.

The important supporting services within the sector are provided by guides, tour operators, tour agencies, public nutrition facilities, entertainment, leisure and recreational facilities, and fairs and shopping centers. It should be noted however that all of these services are rather limited in this municipality.

Agriculture has a direct connection with the hotel business, as one of the main components behind catering services. Nevertheless, particularly in Georgia's mountainous municipalities, agriculture is poorly developed due to its natural climatic conditions and heavy migration. Hotels thus cannot be provided with a stable supply of local vegetables, fruit, fish, or meat and dairy products. In most cases (namely larger hotels and guesthouses), products are supplied from the gravity centers. Although in some instances, it is possible to use local products, which are safer and more environmentally friendly, and provide additional value for tourism. Family hotels in particular attempt to use their own products or local agricultural goods (dairy products, meat, fish, honey, vegetables, and fruit), and are consequently less dependent on gravity centers.

Governance (state regulations and standards)

The Law of Georgia on Mountainous Regions offers certain favorable conditions for the development of rural tourism. For instance, according to the law, locals are eligible for discounts on electricity and taxes.

The National Food Agency regularly checks hotels and catering establishments. Shortly, food safety, health care, and environmental regulations will affect hotels that operate in the mountains. However, unlike larger hotels with sufficient financial and technical resources, the adaptation of family hotels to the regulations is a rather complicated process. Furthermore, family hotels have access to limited information, knowledge, and experience on the measures and potential financial resources within this process.

3.2.2.5 SWOT analysis

Hotels and accommodation businesses in the mountains are characterized by certain peculiarities, some of which either facilitate or hinder the development of the sector. The strengths and weakness, and the opportunities and threats to the sector are detailed in Table 18.

Table 19. SWOT analysis

Strengths	Weaknesses
<p>Production Factors:</p> <ul style="list-style-type: none"> • Nature, flora, and fauna attractive to tourists; • Winter and summer resorts; • Protected areas, like National Parks; • Mineral waters; • Other natural resources, directly or indirectly connected with tourism; • Monuments, and historical and cultural heritage sites; • The traditional cuisine; • The local traditions, folklore, national dances; • Lakes and rivers. <p>Market Factors:</p> <ul style="list-style-type: none"> • A positive relationship of the population towards foreign visitors. <p>Management:</p>	<p>Production Factors:</p> <ul style="list-style-type: none"> • A lack of tourist signs and routes; • The absence of properly equipped rest places; • Camping regions with poor infrastructure; • A lack of qualified local staff; • Weak entrepreneurial skills; • Certain public mentality characteristics (for example, conservatism); • The poor quality of telecommunications and communications; • Limited access to electricity, water, sewerage, and natural gas; • Insufficient access to financial resources; • High levels of solid waste. <p>Market Factors:</p> <ul style="list-style-type: none"> • The absence of entertainment facilities; • Low levels of competition; • Weak marketing (non-development of advertisements and attracting strategies, low tourism mapping and prevalence of routes);

<ul style="list-style-type: none"> Local Action Group (LAG) and local development strategies. 	<ul style="list-style-type: none"> A poor understanding of the environment and environmental issues, like waste. <p>Connection with other sectors:</p> <ul style="list-style-type: none"> Faulty and uncomfortable public transport; Limited choice of public transport; Low levels of medical service (a lack of medication, and an absence of outpatient clinics, and a lack of doctors).
<p>Opportunities</p>	<p>Threats</p>
<p>Production Factors:</p> <ul style="list-style-type: none"> Diversity of mountain resorts allows the development of different types of tourism (eco, agro, adventure, extreme); Wine and gastro-tourism; Medical, recreational, and cultural tourism; Convenient conditions for environmentally clean products (a less polluted environment). <p>Market Factors:</p> <ul style="list-style-type: none"> The growing interest from international tourists towards Georgia; The lack of hotels. <p>Management:</p> <ul style="list-style-type: none"> A suitable legal and tax environment for investors; Indicators of corruption and a low crime rate; The simplicity of starting a business; The visa-free regime for over 100 countries. 	<p>Production Factors:</p> <ul style="list-style-type: none"> Natural disasters (landslides, snow, floods); Chestnut forest disease (Keda); The forest fir-tree disease- Lapachamaya (Shuakhevi). <p>Market Factors:</p> <ul style="list-style-type: none"> Most visitors come to Georgia from unfavorable economic countries; A low level of safety standards for tourists. <p>Connection with other sectors:</p> <ul style="list-style-type: none"> The construction of hydropower stations; Natural and artificial fires; Illegal logging for heating supplies. <p>Management:</p> <ul style="list-style-type: none"> Geopolitical position and location; Political and economic destabilization.

3.2.2.6 Conclusions and recommendations

Considering the hotel value chain and assessing competitive factors within the sector, one can conclude that the accommodation business is a prerequisite for: income growth in mountainous regions; diversification of the local economy; a reduction of population migration; and increased rural development. However, the population outflow, the shortage of qualified personnel, the lack of experience, and the underdeveloped tourist infrastructure still complicates development of the sector.

Demand for agricultural products in developed resort regions is high, and as the number of visitors surges, it is only going to increase. Local production opportunities are currently not fully exploited because of the population's lack of interest towards agriculture, as well as restrictive climatic conditions. Although climate is a challenge, there remains the possibility to increase local production. Thus, some municipalities, such as Kazbegi and Mestia, can produce livestock produce (milk and meat) and several types of fruit and vegetable (potatoes, apples, plums), those which are adequate for local environmental conditions. In certain areas it is possible to grow fruit and vegetables, for example Keda and Shuakhevi, but livestock production is not widely developed because of the lack of pastures. Mountain agriculture could be based around the production of organic and natural products that may bring value added into the chain and contribute to the development of gastrotourism.

With regard to production factors, it is recommended to:

- Develop peri-urban (in the out suburbs of big cities) agriculture, which provides hotels with various products;
- Link hotels and other such establishment to existing local producers. This can be done through the association of hotels, or a public program with agents on the field doing this work, and that could convince hotels to purchase local products because it increases the hotels' value for tourism. Those agents can also work with farmers in order to convince them to supply local hotels and similar establishments;
- Encourage and support vocational education to mobilize a qualified workforce for hotel industry;
- Rehabilitate outdated auto stations and train stations in Borjomi and Bakuriani;
- Purchase road cleaning equipment to ensure uninterrupted movement of tourists in such places as Kazbegi and Tusheti;
- Start and complete, in a timely manner, infrastructural road projects, such as Batumi-Akhalsikhe, Lentekhi-Mestia, Mestia-Ushguli, Akhmeta-Omallo, and Gudauri-Stepantsminda;
- Regulate the water supply and sewerage systems;
- Install markers, direction indicators, banners, or informational stands on touristic routes;

With regard to market diversification, it is recommended to:

- Develop agro, eco, cultural, and wine tourism;
- Develop extreme tourism, bicycle tourism, riding, and rafting;
- Develop locally manufactured products, handicrafts, textiles, and souvenirs and tie this production to hotel industry;
- Restore and rehabilitate historical and cultural heritage monuments, and preserve antiquities;

- Support rural development through the arrangement of public parks, rest sites, restaurants, cafés, and other similar establishments as well as through holding fairs and similar events.

With regard to governance, it is recommended to:

- Organize rescue services (medical, fire, road accidents);
- Organize a municipal shelter for stray dogs and cats;
- Introduce solid waste disposal systems and properly utilize wetlands;
- Reduce illegal logging and provide alternative energy sources such as gasification.

4. Final remarks

The research shows that cities in mounteneous regions of Georgia are not sufficiently developed to be gravity centers for other municipalities. Currently, gravity centers with the biggest functional regions coincide with the largest cities of Georgia such as Tbilisi, Kutaisi, Zugdidi, Batumi and Telavi, while potential gravity centers - Ambrolauri, Akhalkalaki, Tianeti, Tsalka and Shuakhevi suffer from low rural development resulting in outflow of local population to the gravity centers. The only exception is Mestia, where investments in tourism sector turned to be the major drivers of the regions' economic development.

Functional regions united by respective gravity centers do not always coincide with administrative regions and development policies should take this fact into account.

According to the research, hotel and dairy industries are the major drivers of economic growth in the mounteneous regions of Georgia. While this sectors are relevant for most of the mounteneous regions, they are also closely connected to each other. Both of them face challenges related to the lack of local competent human resources and limited infrastructure. Taking into consideration the sectoral recommendations, which promote the relevant sectors, the development of mountainous regions must still be integrated with territorial development and must not concentrate solely on a single sector. It is therefore necessary to use integrated approaches for the development of the whole functional region, rather than specific municipality. This will contribute to more sustainable development of the region.

Further research should be initiated in order to do a benchmark analysis of policies and projects in other countries regarding the dairy product market and hotel industry. This can contribute to finding original and efficient ways of improving those sectors in Georgia.

Annex

Figure A1. A map of night light intensity

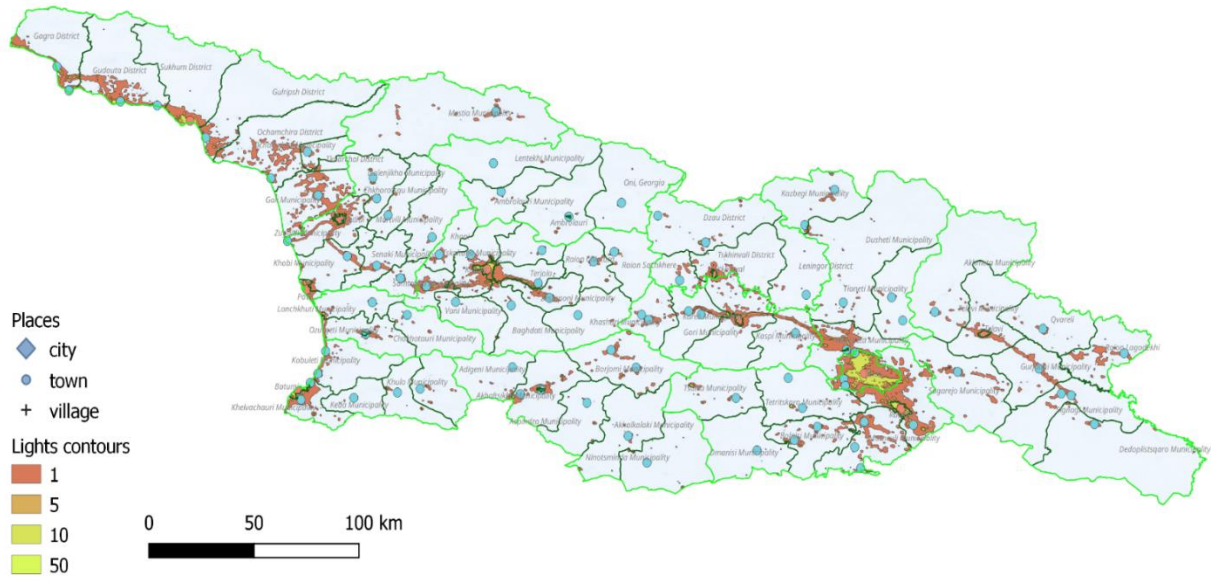


Figure A2. Ranking the municipalities

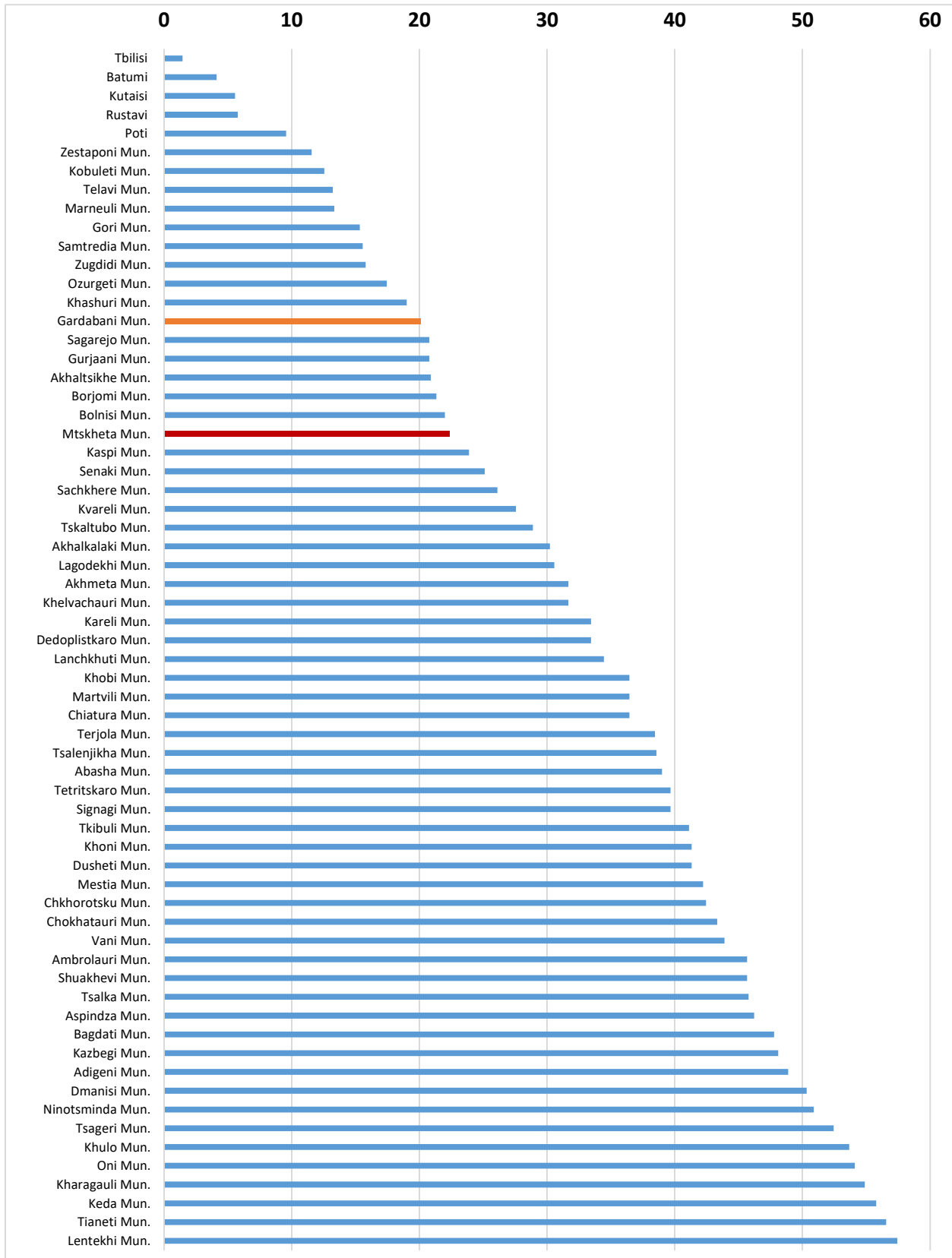


Table A 1. The questionnaire for minibus conductors

City _____

Position _____

Name and Surname _____

TEL: _____

#	The name of incoming bus shuttle lines	The quantity of routes per day	Capacity	Fare	Where do the most passengers get off		The main aim of the route * (Please name it according to the sequence)	
					1	2	1	2
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

The aim of the route*

A – Driving to official/non-official work;

B – The shipment of freight for sale;

C – Move to another city for shopping;

D – Receiving medical services;

E – Educational.

Table A 2. The distribution of cattle among the municipalities

Location	The quantity of cattle	%
Batumi City	2,225	3%
Keda	7,826	11%
Kobuleti	15,385	22%
Shuakhevi	11,936	17%
Khelvachauri	8,923	13%
Khulo	22,236	32%
The Autonomous Republic of Adjara	68,531	100%
Ozurgeti City	430	1%
Lanchkhuti	16,304	34%
Ozurgeti	22,381	46%
Chokhatauri	9,059	19%
Guria	48,174	100%
Kutaisi City	620	0.4%
Baghdati	9,228	5%
Vani	13,018	8%
Zestaponi	18,860	11%
Terjola	21,225	13%
Samtredia	21,932	13%
Sachkhere	15,713	9%
Tkibuli	6,765	4%
Tskhaltubo	23,830	14%
Chiatura	13,754	8%
Kharagauli	10,298	6%
Khoni	12,784	8%
Imereti	168,037	100%
Telavi City	220	0%
Akhmeta	14,081	11%
Gurjaani	6,810	5%
Dedoplistskharo	12,298	10%
Telavi	9,276	7%
Lagodekhi	21,182	17%
Sagarejo	40,094	32%
Sighnaki	9,686	8%
Kvareli	11,747	9%
Kakheti	125,394	100%
Mtskheta City	84	0%
Dusheti	13,684	38%
Tianeti	7,797	21%
Mtskheta	12,304	34%

Kazbegi	2,591	7%
Mtskheta-Mtianeti	36,460	100%
Ambrolauri City	335	2%
Ambrolauri	6,682	32%
Lentekhi	3,676	17%
Oni	3,693	17%
Tsageri	6,729	32%
Racha-Lechkhumi-Lower Svaneti	21,115	100%
Zugdidi City	867	0.5%
Poti City	594	0.3%
Abasha	24,502	13%
Zugdidi	43,657	23%
Martvili	30,898	17%
Mestia	9,038	5%
Senaki	19,060	10%
Chhorotskhu	14,370	8%
Tsalenjikha	13,575	7%
Khobi	29,470	16%
Samegrelo-Upper Svaneti	186,031	100%
Akhaltsikhe City	528	0.4%
Adigeni	21,861	18%
Asindza	13,888	11%
Akhalkalaki	30,797	25%
Akhaltsikhe	16,914	14%
Borjomi	7,828	6%
Ninotsminda	31,083	25%
Samtskhe-Javakheti	122,899	100%
Rustavi City	797	1%
Bolnisi	14,678	11%
Gardabani	30,605	22%
Dmanisi	20,432	15%
Tetritskaro	13,765	10%
Marneuli	30,959	22%
Tsalka	28,038	20%
Kvemo Kartli	139,274	100%
Gori City	156	0%
Gori	24,276	35%
Kaspi	17,936	26%
Kareli	15,317	22%
Khashuri	11,395	16%
Shida Kartli	69,080	100%

Table A 3. Pastures operated by holdings

Functional regions	Municipalities	Pastures operated by holdings (ha)
Tbilisi functional region	Tetritskaro	9,070
Kutaisi functional region	Oni	1,304
	Lentekhi	213
Marneuli functional region	Tsalka	14,755
	Dmanisi	18,088
Akhaltzikhe functional region	Adigeni	2,126
	Aspindza	10,440
	Akhalkalaki	3,119
	Ninotsminda	25,948