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Mapping Emerging and Potential Manufacturing and Agri-Business Clusters in Georgia

EU Innovative Action for Private
Sector Competitiveness in Georgia (EU IPSC)

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LIST OF ABBREVIATIONS

AR	Autonomous Republic
ARDA	Agricultural and Rural Development Agency
CIS	Commonwealth of Independent States
DCFTA	Deep and Comprehensive Free Trade Area
ENPARD	European Neighbourhood Programme for Agriculture and Rural Development
EPI	Economic Prosperity Initiative
EU	European Union
EUR	Euro
FAO	Food and Agriculture Organization
GCCI	Georgian Chamber of Commerce and Industry
GDP	Gross Domestic Product
GEL	Georgian Lari
GHGA	Georgian Hazelnut Growing Association
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Point
Horeca	Hotel/Restaurant/Café
HPP	Hydro Power Plant
HS	Harmonized System
ICT	Information and Communications Technology
IE	Individual Entrepreneur
IOM	International Organization for Migration
IPSC	Innovative Action for Private Sector Competitiveness
ISET	International School of Economics at TSU
ISIC	International Standard Industrial Classification
ISO	International Organization for Standardization
JSC	Joint Stock Company
LEPL	Legal Entity of Public Law
LLC	Limited Liability Company
LTD	Limited Company
LQ	Location Quotient
MSMEs	Micro, Small and Medium Enterprises
NACE	Statistical classification of economic activities in the European Community

n.e.c.	not elsewhere classified
NTFP	Non-Timber Forest Products
PAFAI	Promoting Access to Finance and Agricultural Insurance
PIN	People in Need
PMC	Policy and Management Consulting
RAS	Rural Advisory Service
R&D	Research and Development
SITC	Standard International Trade Classification
SRCA	Scientific Research Center of Agriculture
SSA	Shift Share Analysis
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNJP	United Nations Joint Programme
USD	United States Dollar
USAID	United States Agency for International Development
VAT	Value Added Tax

Executive Summary

This nationwide cluster mapping was conducted under EU Innovative Action for Private Sector Competitiveness in Georgia (EU IPSC), implemented by UNDP, FAO, UNIDO and IOM, and funded by EU. UNIDO's component of the UNJP aims at strengthening capacities of policy-makers and other stakeholders to identify and develop clusters.

As part of this component, UNIDO mapped 53 emerging and potential clusters with a focus on manufacturing and agribusiness in Georgia using the UNIDO cluster definition which defines a cluster as a sectoral and geographical concentration of enterprises and/or individual producers that produce a similar range of goods or services and face similar threats and opportunities. A cluster encompasses enterprises as well as their supporting institutions (public and private), and civil society and academia. The report was prepared according to the UNIDO cluster development approach, which argues that a well-designed and executed cluster selection process is a precondition for a successful initiative.

The report uses two layers of analysis with both qualitative and quantitative information that has been investigated and well-elaborated. These two data sources have a complementary function in this process: quantitative analysis acts as a screening exercise that generates a preliminary, but not an exhaustive, list of existing or potential clusters in the regions. Quantitative information is triangulated and refined by comprehensive qualitative assessment. Throughout the mapping process, a number of in-depth interviews have been conducted with various stakeholders.

To identify industry clusters, the report mostly uses Location Quotient (LQ) analysis, which measures how concentrated a particular industry/cluster is in a region as compared to the nation in terms of employment. After calculation of the LQs, the top 20 sectors with highest LQ above 1.25 in the regions and 1.5 in Tbilisi were selected. The report aims to prioritize manufacturing industries as this the main purpose of the study; however, due to limited number of agglomerations in manufacturing sectors, primary agriculture and mining has also been included. The exact stages for the selection of sectors in the regions are presented below:

- Drop all sectors except agriculture, mining and manufacturing;
- Keep sectors in which the number of companies is higher than one;
- Extract the top 20 sectors by LQs;
- Extract the top 20 sectors by number of companies in the sector;
- Keep the sectors that are covered in both categories: the top 20 sectors by LQ and the top 20 sectors by number of companies.

In Tbilisi, sectors with an LQ higher than 1.5 and ten enterprises have been discussed.

The methodology presents number of limitations, including a large number of enterprises in the main database which did not have an indication of the corresponding industry, employment statistics for LQs are estimated indirectly, and the high number of unregistered companies, especially in the agricultural sector.

Based on this analysis, 53 agglomerations have been identified both through quantitative and qualitative assessment in Tbilisi and nine regions of Georgia (Abkhazia and Tskhinvali region are excluded due lack of statistical data), which have been ranked according to the set criteria, such as export competitiveness (10 per cent), current export value per firm (10 per cent), total number of employment (20 per cent), value added per employee (10 per cent), regional competitiveness of the sector (Shift-Share Analysis) (15 per cent), number of companies (5 per cent), environmental impact of the sector (5 per cent), competitive advantage nationally (5 per cent), investment capacity and willingness (10 per cent), and any existing structure to support functioning of the cluster (10 per cent).

The cluster selection matrix itself is divided into two parts. The first part covers quantitative indicators and common framework is used to attribute scores to the indicators. Since the matrix is used to assess clusters in relative terms, grading of the cluster on a scale of one through seven is also done in relative terms.

Accordingly, the following top ten clusters with highest potential have been identified:

1. Beverages (Wine) (Kakheti)
2. Pharmaceutical (Tbilisi)
3. Poultry (Kvemo-Kartli)
4. Wine (Racha Lechkhumi-Kvemo Svaneti)
5. Furniture (Tbilisi)
6. Beverages (Wine)(Kvemo-Kartli)
7. Jewelry (Tbilisi)
8. Marine fishing (Samegrelo-Zemo Svaneti)
9. Apparel (Tbilisi)
10. Processing and preserving of fruit and vegetables (Samegrelo-Zemo Svaneti)

Introduction

This report has been prepared under the programme EU Innovative Action for Private Sector Competitiveness in Georgia (EU IPSC). This programme is a joint initiative of the European Union and four UN agencies: the United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO), United Nations Industrial Development Organization (UNIDO) and the International Organization for Migration (IOM). The overall objective of the UN Joint Programme (UNJP) is to enhance entrepreneurship and business sophistication by strengthening the capacities of government and local entities to develop and operate clusters and to support companies directly with strategic investments and to better connect with diaspora groups, while also demonstrating the effectiveness of these strategies to businesses.

UNIDO's component of the UNJP aims at strengthening the capacities of policy-makers and other stakeholders to identify and develop clusters. UNIDO works on policy in two main areas.

First, it will work with the Ministry of Economy and Sustainable Development and other relevant public and private support institutions to strengthen their competencies in identifying potential clusters. This includes working with the ministry and other partners to map potentially existing clusters as well as undertaking a detailed diagnostic of the eight identified clusters.

Second, UNIDO will focus on capacity building and advocacy with a range of stakeholders, outside of central government and including businesses, business associations, local government, and universities to help enhance their understanding of the clustering approach and its benefits.

Under the framework of the EU IPSC, UNIDO has conducted a mapping of emerging and potential clusters in Georgia with a focus on manufacturing and agro-business sectors.

This report is divided into three main chapters:

Chapter I explains the methodology of the report and its limitations.

Chapter II examines the economic context of the regions with a focus on the overall macroeconomic profile and the economic structure and discusses major agglomerations identified through quantitative and qualitative analysis. The report excludes Abkhazia and Tskhinvali region/South Ossetia.

Chapter III presents country-level cluster selection matrix and prioritizes clusters according to the pre-determined factors.

This report was finalized by UNIDO Project team: Ms. Ebe Muschiali, Senior Value Chain Expert, Mr. Vedat Kunt, International Cluster Expert, and Mr. Giorgi Todua, National Project Coordinator, with major analytical inputs from ISET Policy Institute, TBSC Consulting and Association of Business Consulting Organizations, under the overall supervision and guidance of Mr. Fabio Russo, UNIDO Senior Industrial Development Officer.

Chapter I: Methodology of the report

This report uses the UNIDO cluster definition in which a cluster is defined as a sectoral and geographical concentration of enterprises and/or individual producers that produce a similar range of goods or services and face similar threats and opportunities. A cluster encompasses enterprises (MSMEs, but also larger firms) as well as their supporting institutions from the public and private sectors as well as civil society. Clusters are not merely agglomeration of firms within the same industry but rather systemic relationships among firms generating synergies. The relationships can be built on common or complementary products, production processes, core technologies, natural resource requirements, skill requirements, and/or distribution channels. Clustering provides firms with better access to suppliers and specialized support services, experienced and skilled labor pools, technology and the inevitable knowledge transfer that occurs where people meet and talk about business.¹

This report has been prepared according to the UNIDO cluster development approach² which argues that a well-designed and executed cluster selection process is a precondition for a successful initiative. The first step on the path to cluster selection is the identification of existing clusters. In countries where clusters are well known, identification may be made easier by the existence of databases. Where this is not the case, fresh information will need to be collected. Selection of clusters is generally necessary to:

- avoid dispersing efforts and to concentrate on the clusters that have the potential to achieve the greatest results in the available time frame;
- focus on the clusters whose growth can contribute most to the achievement of a set development objective;
- be aware of risks as well as benefits related to the selection of one cluster over others.

This report mostly focuses on manufacturing and agri-business sectors, which according to International Standard Industrial Classification (ISIC) of All Economic^{3,4} is limited to and provided in Table I:

Table 1: ISIC Revision 4, Major Economic Subsectors (2-digit ISIC)

Code	Description
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products

¹ Rosenfeld, S.A., 2002. *Creating Smart Systems: A guide to cluster strategies in less favoured regions*. Carrboro, North Carolina: Regional Technology Strategies.

² UNIDO Cluster Development Approach is available <http://www.clustersfordevelopment.org/>

³ United Nations, Department of Economic and Social Affairs, Statistics Division, 2008. *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4*. New York, United States

⁴ United Nations Industrial Development Organization, 2010. *Industrial Statistics: Guidelines and Methodology*. Vienna, Austria.

16	Manufacture of wood and of products of wood and cork, except furniture
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastics products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing
33	Repair and installation of machinery and equipment

This report uses two layers of analysis with both qualitative and quantitative information that has been investigated and well-elaborated. These two data sources have complementary function in this process: quantitative analysis acts as a screening exercise that generates a preliminary, but not exhaustive, list of existing or potential clusters in the regions. Quantitative information is triangulated and refined by comprehensive qualitative assessment. Throughout the mapping process number of in-depth interviews have been conducted with the representatives of the Ministry of Environmental Protection and Agriculture, Ministry of Economy and Sustainable Development and their affiliated agencies (e.g. Enterprise Georgia), Business Support Organizations, development partners and agencies (e.g. GIZ) and members of potential clusters. The data and information collected through qualitative and quantitative analysis has been enriched by the relevant past studies and reports.

This serves two purposes: it helps to elaborate context-specific cluster selection criteria and during a later stage it helps to refine list of clusters which have been flagged by the quantitative exercise.

To identify industry clusters, the study mostly uses Location Quotient (LQ) analysis which measures the relative importance of a specific sector in a given region compared to the whole economy. In other words, LQ show where industry sectors in particular localities are more strongly represented than they are in the country as a whole.

LQ is a ratio of the following employment shares: region industry X's share of total regional employment over national industry X's share of total national employment.

$$LQ = \frac{\text{Local Proportion}}{\text{National Proportion}}$$

$$\text{Local Proportion} = \frac{\text{\# of Employees in Industry X in Region A}}{\text{Total \# Employees in Region A}}$$

$$\text{National Proportion} = \frac{\text{\# of Employees in Industry X in the Country}}{\text{Total \# of Employees in the Country}}$$

LQ provides information on two fundamental economic conditions. First, an LQ greater than one indicates that sector has an export potential and is an important link to the outside economy. If it exceeds 1.25, the corresponding sector can also be defined as an industry cluster. The second condition is an LQ less than one, particularly 0.75 or less. An LQ below 0.75 indicates a low level of specialization. This suggests that the particular sector is not meeting local needs and that there may be a gap in the local economy. However, industries with an LQ below 0.75 suggest that they are underperforming locally and have the potential for import substitution. This report concentrates on the cluster identification of emerging and potential clusters and does not plan to discuss clusters to be created artificially. Therefore, only the first aspect of LQ analysis is considered.

The LQ is usually measured using employment data. As the data of employment by region and industry (NACE 4 digit) is not available for Georgia, two different datasets to develop a reliable proxy are used. First, using the business registry data⁵ the active companies in the specific region and industry were identified. Then, active companies were separated by size, whether the companies are small, medium or large. After that, the average number of employees for each firm size in the given region⁶ was calculated. For example, in the Imereti region the average number of employees in the small-sized firms is 2.1 workers, in medium-sized firms 84.3 and in large-sized firms 847.1. After multiplying the average number of workers by the number of companies in different size categories, the employment statistics by region and by industry which were not available before are derived.

After calculating the LQs, the top 20 sectors with highest LQ above 1.25 in the regions and 1.5 in Tbilisi (and the number of enterprises of ten and more) are selected. This report aims to prioritize manufacturing industries as this the main purpose of the study. However, due to the limited number of agglomerations in the manufacturing sectors, primary agriculture and mining have also been included. The exact stages for the selection of the sectors in the regions are presented below:

- Drop all sectors except agriculture, mining and manufacturing;
- Keep sectors in which the number of companies is higher than one;
- Extract the top 20 sectors by LQs;
- Extract the top 20 sectors by number of companies in the sector;
- Keep the sectors that are covered in both categories: the top 20 sectors by LQ and the top 20 sectors by the number of companies.

⁵ The data is provided by National Statistics Office of Georgia. June 2019.

⁶ The number of firms and employees by region and size of the enterprise is available for 2017.

The analysis of identified emerging and potential clusters are divided into two major parts: 1) agglomerations exclusively identified by quantitative data and 2) agglomerations identified through information collected during the interviews and relevant past studies and reports. All these agglomerations are indicated in the cluster location maps at the end of respective sections (only concentrations with 2 and more companies).

1.1. Limitations

It should be mentioned that the level of available regional economic statistics is not very supportive. Vital statistics such as value-added, output, and employment are not available on four-digit industry codes. The major limitations are presented below:

1. The first limitation of identifying clusters based on the LQ statistics is that it is quite possible to have a high sector concentration in a particular region. However, the number of formal/registered enterprises that are involved in the concentration is very low, while cluster formation requires having a critical number of geographically concentrated enterprises. To circumvent this limitation, the top 20 sectors by number of enterprises and the top 20 sectors by value of LQ produced a joint list of reasonable number of sectors that can be investigated further in the scope of this report.
2. Formal vs. informal sector is particularly important for agri-businesses, as much of the agricultural activity in Georgia is unregistered; therefore, there is a probability that some potential clusters involving unregistered farmers are missed.
3. Employment statistics that were used for LQ analysis purposes were estimated indirectly, using the composition of small, medium and large enterprises in each industry and applying the average region-wide employment indicators for each of them. These averages are rough estimations due to the definition of the enterprise's size, which implies using turnover as a second indicator for categorization (e.g. a company might have a small number of employees but a large turnover and still be categorized as large by only turnover). Therefore, in some instances the statistics might be misleading.
4. LQ is a static indicator that captures large industries in one particular moment. It is not capable capturing small but dynamically growing networks. Other regional analysis techniques such as Shift Share Analysis are more capable of capturing the dynamics of business networks or clusters, including smaller ones. This analysis technique was not used due to the absence of past data. However, it was still applied for the shortlisted agglomerations in the final selection matrix.
5. A large number of enterprises in the main database did not have an indication of the corresponding industry and it was impossible to map them to any sector. For the economic statistics where region-wide data was not available at Division Level, this data was collected and summarized at one level up (i.e. at the Section Level). This is a general problem related to the business registry. While registering in the business registry, companies indicate multiple industries and there is no practical mechanism to control to which industry these companies actually belong.

Overall, these deficiencies in the data and methodology were largely compensated for by interviews with key informants and information collected from reports and studies.

Chapter II: Overview of identified emerging and potential clusters in Tbilisi and the regions

2.1 Overview of Tbilisi and its clusters

2.1.1 Overview of Tbilisi and its economy

Tbilisi is the capital and the largest city in Georgia, covering 504.2 square kilometers. It consists of ten administrative districts and is the most populated city with a population of 1.17 million. Tbilisi is the economic center of Georgia, and it accounts for 43 per cent of Georgia's GDP. It is a business and economic hub not only for Georgia but also has an important economic role in the South Caucasus region due to its central location and business sector development. The main economic indicators of Tbilisi relative to Georgian economy provide a better picture of the size and the importance of the city (Table 2).

Table 2: Population and main economic indicators

INDICATOR	DATA	SHARE IN THE COUNTRY'S ECONOMY
POPULATION	1 171 100	
ACTIVE REGISTERED COMPANIES 2019	55 094	47%
GDP 2017	16 203 mln GEL	43%
VALUE ADDED	12 731.2 mln GEL	67%
PRODUCTION	4 124.6 mln GEL	38%

Source: GeoStat.

Tbilisi has a lower percentage of economically active population than the national average and at the same time, the unemployment rate is higher than the average Georgian (Table 3).

Table 3: Employment data

INDICATOR	TBILISI	GEORGIA
UNEMPLOYMENT RATE	18.8 %	12.7 %
ECONOMIC ACTIVITY RATE	54 %	63.9 %
EMPLOYMENT RATE	43.9 %	55.8 %

Source: GeoStat.

It is notable that Tbilisi has about an 8 per cent higher rate of productivity (value added/number of Employed) than the national average, and this gap has been reducing consistently over the past ten years (Table 4).

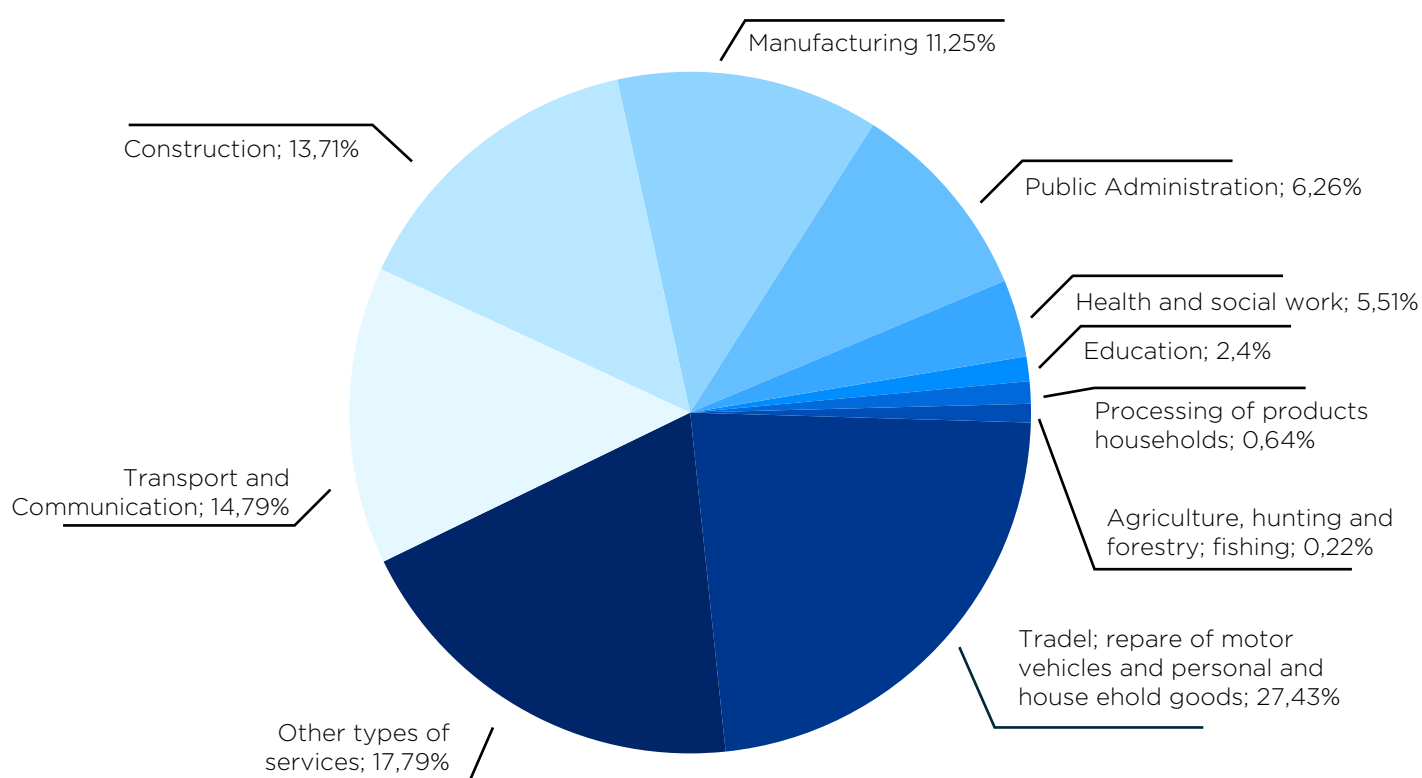
Table 4: Productivity (Value Added mln GEL per employed)

PRODUCTIVITY	2006	2012	2017
National average	0,010	0,021	0.027
Tbilisi	0,012	0,024	0.029
Difference	28%	15%	8 %

Source: GeoStat.

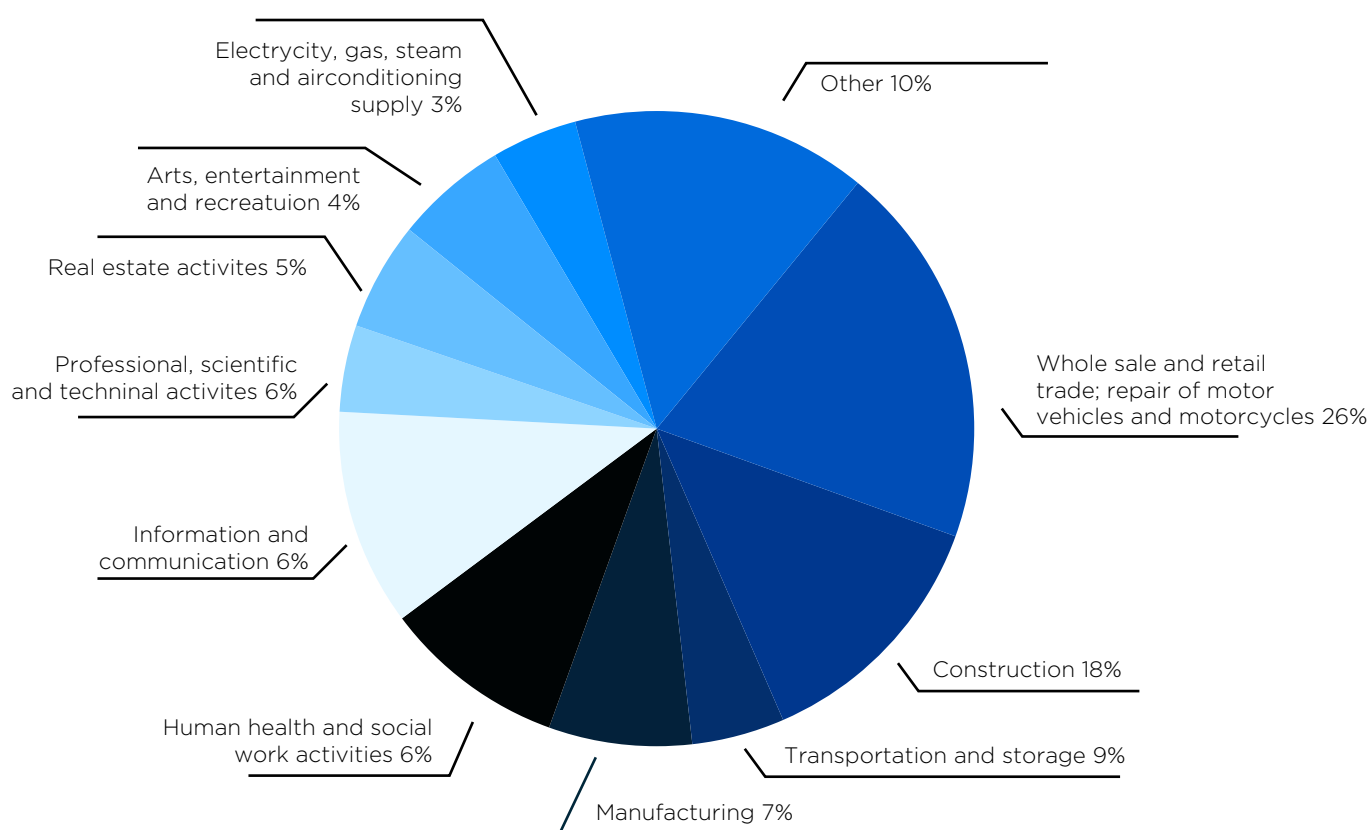
The economy of Tbilisi has had a growing trend over the last few years, which was reflected in a growing GDP. According to the latest statistics (2017), the major sector contributing to GDP is trade (27 per cent), followed by transport and communication (15 per cent) and construction (14 per cent). Wholesale and retail trade (26 per cent) is the biggest contributor to Tbilisi's value added and this sector is also the main employer in Tbilisi. Construction, transportation and manufacturing also participate meaningfully in creating value added (Figure 1, Figure 2).

Figure 1: Regional GDP by economic activities in Tbilisi, 2017



Source: GeoStat.

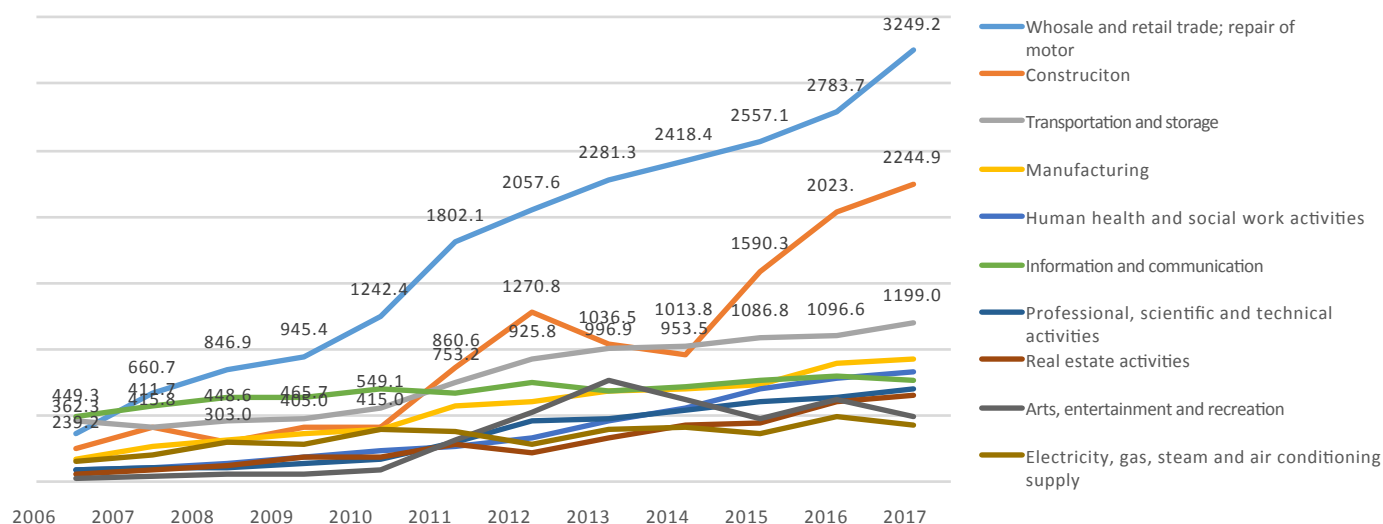
Figure 2: Value Added by economic activities in Tbilisi, 2017



Source: GeoStat.

The growth of the value added of the main sectors of economy was quite impressive during the last few years. The key sectors in Tbilisi, such as trade and construction, showed significant growth, indicating increasing urbanization and consolidation of economic activity in Tbilisi, which strengthens Tbilisi's role as a hub for economic activity in Georgia (Figure 3).

Figure 3: Value Added in Tbilisi by economic activities, 2006-2017 (mln GEL)



Source: GeoStat.

Value added in trade has increased from about 0.5 bln GEL in 2006 to 3.2 bln GEL in 2017. Construction sector value added increased from about 0.2 bln GEL to 2.3 bln GEL in 2017 in the same period.

More recent dynamics reveals which sectors have higher momentum. Table 5 below ranks the sectors according to their growth in key economic indicators such as value added, output, employment and investment in fixed assets, during the period from 2012 through 2017, as percentage of growth compared to the base period (2012).

Table 5: Key Economic Indicators of Tbilisi by economic activities between 2012-2017

Sectors	Value Added	Output	Employment	Investment
Agriculture, forestry and fishing	-32%	-28%	55%	-79%
Mining and Quarrying	-48%	-18%	-52%	-75%
Manufacturing	52%	62%	12%	101%
Electricity, gas, steam and air conditioning supply	56%	49%	8%	116%
Water supply; Sewerage, Waste Management and Remediation Activities	51%	47%	40%	-41%
Construction	77%	54%	14%	31%
Wholesale and retail trade; repair of motor vehicles and motorcycles	58%	61%	54%	191%
Transportation and storage	30%	44%	16%	154%
Accommodation and food service activities	101%	96%	37%	69%
Information and communication	2%	18%	-1%	53%
Real estate activities	198%	187%	21%	217%
Professional, scientific and technical activities	53%	65%	7%	-25%
Administrative and support service activities	120%	136%	64%	-27%
Education	116%	123%	42%	-27%
Human health and social work activities	145%	132%	40%	45%
Arts, entertainment and recreation	-8%	-20%	42%	-44%
Other service activities	73%	80%	39%	10%

Source: GeoStat.

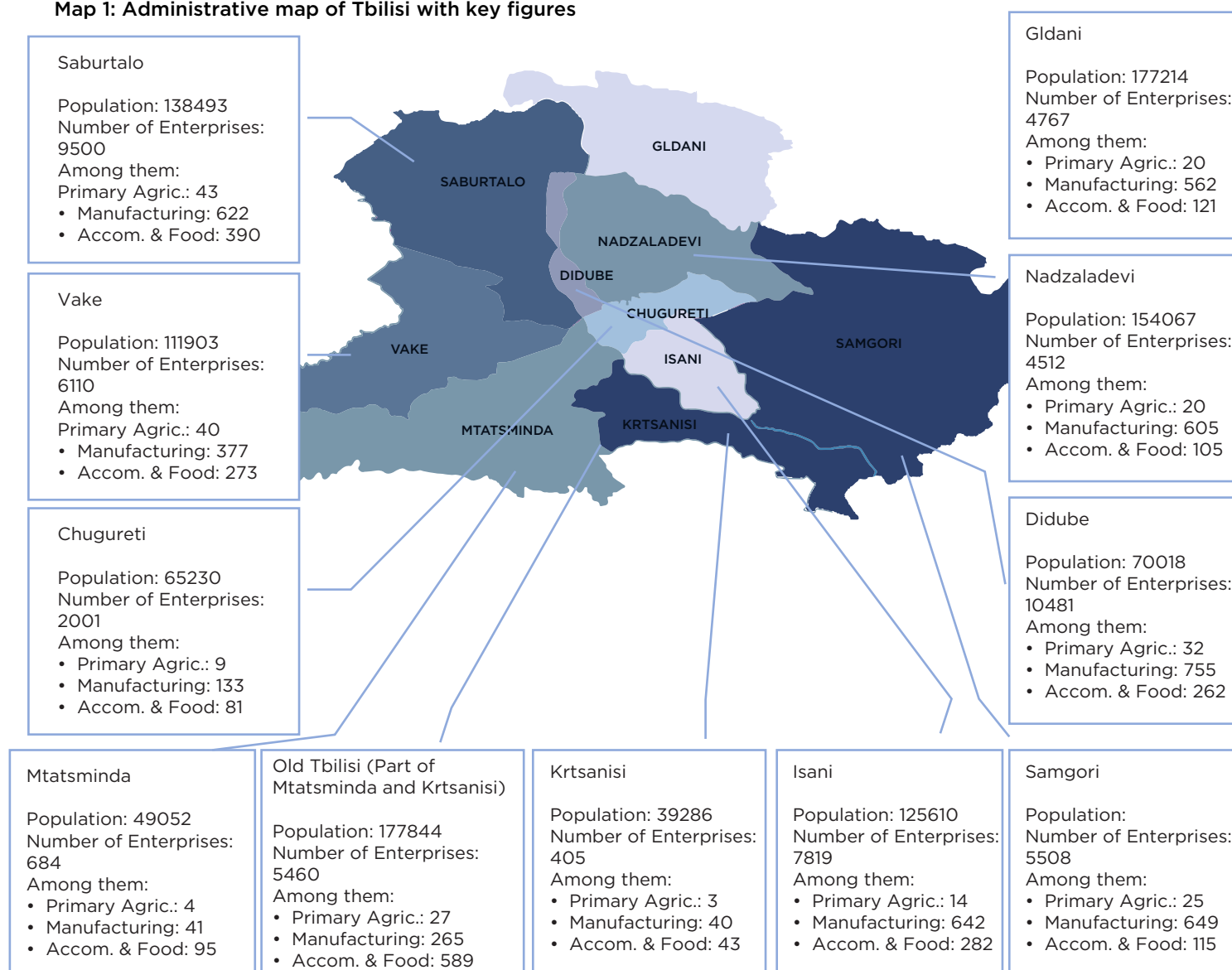
As is demonstrated in the table above, in the past five years the industries which gained momentum in terms of value added (mostly in red color) were: real estate (about 198 per cent growth, tripling the size of value added), human health and social work (the medical sector), (about 145 per cent growth of value added), administrative support services (120 per cent), education (116 per cent) and accommodation and food service activities (101 per cent). Almost the same pattern is detectable in terms of output.

In terms of employment figures, the leading sectors are: administrative support services (with 64 per cent growth), the trade sector (54 per cent) and agriculture (55 per cent). Other sectors such as education, medical and arts come next with about 40 per cent growth in the same period. The most dynamic sectors in terms of investments in fixed assets are: real estate (217 per cent growth), trade (191 per cent), transport and storage (154 per cent), electricity and gas (116 per cent) and manufacturing (101 per cent).

2.1.2 Territorial division and enterprise concentration

Tbilisi is divided into ten administrative districts, covering 33 sub-districts. It should be noted that GeoStat provides the enterprise statistics for Old Tbilisi, which is not a separate administrative district but parts of two districts combined.

Map 1: Administrative map of Tbilisi with key figures

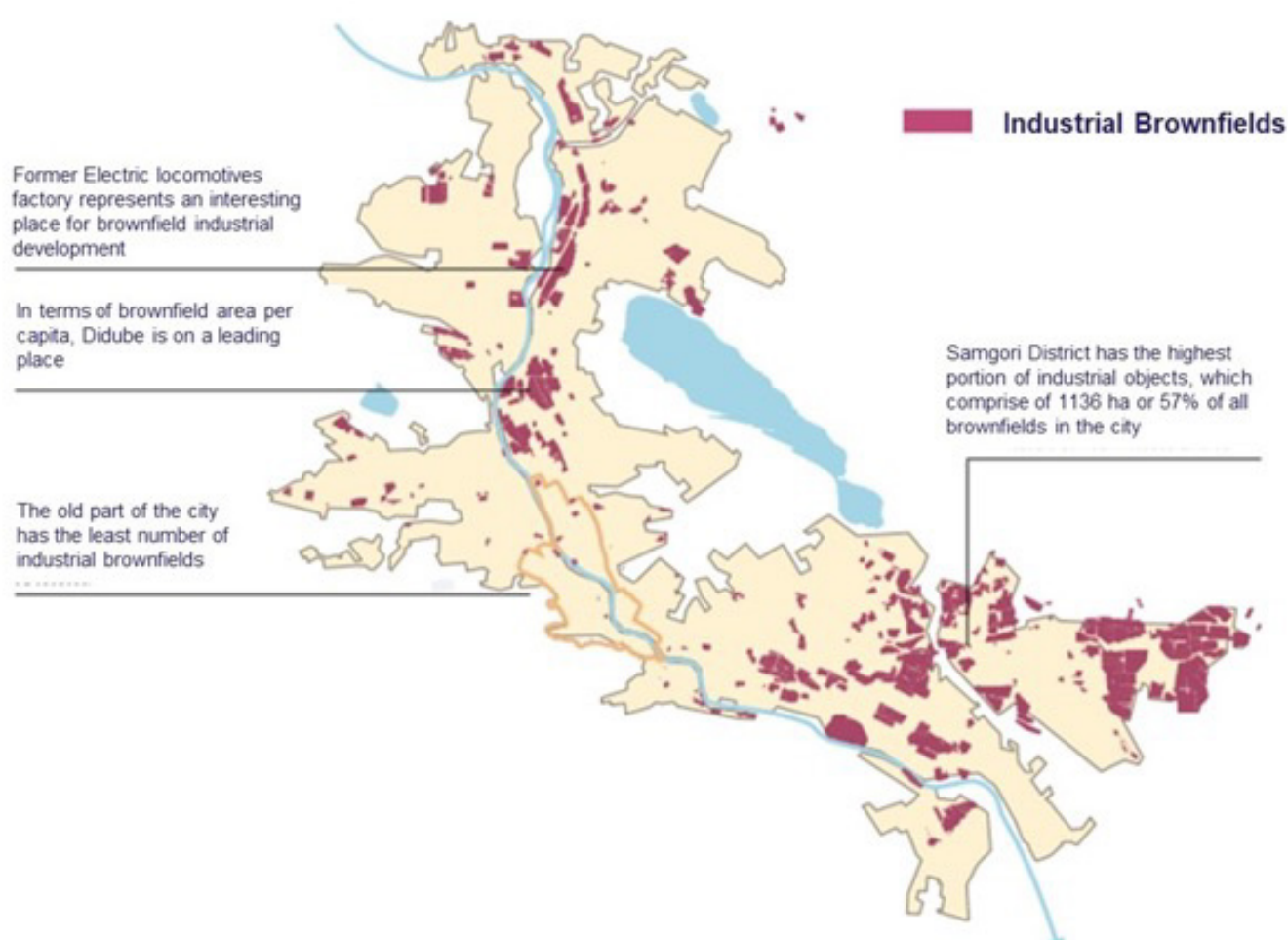


Source: GeoStat.

One of the characteristics of Tbilisi is that it has no clear division between the industrial, business and residential districts. It is also difficult to assign each of these districts any specific profile which is universally unique; the functions are somehow mixed and mingled with each other. Having this in mind, it is more meaningful to view clusters of Tbilisi holistically as one geographic unit rather than by districts or geography.

Industrial development during the Soviet times, which was mostly driven by proximity and accessibility to the central railway lines, also brought about the state where the industrial brownfields are scattered all around the city. However, some concentrations are still detectable: The Samgori district has highest concentrations of the industrial brownfields, containing 57 per cent of the space of overall brownfields in the city. Didube district has highest space of brownfields per capita, compared to other parts of the city. The map below illustrates the estimation of brownfield concentrations in Tbilisi (Map 2).

Map 2: Industrial brownfields in Tbilisi



Source: City Institute

In terms of the enterprise concentration, the Didube has the highest number of active enterprises (10,481) among all administrative districts, followed by Saburtalo (9,500) and Isani (7,819).

2.1.3 Past relevant studies

As Tbilisi is the economic center of Georgia, all or most of the sectors which were analyzed in the past through various studies are concentrated here. Table 6 shows, clusters or value chains which were analyzed by various donor projects in Georgia in the past.

Table 6: Key Economic Indicators of Tbilisi by economic activities between 2012-2017

EXISTING VALUE CHAINS/CLUSTERS IN TBILISI	SOURCE
• Furniture	• GIZ, 2016
• Postproduction (PP), Film Sector	• GIZ, 2016
• Textile and Apparel	• GIZ, 2016 and EPI, 2011
• ICT	• GIZ, 2016 and EPI, 2011
• Construction Materials	• EPI, 2011
• Tourism	• EPI, 2011 and World Bank, 2017

Source: UNIDO.

Considering opportunities for growth and, therefore, their attractiveness for investors, Tbilisi City Hall has strategically selected five industries which are identified as having the biggest potential for Tbilisi: hospitality, retail and entertainment, creative, healthcare, and pharmaceuticals. In addition, according to the Sectoral Research of Investment Potential of Tbilisi, the fastest growing sectors over past several years have been entertainment and recreation (38.9 per cent), real estate (23.3 per cent), energy (17.2 per cent), hospitality and food (13.7 per cent) and construction (8.2 per cent).

Table 7: Sectors with investment potential in Tbilisi

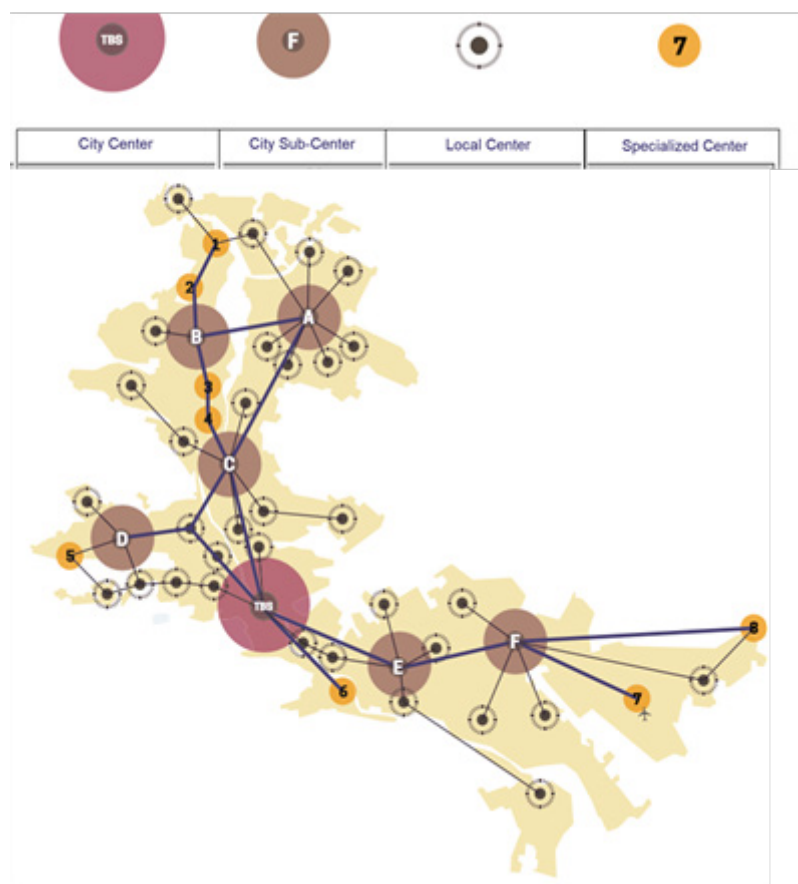
STRATEGIC INDUSTRIES FOR TBILISI	FASTEST GROWING SECTORS IN TBILISI
• Hospitality	• Entertainment and Recreation
• Retail and Entertainment	• Real Estate
• Creative Industry	• Energy
• Healthcare	• Hospitality and Food
• Pharmaceuticals	• Construction

Source: Sectoral Research of Investment Potential of Tbilisi.

While discussing clusters in Tbilisi (which has a geographic dimension to it), it is important to consider the approach of the Tbilisi General Land Use Masterplan, which was prepared by the City Institute and adopted recently by Tbilisi city. The land-use masterplan is essential because it may redefine the existing patterns of the clusters in Tbilisi and facilitate emergence of new clusters in the city and its vicinity.

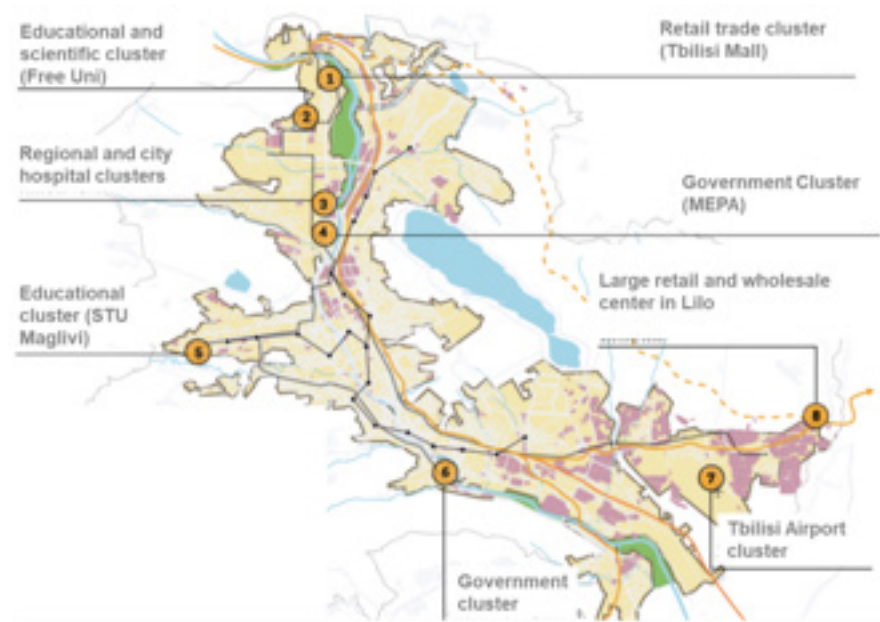
According to the general land use masterplan, at present, the existing centers and concentrations in the city were established without any logic and control in the past, which does not create a single integrated system. Future development is proposed according to the three-tier development model comprised of the city center, city sub-centers and neighborhood-district centers and specialized centers or clusters which define large-scale economic/manufacturing/trade concentrations with corresponding functional and density parameters. This ensures its involvement in the city's system and makes it possible to manage them efficiently through the use zonal approach. The masterplan designated eight such specialized centers or clusters. Of them, only few are economic or manufacturing-oriented clusters (Map 3, Map 4). In reality, according to the UNIDO definition, these cannot be considered as clusters and are more concentrations of various businesses.

Map 3: Conceptual Map of Tbilisi's Three-Tier Zoning



Source: Tbilisi Land Use Masterplan, Urban Institute.

Map 4: Specialized Centers (Clusters) in Tbilisi



Source: Tbilisi Land Use Masterplan, Urban Institute.

According to the land-use masterplan, the only clear industrial cluster in the territory of Tbilisi is in the Samgori district, which hosts most of the industrial sites of the city. Such a specialized center which has an industrial function usually hosts manufacturing as well as their supplementary inputs, warehouses and logistical entities. This cluster was established during the Soviet times and was mostly driven by its proximity to the main transport links such as the railway and the airport. It is also noted that today, according to the document, demand for industrial sites is about half of the supply in Tbilisi and these sites can be reused.

Besides the industrial cluster, the document also identifies in Tbilisi several other interesting clusters:

- Retail trade cluster (Tbilisi Mall)
- Educational and scientific cluster in the Didi Digomi area
- Regional and city hospital clusters in Digomi
- Large retail and wholesale center in Lilo
- Governmental clusters in Krtsanisi
- Tbilisi airport cluster

An important observation is that Tbilisi is not a large city and it is not critical for an enterprise to be located in any of its districts. It is notable that these specialized centers usually are of national importance; they are not driven by the proximity to the existing population in the city but rather by the unique territorial and technical characteristics of the sites (e.g., next to the railway stations or logistical centers and so forth).

As land prices in the center go up, it is naturally expected that the most of the industrial enterprises will relocate their industrial facilities away from the centers towards the suburbs or outside the city, which is already happening (e.g., Coca-Cola's recent relocation of its new facility to Natakhtari).

2.1.4 Tbilisi statistical analysis

According to the methodology discussed in Chapter I, all of the sectors were analyzed and the top 20 sectors with highest LQ's are presented in Table 8, listed by number of registered enterprises.

Table 8: Top 20 Sectors by number of enterprises in Tbilisi (LQ more than 1,5)

NACE Code	Sectors	Employment	LQ	N of Enterprises
47.82	Retail sale via stalls and markets of textiles, clothing and footwear	1744,26	1,62	623
69.20	Accounting, bookkeeping and auditing activities; tax consultancy	5210,87	1,54	557
82.99	Other business support service activities n.e.c.	2422,54	1,64	306
86.90	Other human health activities	5740,97	1,55	293
70.22	Business and other management consultancy activities	3236,90	1,66	283
46.45	Wholesale of perfume and cosmetics	2216,14	1,58	182
18.12	Other printing	1270,85	1,59	180
46.69	Wholesale of other machinery and equipment	1012,46	1,61	170
56.21	Computer consultancy activities	1887,94	1,67	147
56.21	Event catering activities	1954,40	1,58	140
86.22	Specialist medical practice activities	2779,09	1,55	136
58.11	Book publishing	601,68	1,52	128
46.51	Wholesale of computers, computer peripheral equipment and software	1614,36	1,64	121

77.39	Rental and leasing of other machinery, equipment and tangible goods n.e.c.	1597,47	1,55	98
73.20	Market research and public opinion polling	1266,76	1,59	96
47.61	Retail sale of books in specialised stores	874,13	1,55	76
64.99	Other financial service activities, except insurance and pension funding n.e.c.	1024,98	1,64	75
61.20	Wireless telecommunications activities	1677,52	1,51	70
82.30	Organisation of conventions and trade shows	263,91	1,57	67
46.52	Wholesale of electronic and telecommunications equipment and parts	1584,93	1,64	66

Source: UNIDO.

In addition to manufacturing, Table 8 also identifies non-manufacturing sectors, such as retail trade, accounting and bookkeeping and similar business support services, which were excluded from consideration. This resulted in 13 manufacturing sub-groups (with LQs higher than 1.5 and the number of enterprises of ten and more) (Table 9).

Table 9: Manufacturing shortlisted sectors by number of enterprises in Tbilisi (LQ more Than 1,5)

NACE Code	Sectors	Employment	LQ	N of Enterprises
18.12	Other printing	1270,85	1,59	180
21.20	Manufacture of pharmaceutical preparations	1812,61	1,61	65
14.12	Manufacture of workwear	1086,38	1,53	42
32.12	Manufacture of jewellery and related articles	190,32	1,50	39
17.22	Manufacture of household and sanitary goods of toilet requisites	377,10	1,58	25
17.21	Manufacture of corrugated paper and paperboard and og containers of paper and paperboard	299,29	1,66	23
32.40	Manufacture of games and toys	61,43	1,58	22
17.29	Manufacture of other articles of paper and paperboard	286,31	1,67	20
32.13	Manufacture of imitation jewellery and related articles	132,67	1,63	20
20.30	Manufacture of paints; varnishes and similar coating, printing ink and mastics	115,92	1,56	14
28.25	Manufacture of non - domestic cooling and ventilation equipment	113,12	1,64	13
27.90	Manufacture of other electrical equipment	30,72	1,57	11
21.10	Manufacture of basic pharmaceutical products	27,92	1,56	10

Source: UNIDO.

Pharmaceuticals, apparel (including work wear), paper products, jewelry, chemical production (including paints and varnishes), toys, cooling/ventilation equipment and printing are among top performer manufacturing sectors based on the regional statistical analysis, using the LQs of the estimated number of employments. After combining this statistical analysis with the information learned during interviews and collected from available reports and studies, the following sectors with enterprise networks and cluster potential were revealed: 1) pharmaceutical production, 2) apparel, 3) paper products, 4) jewelry and 5) toys.

2.1.5 Analysis of potential clusters

Pharmaceutical Production (Division 21). The sector is represented with producers of generics, antibiotics and other relatively simple pharmaceutical products, on the one hand represented by such large-scale companies as GMP, Aversi Rationale (the largest two players, producing almost 90 per cent of local production), AbiPharm and BioFarm. On the other hand, there are herbal products producers such as NeoFarm, Innova and Farconi. Finally, there are companies working in a new direction, phages, which are emerging as alternatives to antibiotics (for both humans as well as for animals), represented by several enterprises under the three companies: BioChimPharm (BCP), Biopharm-L and the Eliava Institute.

Originally discovered in France, phages are a Soviet phenomenon with research starting in Georgia back in 1930. This is a new and important subject for the pharmaceutical industry and more and more global pharmaceutical companies are interested in phages. Recently, the world leader company Ferring, Intralytix (a US biotechnology company) and the Eliava Institute concluded an agreement on a joint R&D and new product development project.⁷ Georgia has unique know-how in phages production and a solid research and scientific base.

The industry is comprised of two sub-groups, of which the majority or about 87 per cent is the production of pharmaceutical preparations.

Table 10: Industry composition

Pharmaceutical		
	Number of Enterprises in Tbilisi	Share in the sector
21.20 Manufacture of pharmaceutical preparations	65	86,7%
21.10 Manufacture of basic pharmaceutical products	10	13,3%

Source: GeoStat.

Table 11: Distribution of number of manufacturers of pharmaceutical products in Tbilisi by size

Pharmaceutical								
sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Pharmaceuticals	75	2	4	69	2,67%	5,33%	92%	1841

Source: GeoStat; UNIDO.

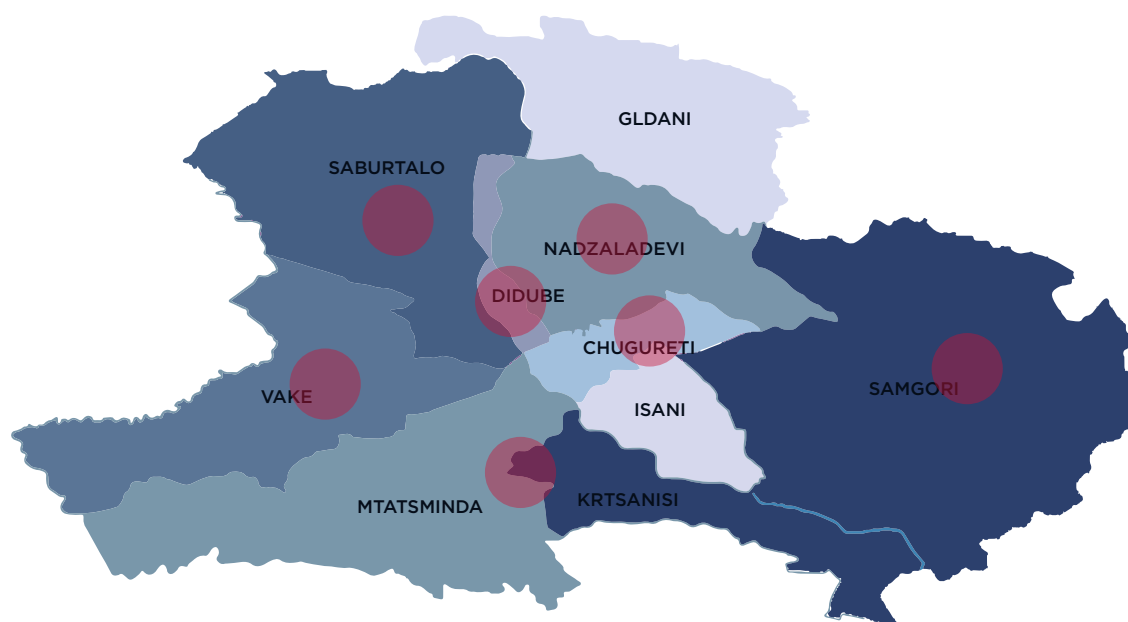
Table 12: Distribution of number of manufacturers of pharmaceutical products by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	5	Nadzaladevi	11
Didube	3	Saburtalo	32
Gldani		Samgori	9
Isani	1	Vake	4
Krtsanisi		Old Tbilisi	10
Mtatsminda			
Total			75

Source: GeoStat.

⁷ PR Newswire, Intralytix, the Eliava Foundation and Ferring Pharmaceuticals Sign Joint Collaboration Agreement for Reproductive Medicine and Women's Health Initiatives <https://prn.to/2Xlveaz>, June 2019

Map 5: Distribution of number of manufacturers of pharmaceutical products by districts



Source: UNIDO.

Some of the products are already being exported. Georgian pharmaceutical companies often take part in international exhibitions and are working towards increasing exports to neighbor countries, especially to the CIS region, Asia and the Middle East.⁸

The companies are organized under the Association of Pharmacists, which unites major companies as well as up to 2,000 individual members. The challenge that the industry faces is the pending mandatory GMP standardization by 2022, which represents a significant difficulty for most of the producers. The association members meet monthly to discuss this and other major industry issues.

Apparel (Division 14). Statistical analysis identified workwear as a sub-group with high cluster potential. However, due to the interest in the apparel (and textile) sector generally from donors and the government of Georgia, not only workwear, but a broader sector of apparel was analyzed.

The rapid emergence of large-scale apparel manufacturing was driven by cheap labor and energy costs, the qualifications and skills of workers and management in the industry, the favorable business environment and the logistics and transport network.⁹ The industry is comprised of eight sub-groups, of which the biggest identified group is Workwear (11.3 per cent) employing about 1,086 persons, followed by various outerwear and accessories producers.

A study by GIZ concluded that currently Georgia's apparel industry is at the CMT (Cut, Make, Trim) stage, with two of the major buyers practicing OPT (Outward-Processing Trade), which means doing some operations outside and then reimporting the final garments). However, it is possible to stimulate further development of the industry into the upper stages such as ODM (Original Design Manufacturing) and OBM (Original Brand Manufacturing).

⁸ Opportunities in Georgia's Pharmaceutical Sector, Invest in Georgia, 2012.

⁹ Textile and Apparel in Georgia - An Industry Study, GIZ, 2016

Table 13: Industry composition

Apparel		
	Number of Enterprises in Tbilisi	Apparel
14.13 Manufacture of other outerwear	248	66,7%
14.19 Manufacture of other wearing apparel and accessories	64	17,2%
14.12 Manufacture of workwear	42	11,3%
14.11 Manufacture of leather clothes	4	1,1%
14.39 Manufacture of other knitted and crocheted apparel	4	1,1%
14.20 Manufacture of articles of fur	4	1,1%
14.14 Manufacture of underwear	5	1,3%
14.31 Manufacture of knitted and crocheted hosiery	1	0,3%

Source: GeoStat.

Table 14: Distribution of number of manufacturers of apparel in Tbilisi by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Apparel	372	3	5	362	0,81%	1,34%	97%	3417

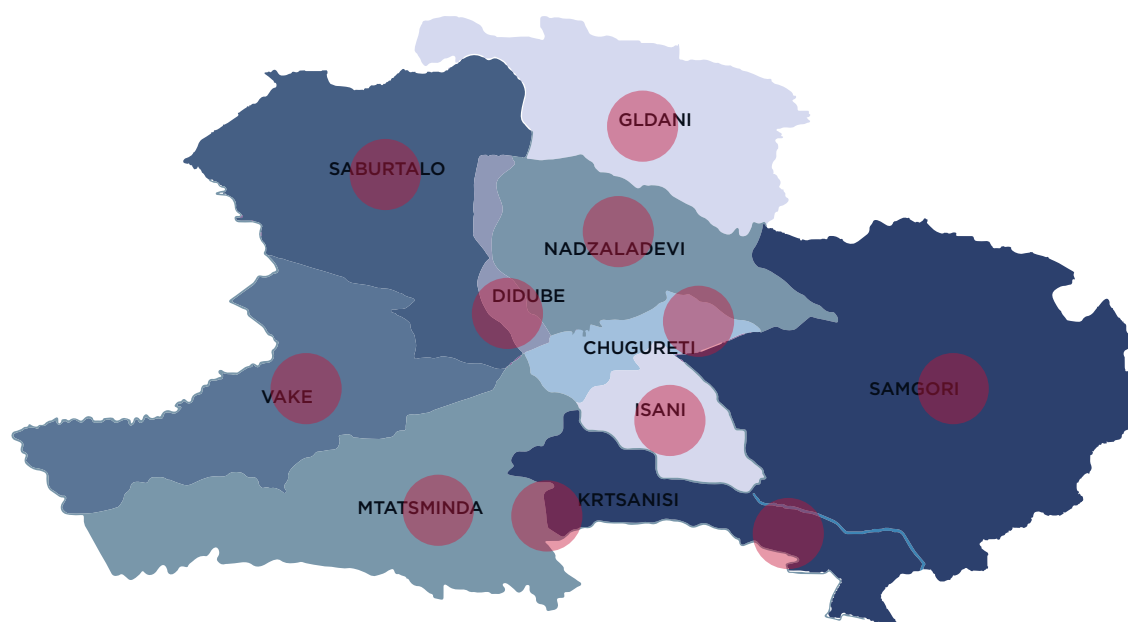
Source: GeoStat; UNIDO.

Table 15: Distribution of number of manufacturers of apparel by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	31	Nadzaladevi	36
Didube	33	Old Tbilisi	50
Gldani	17	Saburtalo	83
Isani	52	Samgori	38
Krtsanisi	2	Vake	26
Mtatsminda	4	Unknown	
Total			372

Source: GeoStat.

Map 6: Distribution of number of manufacturers of apparel by districts



Source: UNIDO.

The study identified three major areas with cluster potential: Batumi, Kutaisi and Tbilisi. According to the GIZ study, the Tbilisi cluster was the smallest of the three, based on the employed people (up to 570 people in 2016) and about 13 middle-sized and large companies. However, in total, the number of enterprises producing apparel in Tbilisi was about 372, of which the absolute majority are small companies employing five to ten people.

Although the GIZ study concluded that development of textile production (in contrast with apparel) is not economically viable, another study concluded that due to the recent China-Georgia Free Trade Agreement, it is economically very interesting for Chinese companies, who recently lost a huge market share in the EU due to the graduation from the preferential regime, to shift their operations from China to Georgia. The rules of origin allow them to import some of the required inputs, add value to it in Georgia and then export to the EU within the DCFTA regime as Georgian products. Considering Georgia's supply of sheep wool as well as traditions from Soviet times about production (which is on a revival phase, evidenced by anecdotal cases in Kakheti where a few families have started to raise silkworms), this sector requires further investigation. It should also be mentioned that Georgian fashion designers have achieved considerable success in the fashion industry, and are exporting their fashions to the EU, which can be a valuable value chain added to the cluster.

There is no professional association of the apparel manufacturers in Georgia yet.

Paper Products (Division 17). The industry is comprised of seven sub-groups, of which the biggest sub-group is the manufacturing of household sanitary and toilet goods (30 per cent), followed by Corrugated paper and paperboard (27 per cent), which employ about 960 people in total. (Table 16, Table 17)

Table 16: Industry composition

Paper		
	Number of Enterprises in Tbilisi	Share in the Sector
17.22 Manufacture of household and sanitary goods and of toilet requisites	25	29,8%
17.21 Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	23	27,4%
17.29 Manufacture of other articles of paper and paperboard	20	23,8%
17.23 Manufacture of paper stationery	7	8,3%
17.12 Manufacture of paper and paperboard	4	4,8%
17.24 Manufacture of wallpaper	3	3,6%
17.11 Manufacture of pulp	2	2,4%

Source: GeoStat.

Table 17: Distribution of number of manufacturers of paper products in Tbilisi by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Paper	84	0	10	72	0%	11,90%	86%	1012

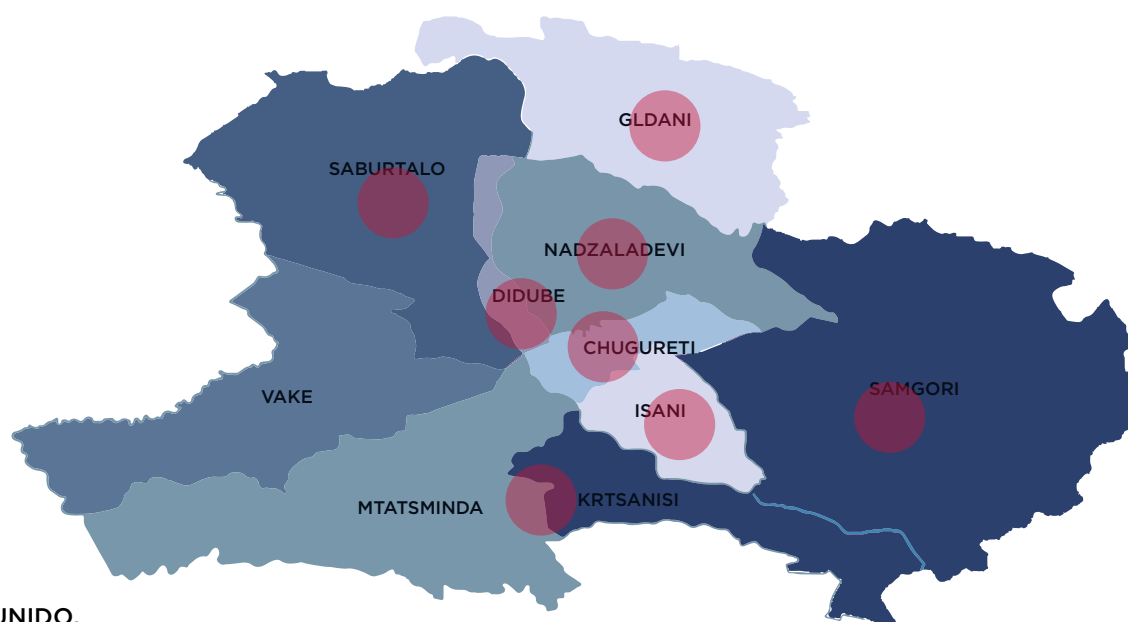
Source: GeoStat; UNIDO.

Table 18: Distribution of number of manufacturers of paper products by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	4	Nadzaladevi	5
Didube	6	Saburtalo	25
Gldani	2	Samgori	20
Isani	8	Vake	1
Krtsanisi	1	Old Tbilisi	11
Mtatsminda		Unknown	1
Total			84

Source: GeoStat.

Map 7: Distribution of number of manufacturers of paper products in Tbilisi by districts



Source: UNIDO.

The production of paper household goods and especially toilet requisites is a relatively large market in Georgia. Manufacturing of such products is locally oriented and a good substitution for imported products, given their affordable prices and competitiveness. The main inputs for sanitary goods and toilet requisites production are imported and then processed or simply cut locally. The largest producers of household paper goods in Tbilisi are Georgian Paper Production Ltd, Simetra Ltd and Krialia Ltd.

The manufacturing of corrugated paperboards and containers is another sub-group with 23 registered companies. Demand for such products as packaging has been increasing in the world market and in Georgia as well due to the increasing interest in environmental protection and substitutes for plastic as well as the development of the local food and beverage industry. These paper packages are used in the transportation of agricultural products, wine and beverages, and so on. The largest producers in this sub-group are Georgian Cardboard Ltd and Kakheti Ltd. Manufacturers of this sector are united under the working group of Packaging Materials Producers, which was established by the Georgian Chamber of Commerce and Industry (and which also includes the producers of other packaging, e.g. plastic package manufacturers).

The main problem for the paper sector is a lack of local supply of key inputs and reliance on imported paper inputs. The local supply coming from secondary paper processing is not sufficient. Therefore, both sectors are locally oriented and have the potential to become substitutes for imported paper goods.

Jewelry (32.12; 32.13). Georgia has long history of jewelry manufacturing, dating back to 1939 when the Tbilisi Jewelry Factory was opened. Today this is a growing sector with many small jewelry designers and stores established in Tbilisi. Georgia has suitable resources (e.g. gold mining) available locally. The total estimated employment in the sector is about 320 people.

Table 19: Industry composition

Jewelry		
	Number of Enterprises in Tbilisi	Share in the sector
32.12 Manufacture of jewellery and related articles	39	66,1%
32.13 Manufacture of imitation jewellery and related articles	20	33,9%

Source: GeoStat.

Table 20: Distribution of number of manufacturers of jewelry in by size

sector	Total N of enterprises	Size (Values)			Size (share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
jewelry	59	0	2	56	0%	3,39%	95%	323

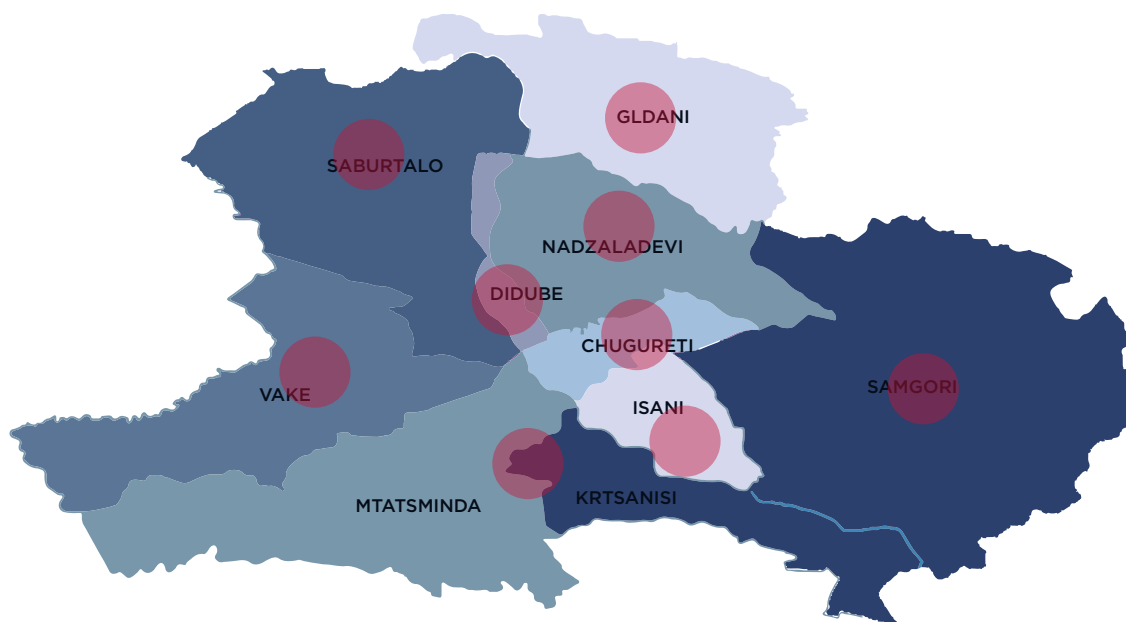
Source: GeoStat; UNIDO.

Table 21: Distribution of number of manufacturers of jewelry by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	3	Nadzaladevi	11
Didube	14	Saburtalo	11
Gldani	6	Samgori	3
Isani	2	Vake	3
Krtsanisi		Old Tbilisi	5
Mtatsminda	0	Unknown	1
Total			59

Source: GeoStat.

Map 8: Distribution of number of manufacturers of jewelry by districts



Source: UNIDO.

International interest in Georgian jewelry production is also increasing with more and more local companies participating in international exhibitions and with international jewelry brands entering Georgia. The biggest focus is on hand-made jewelry made with precious stones and silver. Social networks and online shopping play a key part in drawing the attention of international buyers and developing markets. Today some producers export jewelry to neighboring countries and to the EU and Asia.

The Produce in Georgia program also helps local jewelry manufacturers by providing various exhibition points at touristic areas. Furthermore, due to the recent China-Georgia Free Trade Agreement, there is an opportunity to shift operations from China to Georgia.

There is no industry or cluster association in this sector; but there is interest to have one and increase their export potential through networking and knowledge sharing. The biggest manufacturers on this market is Zarapxana Ltd (established on the bases of Tbilisi Jewelry Factory) and Ninea Ltd.

Toys (32.40). The second-largest sub-group, toy manufacturing, is a growing industry with recognized development potential. Demand for Georgian toys has been increasing in recent years and according to toy manufacturers, sales have increased by 15 to 20 per cent in 2017.

All toy producers are small scale enterprises and the total estimated employment of the sector is about 60

Table 22: Distribution of number of manufacturers of toys in Tbilisi by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Toys	22	0	0	22	0%	0%	100%	61

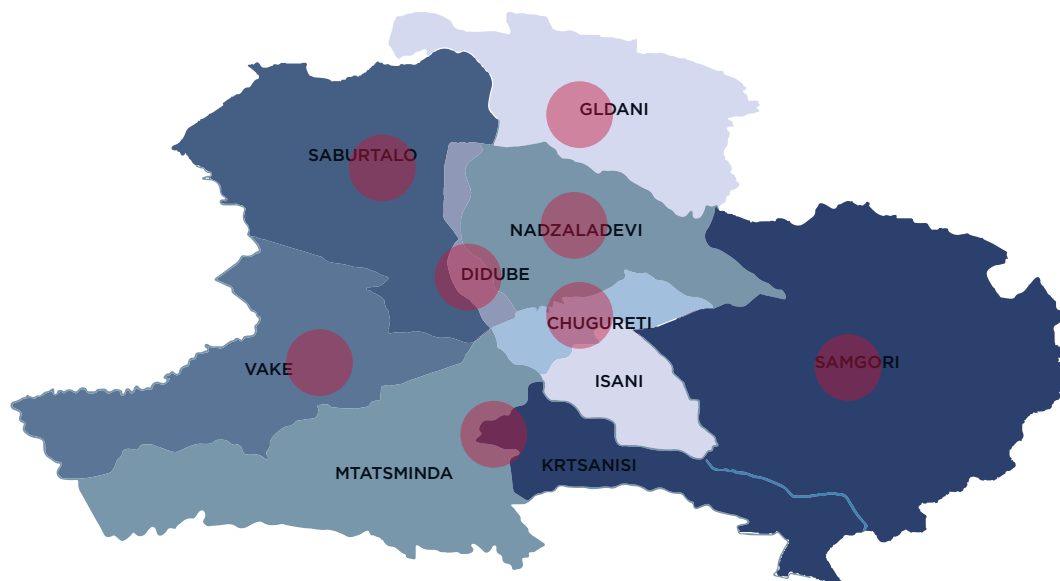
Source: GeoStat; UNIDO.

Table 23: Distribution of number of manufacturers of toys by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	1	Nadzaladevi	2
Didube	1	Saburtalo	8
Gldani	2	Samgori	2
Isani		Vake	2
Krtsanisi		Old Tbilisi	3
Mtatsminda	1	Unknown	
Total			22

Source: GeoStat.

Map 9: Distribution of number of manufacturers of toys by districts



The majority of Georgian toy manufacturers produce wood toys and environmentally clean and safe products, which enjoy growing a demand trend worldwide, including in Georgia. Currently, 80 per cent of toys are imported from China and the majority of them do not meet safety standards. From the beginning of 2020, new regulations on toy safety will be adopted and imports from China are expected to decrease significantly. This creates further potential for Georgian companies to substitute for these imports and subsequently start exporting.

The biggest manufacturer in this sector is Cubic Ltd (Geotoys) which produces wooden toys in the same price range as Chinese companies and already exports to France and to Germany. Other manufacturers are smaller companies and lack advanced technology, which is the biggest problem for this sector. Because of the scale, these companies are unable to produce large quantities and export to other countries. Many of the products of these companies are handmade and are low in quantity and in the relatively high prices range. Reportedly, the demand is high (domestically and internationally), but companies are unable to supply enough due to the absence of proper technology and equipment.

Interestingly, there is one association in this sector operating, called Safe Toys. It is a relatively new association and mostly does advocacy for adopting toy safety regulations. The work of the association has been successful so far and it plans to continue operations.

2.1.6 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, several sectors were found as worthy but did not end up in the statistical analysis due to lack of official statistics of the sector or relatively low employment. Therefore, these sectors were added and further analyzed: 1) Furniture, 2) Plastic products.

Furniture (Division 31). The furniture sector has moved to the forefront recently and has received assistance from the government and donors. The industry is comprised of four sub-groups with diversified types of furniture such as office, shop, kitchen and home furniture and their components such as mattresses.

Table 24: Industry Composition

Paper		
Sub - Groups	Number of Enterprises in Tbilisi	Share in the Sector
31.01 Manufacture of office and shop furniture	85	15,9%
31.03 Manufacture of mattresses	14	2,6%
31.02 Manufacture of kitchen furniture	12	2,3%
31.09 Manufacture of other furniture	422	79,2%

Source: GeoStat.

Table 25: Distribution of number of manufacturers of furniture by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Furniture	533	2	3	519	0,38%	0,56%	97%	3084

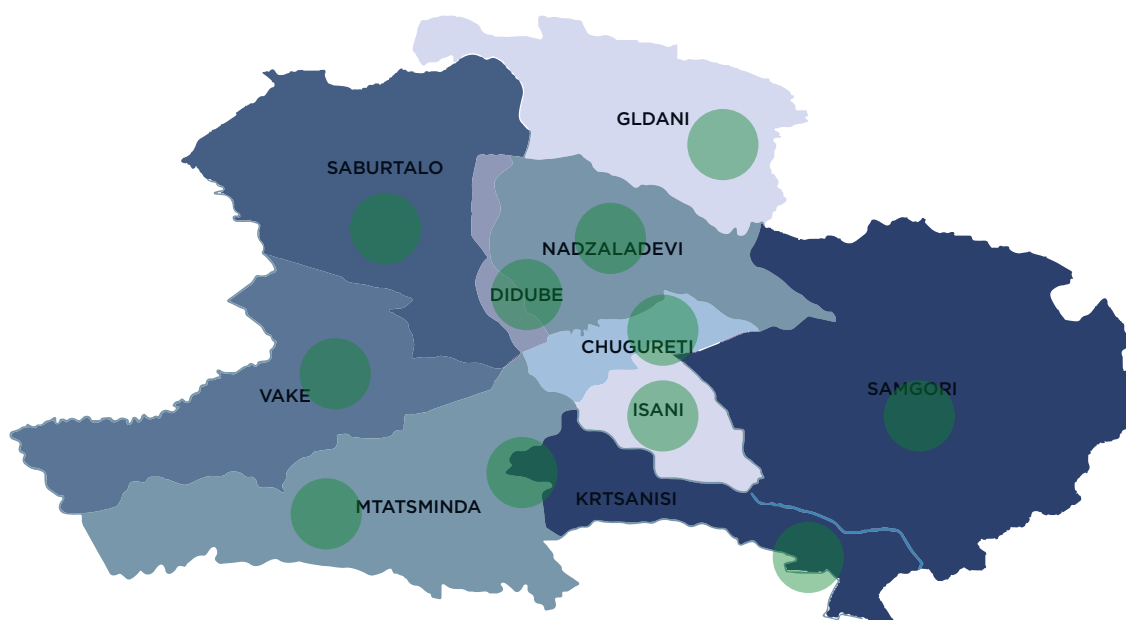
Source: GeoStat. UNIDO.

Table 26: Distribution of number of manufacturers of furniture by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	36	Nadzaladevi	132
Didube	45	Saburtalo	91
Gldani	31	Samgori	83
Isani	42	Vake	28
Krtsanisi	2	Old Tbilisi	31
Mtatsminda	4	Unknown	2
Total			533

Source: GeoStat.

Map 10: Distribution of number of manufacturers of furniture by districts



Source: UNIDO.

GLZ has identified furniture as an interesting sector to work with and facilitated the establishment of a cluster organization, which is commonly referred to as a furniture cluster. This cluster is a very geographically concentrated group of producers of up to 140 small producers who are located in a particular suburban industrial site of Tbilisi in Avchala. The cluster received about 2.5 mln EUR assistance from donors.

Interestingly, there is another association (an alternative to the cluster), which unites about 14 larger producers. A large industrial-scale furniture producer, Embawood, is located on the opposite side of the city and is not a part of the cluster nor the association.

Another interesting area in furniture manufacturing is producing animal shelters. The company Georgian Products has produced and exported this specific type of product to the EU for several years now. However, this is a single exceptional case, driven mainly by an EU-based company rather than a systematic practice for Georgian furniture manufacturers.

According to key informants, the Georgian furniture sector is already decently equipped with modern machinery and the most significant challenges lay outside the technical base.

However, there are problems in the industry such as overall level of sophistication of management, skills and compliance with standards, absence of specialized laboratories, absence of right legal framework (e.g., the forest code). No significant competitive advantage was found in this sector, except Georgia's increasing design industry, which could manifest in producing creative or high-end furniture. The overall level of cooperation, especially among the large producers, is limited. One of the key informants also mentioned that Enterprise Georgia is in the process of preparing a study related to the furniture industry that aims at identifying niches in furniture industry that Georgia could be competitive in. The study is not yet finished but is being drafted.

Rubber and Plastic Products (Division 22). The industry is comprised of six sub-groups of which a large majority, about 71 per cent, are production builders' ware of plastic. Manufacturers of plastic packaging the next biggest group. There are about eight medium-sized firms in the industry that produce various types plastic articles such as pipes for sewage, water and gas systems (e.g. Polymeri I Ltd), polyethylene bags and packaging solutions (e.g. Georgian Polymer Ltd, AA Plast and few others).

Demand for plastic articles is high in Georgia, but a large part of local supply is of poor quality. Most of the local suppliers use secondary plastic as an input. Only two factories in Georgia (Polymeri Ltd and Georgian Plastic Pipes Ltd) have special certifications and produce pipes from primary produced plastics. These companies have a higher demand than they can supply. The deficit is then filled with other smaller producers around Tbilisi. Besides the domestic demand, there is some demand for high-quality plastic articles from neighboring countries (e.g., Azerbaijan) to where some plastic products are exported. However, due to the large physical volume of shipments, the local market is much more preferred.

There is no industry or cluster association in this sector. Large companies do not want to cooperate with other small manufacturers either. Cluster potential could be considered only among small producers.

Table 27: Industry Composition

Rubber and Plastic		
Sub - Groups	Number of Enterprises in Tbilisi	Share in the Sector
22.23 Manufacture of builders' ware of plastic	256	70,90%
22.22 Manufacture of plastic packing goods	44	12,2%
22.29 Manufacture of other plastic products	38	10,5%
22.21 Manufacture of plastic plates, sheets, tubes and profiles	20	5,5%
22.19 Manufacture of other rubber products	2	0,6%
22.11 Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	1	0,3%

Source: GeoStat.

Table 28: Distribution of number of manufacturers of rubber and plastic by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Rubber and plastic	361	0	8	350	0,00%	2,22%	97%	1636

Source: GeoStat; UNIDO.

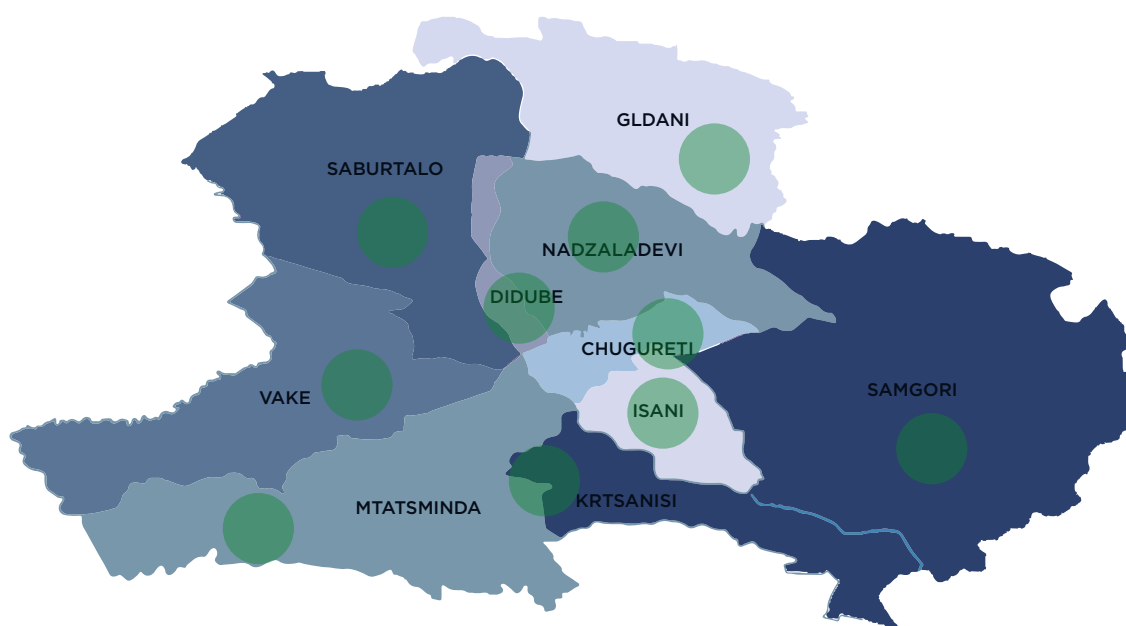
Table 29: Distribution of number of manufacturers of furniture by districts

District	Number of Enterprises	District	Number of Enterprises
Chugureti	22	Nadzaladevi	86
Didube	27	Saburtalo	53
Gldani	25	Samgori	75
Isani	33	Vake	22
Krtsanisi		Old tbilisi	16
Mtatsminda	2	Unknown	
Total			361

Source: GeoStat.

The challenge that the polyethylene bags (plastic packaging) sector faces is the new packaging regulation stemming from the Association Agreement, which bans the usage of plastic bags of particular specifications.

Map 11: Distribution of number of manufacturers of rubber and plastic products by districts



Source: UNIDO

2.2 Overview of Kakheti and its clusters

2.2.1 Overview of the region and its economy

Kakheti is an eastern Georgian region covering 18 per cent of the country (11,310 thousand km) with a population of 312,500 people as of 2019. Telavi is its capital. The region is comprised of eight administrative districts: Telavi, Gurjaani, Kvareli, Sagarejo, Dedoplistskaro, Signaghi, Lagodekhi and Akhmeta. The region is bordered by the Russian Federation and Azerbaijan. According to statistics, in 2018 the employment rate and economic activity was relatively high compared to the Georgian national average. Compared to other regions, Kakheti is relatively well-developed. Wine producing remains a leading sector of the local economy (one of the main exported goods from Georgia), with 65 to 70 per cent of Georgia's vineyards. Among non-agrarian sectors, tourism remains one of the main sectors in Kakheti with potential for further development.

Tusheti plays an important role in the Akhmeta municipality. Eco-tourism, with beautiful landscapes such as the Batsara-Babaneuli protected area, attracts many visitors and has the potential to attract many more. The sheep sector is well developed in Tusheti and Akhmeta has an association of shepherds which combines shepherds and Guda cheese (hard cheese made from sheep's milk) producers. Tusheti also has a well-equipped wool processing factory owned by Caritas Georgia and one more cooperative for cheesemakers and wool producers.

Cereal/grain farming is the most significant agricultural sector in Dedoplistskaro municipality. The most cultivated species are wheat, barley and a small amount of sunflower. The second most developed sector in agriculture is livestock farming, cows and sheep mostly, with many small-scale dairy farms. Also, almond and pistachio orchards are being currently developed by small farmers in the municipality. These can have a large potential in the future due to the local climate conditions.

Viticulture plays biggest role in Gurjaani's economy, with several wine companies reflected on large number of companies registered under manufacturing sector. Gurjaani is a microzone for Mukuzani and Akhasheni wines and has 19 species locally originated wine. Tourism is relatively less developed in this area, mainly represented by wine cellars rather than hotels. Wooden wine barrels are also produced in Gurjaani, adding to the potential of Kakheti to form a vertically integrated cluster, producing almost all necessary inputs for winemaking. Grape seed oil production like in Telavi is also developed in Gurjaani. It is mostly sold locally. Fruit growing is popular type of primary agriculture, peaches being the most popular kind exported to neighboring countries (Russia, Azerbaijan and Armenia). The growing of berries is a relatively new field that is currently developing in the region and generally in the country. The Georgian Berry Growers Association is active in Gurjaani.

In the Kvareli municipality, viticulture is the most developed area with a large number of vineyards and wine companies and a micro-zone of Kindzmarauli wine. Fruit growing is the most popular sector in Kvareli, and lately a few processing factories have been established. Kvareli is the second-largest municipality after Lagodekhi in terms of persimmon growing due to suitable climate conditions. In addition, there are two nut processing factories in the municipality. Kvareli is a leading municipality in terms of producing bee milk and is well-known for honey production. Seedling nurseries both for fruits and vineyards are operating in Kvareli (and a few more in Gurjaani and Akhmeta). However, they lack international standards. Tourism is an important sector for the municipalities. Kvareli attracts many tourists with its nature and famous modern hotels.

Lagodekhi is a relatively less developed municipality, but it has excellent development potential. Fruit and vegetable growing are the main type of primary agriculture there. Among fruit the most common are watermelons and melons. There are also a few strawberry greenhouses in Lagodekhi and kiwi and persimmon orchards, mainly grown by households, but in large quantities. Among vegetables, the most common type is eggplant,

mostly grown in greenhouses. Lagodekhi is also the leading grower of corn. Lagodekhi has the potential to be destination for eco-tourism as well, which is the most exciting sector in this municipality. There is one essential (rose) oil producing company in Lagodekhi owned by Russian investor together with a rose plantation.

Poultry farming is the most developed sector in Sagarejo, with three to four large poultry farms. Sheep are also common in this municipality. Furthermore, it is second largest grower of grain in Kakheti. Vineyards and wine-making are part of Sagarejo as well, just like the rest of Kakheti. The most famous terroir varieties are Manavis Mtsvane and Khashmis Saperavi. Nut orchards are an emerging sector for Sagarejo. Currently, there are 700 to 1,000 ha of newly-planted almond orchards and 100 ha of pistachios. In this regard, the nut sector in general and almonds and pistachios in particular have a significant recognized global export potential and several new large-scale (several hundreds of hectares) developments are underway. These developments are anticipated to give birth to a high-value industry in the region.

Sighnaghi is the leading tourist destination in Kakheti. After Telavi, it has the largest number of registered companies in the accommodation and food sector. As a result, there are many hotels already operating and many more are opening now. Vineyards and winemaking are also developed in Sighnaghi, with two to three large wine producers and several small ones. However, there are no wine microzones in this municipality. Among primary production, wheat production is also developed in the municipality and there are several wheat storages and one functioning wheat mill. Olive orchards are a new interesting sector for Sighnaghi and for Kakheti in general. There are several orchards. One processor company produces olive oil which is already sold in several large supermarkets and exported. This is a newly developed sector which shows significant potential. Silk production was an important sector for Kakheti in the past and some locals are still trying to produce it in small quantities. Sighnaghi currently has one small silk factory and one cooperative. Sighnaghi has the most significant number of ponds in Kakheti and aquaculture is relatively well-developed here.

Telavi is the administrative center of Kakheti and its main city. Many economic sectors active in the various municipalities of Kakheti are also present in Telavi. Vineyards and winemaking are a big part of it, like in most parts of Kakheti. Telavi is mostly well-known for white wine, having Tsinandali and Napareuli microzones. Besides wine, local beer is also produced in Telavi which is mostly sold at local restaurants. In Vardisubani neighborhood, there is an aggregation of Georgian qvevri producers. This place is among the small number of places where qvevri is produced. This fact further supports the idea that Kakheti has resources to produce almost all products/inputs related to wine production. Tourism is also a significant part of Telavi's economy. It has the largest number of restaurants and cafes in the region, two brand hotels (Holiday Inn, Telavi and Radisson Collection Hotel, Tsinandali Estate Georgia) and several small hotels/guesthouses. Telavi is the second-largest producer of peaches in Kakheti (after Gurjaani) and produces some quantities of berries (by a few cooperatives), both with existing export potential. Beekeeping is also developed to some extent, with a few cooperatives producing some amounts of honey. Seedling nurseries are also present in Telavi (lacking standardization). There are also some livestock farms and nut orchards in Telavi.

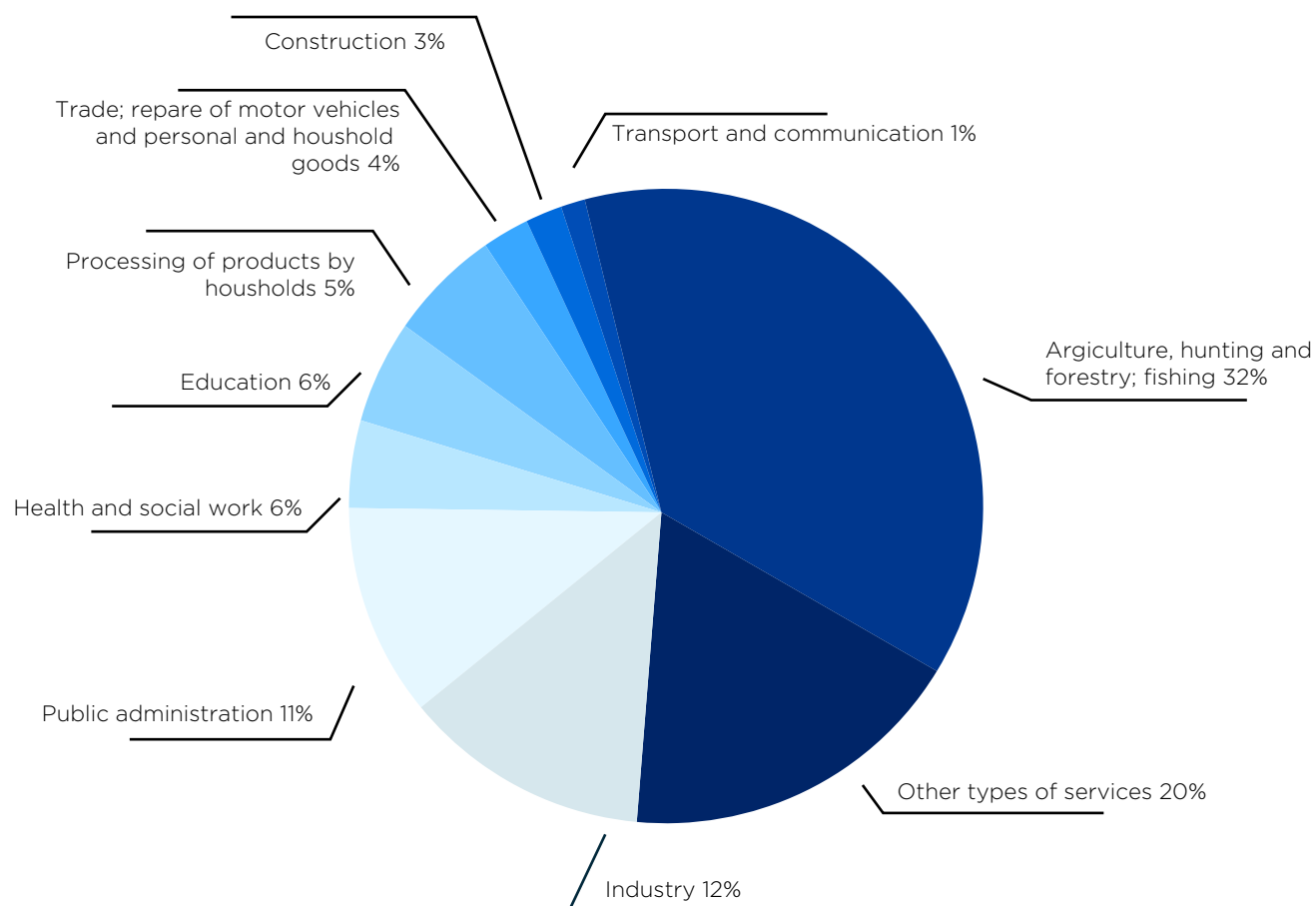
In general, Kakheti is an agrarian region, with the non-agrarian sector taking insignificant share of GDP and value added. The manufacture of agrarian products such as wine plays a significant role in the regional economy. Due to low urbanization level in the regional cities, development of industrial sector is not expected soon.

Table 30: Employment data

INDICATOR	KHAKHETI	GEORGIA
Unemployment Rate	3,9 %	12.7 %
Economic activity Rate	70.2 %	63.9 %
Employment Rate	67.5 %	55.8 %

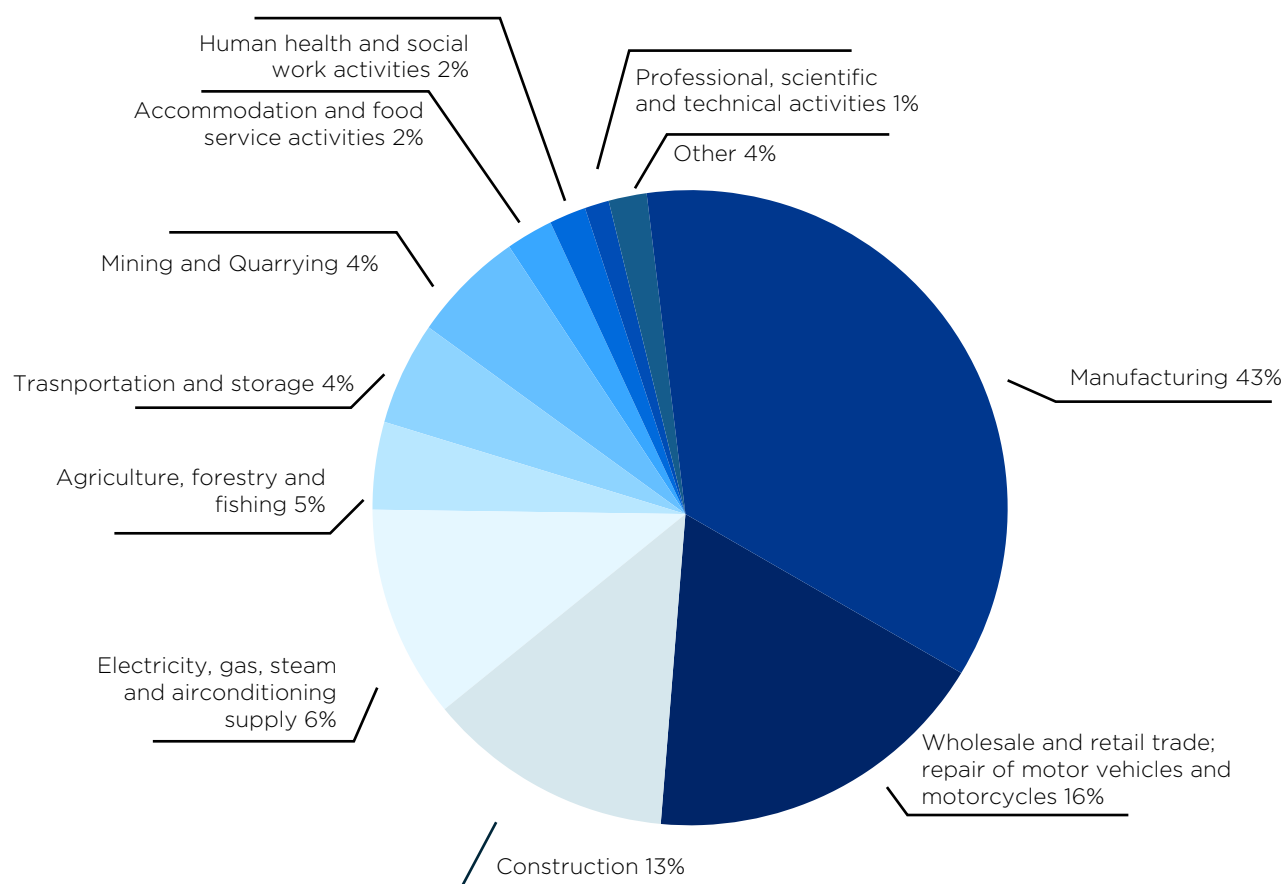
Source: GeoStat.

Figure 4: Regional GDP by economic activities, 2017



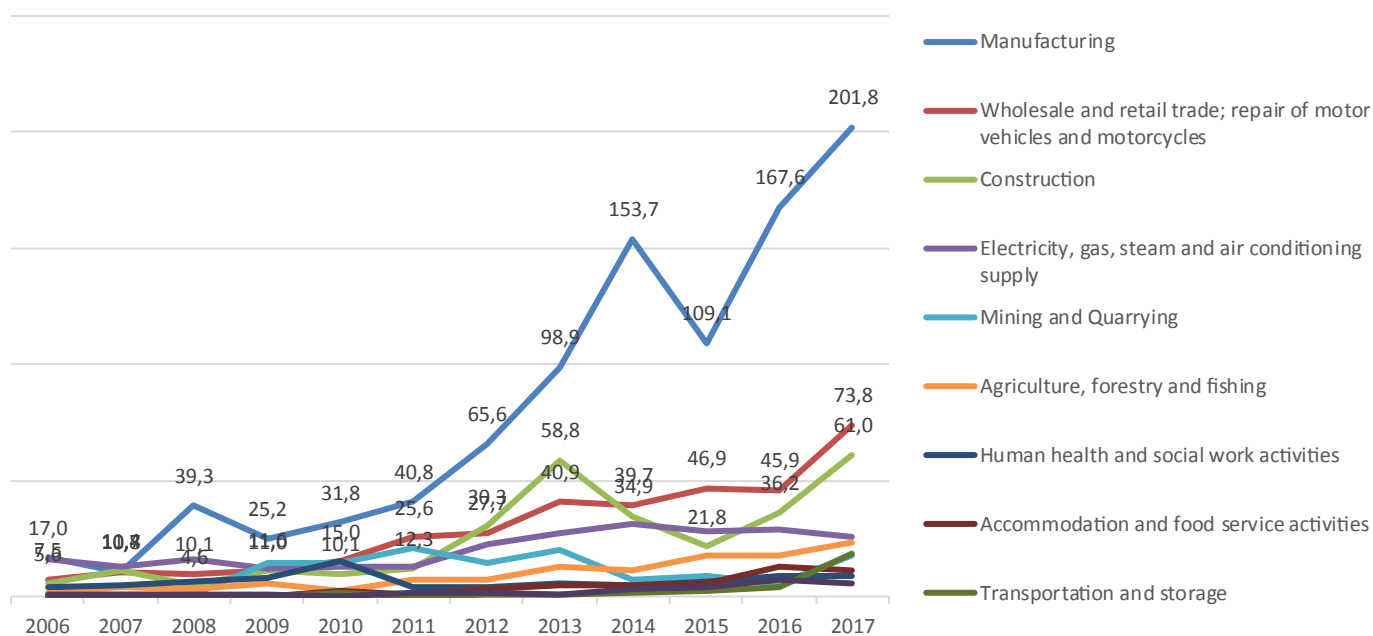
Source: GeoStat.

Figure 5: Regional value added by economic activities, 2017



The growth of the value added of the main sectors of the economy was quite significant during the last few years. The key sectors in Kakheti such as manufacturing (mostly due to the manufacturing of beverages), retail trade, and construction showed impressive growth. Figure 6 below shows the dynamics of the value added by sectors in Kakheti.

Figure 6: Value Added in Kakheti by economic activities, 2006-2017 (Mln GEL)



Value added in manufacturing increased from less than 17 mln GEL in 2006 up to about 202 mln GEL in 2017. The trade sector value added increased from under 7.5 mln GEL up to 74 mln GEL in the same period. The figure below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Table 31: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forestry and fishing	222%	208%	128%	59%
Mining and Quarrying	22%	27%	29%	-45%
Manufacturing	208%	128%	38%	12%
Electricity, gas, steam and air conditioning supply	15%	12%	-34%	93%
Water supply; Sewerage, Waste Management and Remediation Activities	83%	82%	47%	-
Construction	101%	133%	-25%	153%
Wholesale and retail trade; repair of motor vehicles and motorcycles	166%	147%	93%	200%
Transportation and storage	1790%	594%	163%	-
Accommodation and food service activities	224%	418%	146%	2876%
Information and communication	488%	455%	26%	0%

Real estate activities	237%	253%	-10%	-
Professional, scientific and technical activities	400%	367%	116%	-
Administrative and support service activities	200%	213%	120%	150%
Education	433%	460%	24%	-
Human health and social work activities	112%	92%	29%	-32%
Arts, entertainment and recreation	-	-	3314%	-
Other service activities	-	500%	159%	-

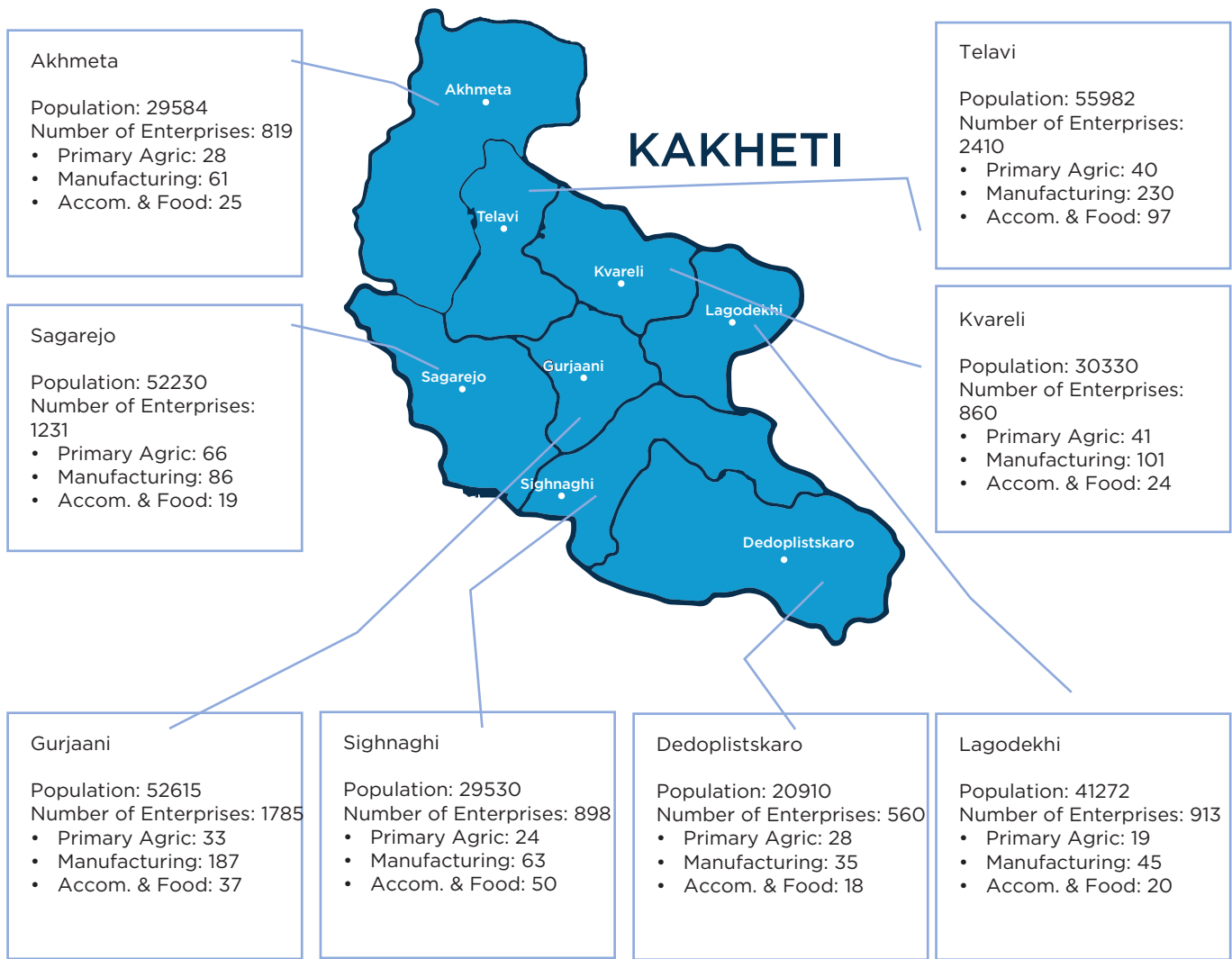
Source: GeoStat.

In the past five years, the industries which gained momentum in terms of value added were transportation and storage (about 1,790 per cent growth), Information and communication (with about 488 per cent growth of value added), education (433 per cent), professional, scientific and technical activities (116 per cent), accommodation and food service activities (244 per cent). In the past five years, the industries which gained momentum in terms of output were transportation and storage (594 per cent) and education (460 per cent).

In terms of employment growth figures, the leading sectors are arts, entertainment and recreation (with 3,314 per cent growth), transportation and storage (163 per cent) and other service activities (159 per cent). Other sectors such as agriculture, forestry and fishing, accommodation and food service activities, professional, scientific and technical activities, administrative and support service activities come next with an average of 128 per cent growth in the same period.

The most dynamic sectors in terms of investments in fixed assets are accommodation and food service activities (2,876 per cent growth), trade (200 per cent), construction (153 per cent), education (150 per cent) and agriculture, forestry and fishing (59 per cent).

Map 12: Administrative map of Kakheti with key Figures



Source: GeoStat.

2.2.2 Past relevant studies

There were several value-chain studies carried out in Georgia in the past that identified value chains (mostly agriculture) developed in the Kakheti region.

Table 32: The list of relevant studies

EXISTING VALUE CHAINS KAKHETI	SOURCE
• Peaches	• AMMAR, 2016 AND ENPARD/PMCG
• Berry	• EU for Georgia/PMCG
• Beekeeping/Honey	• AMMAR
• Vegetables	• AMMAR and EPI, 2011
• Wine	• EPI and World Bank, 2017
• Tourism	• EPI, 2011
• Adventure	
• Wine	
• Machinery services	

Source: UNIDO.

Furthermore, the Kakheti Development Strategy established priorities vis-à-vis the following sectors in the region for 2014-2021:¹⁰

Table 33: The list of priority sectors identified by strategy

PRIMARY AGRICULTURE/AGRO PROCESSING	SERVICE PROVIDERS/FOOD AND ACCOMMODATION
• CEREALS	• TOURISM
• VEGETABLE PROCESSING	
• BEEKEEPING/HONEY	
• PEANUTS	
• BIO-POTATOES	
• PRODUCTION AND PROCESSING/ PRESERVING OF PEACHES AND APRICOTS HONEY	

Source: Kakheti Regional Development Plan 2014-2021.

¹⁰ Although the priorities are clearly stated, it is hard to establish the real level of priority according to the document or the actions actually carried out by the local government with regards to each sector. This is relevant for all regions of Georgia.

2.2.3 Regional statistical analysis

Statistical analysis showed that there are 125 sectors (on 4-digit level) that have employment-based LQs higher than 1.25. The top 20 sectors among these 125 are shown in the table below (excluding sectors with only one active company). Sectors with the highest LQs also include service providers such as agricultural machinery rentals, financial service providers, wholesale of leather/skins (Table 34). However, all sectors except primary agriculture and manufacturing are excluded from further analysis.

Table 34: Top 20 Sectors by number of enterprises in Kakheti (LQs of more than 1.25)

NACE Code	Sectors	Employment	LQ	N of Enterprises
20.14	Manufacture of other basic chemicals	7,2	18,1	3
01.21	Growing of grapes	259,9	13,6	29
11.02	Manufacture of wine from grape	3284,7	13,2	162
77.31	Rental and leasing of agriculture	114,4	10,4	8
01.70	Hunting, trapping and related service	7,2	10,3	3
01.50	Mixed farming	114,4	9,8	8
25.91	Manufacture of steel drums and similar	4,8	7,4	2
01.41	Raising of dairy cattle	16,8	6,8	7
64.00	Financial service activities, except insurance and pension funding	100,0	6,2	2
01.45	Raising of sheep and goats	4,8	5,9	2
64.10	Monetary intermediation	114,4	5,7	8
29.10	Manufacture of motor vehicles	9,6	5,2	4
10.41	Manufacture of oils and fats	9,6	5,1	4
46.24	Wholesale of hides, skins and leather	4,8	4,1	2
01.11	Growing of cereals (except rice), leguminous crops and oil seeds	68,2	4,1	28
90.02	Support activities to performing arts	107,2	4,0	5
01.42	Raising of other cattle and buffaloes	28,8	3,8	12
01.62	Support activities for animal production	19,2	3,8	8
36.18	Agents specialised in the sale of other particular products	71,9	3,6	30
01.49	Raising of other animals	26,4	3,6	11

Source: UNIDO

Following the established methodology, the list of the relevant sectors was sorted by LQ and by number of enterprises and then overlap was found (highlighted sector on the table below). Eight sectors were identified which were both among the top 20 by LQ values and top 20 by number of enterprises. The leading sector is wine manufacturing with 162 companies and LQs of over 13. It is followed by growing of grapes and growing of cereal, raising of animals, logging, manufacture of wine and manufacture of plastic builders' ware.

Table 35: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
20.14	Manufacture of other organic	7,19	18,12	3	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	412,07	1,24	171
01.21	Growing of grapes	259,93	13,58	29	11.02	Manufacture of wine from grape	3284,66	13,20	162
11.02	Manufacture of wine from grape	3284,66	13,20	162	22.23	Manufacture of builders' ware of plastic	222,96	2,21	93
01.70	Hunting, trapping and related service activities	7,19	10,33	3	01.47	Raising of poultry	189,75	2,15	39
01.50	Mixed farming	114,38	9,78	8	31.09	Manufacture of other furniture	93,50	0,61	39
25.91	Manufacture of steel drums and similar containers	4,79	7,43	2	23.61	Manufacture of concrete products for construction purposes	87,36	1,01	36
01.41	Raising of dairy cattle	16,78	6,80	7	01.21	Growing of grapes	259,93	13,58	29
01.45	Raising of sheep and goats	4,79	5,93	2	01.11	Growing of cereals (except rice), leguminous crops and oil seeds	68,18	4,06	28
29.10	Manufacture of motor vehicles	9,59	5,22	4	08.12	Operation of gravel and sand pits; mining of clays and kaolin	59,94	0,85	25
10.41	Manufacture of oils and fats	9,59	5,09	4	16.10	Sawmilling and planing of wood	56,19	1,90	23
01.11	Growing of cereals (except rice), leguminous crops and oil seeds	68,18	4,06	28	02.20	Logging	45,55	3,57	19
01.42	Raising of other cattle and buffaloes	28,77	3,85	12	10.72	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	40,76	0,68	17
01.62	Support activities for animal production	19,18	3,75	8	10.51	Operation dairies and cheese making	41,81	0,53	17
01.49	Raising of other animals	26,37	3,62	11	10.61	Manufacture of grain mill products	38,36	0,35	16
02.20	Logging	45,55	3,57	19	10.13	Production of meat and poultry meat products	35,96	0,21	15
10.52	Manufacture of ice cream	102,39	2,85	3	01.61	Support activities for crop production	31,17	0,41	13
15.12	Manufacture of luggage, handbags and the like, saddlery and harness	4,79	2,63	2	01.42	Raising of other cattle and buffalos	28,77	3,85	12
25.93	Manufacture of wire products, chain and springs	9,59	2,31	4	33.12	Repair of machinery	28,77	0,59	12
22.23	Manufacture of builders' ware of plastic	222,96	2,21	93	10.39	Other processing and preserving of fruit and vegetables	28,77	0,47	12
01.47	Raising of poultry	189,75	2,15	39	01.49	Raising of other animals	26,37	3,62	11

Source: UNIDO

After combining this statistical analysis with information presented during interviews and collected from available reports and studies, the sectors which ended up in the statistical analysis but were not found to be interesting or important during key stakeholders and key informant interviews or desk research were excluded from consideration. These were:

- The manufacture of builders' ware of plastic. Most of the companies registered under this NACE code are small-scale, individual enterprises that assemble various plastic objects for buildings, the manufacture of builders' ware of plastic only being small part of their business. There is a high number of registered enterprises in this sector is due to the increased construction of hotels and hostels in this region. However, this type of manufacturing is developed in almost every region and the number of enterprises is driven by local demand rather than by the special resources or know-how of that region. Moreover, this production depends heavily on imported secondary plastic materials. Therefore, this is not a distinctive or characteristic sector for the region. Furthermore, it was not considered as a priority or important during interviews with local or national stakeholders. For the reasons mentioned above, this sector was excluded from further consideration.
 - The raising of animals (poultry, cattle, buffalo and others). Most of the animal growers in Kakheti are small scale farms that mostly supply larger farms near Tbilisi. This is a primary production which, as mentioned in the introduction, is not a primary focus for this study. No processing takes place in Kakheti. Therefore, it does not create high value added for the region. Furthermore, it has not been mentioned as an important or priority sector during key-informant interviews or in regional development plans. Therefore, it was excluded from further considerations.
 - Logging and the growing of cereals. Both sectors are in primary agriculture, which is out of the primary focus of this study. Furthermore, no significant competitive advantage or local resources were discovered and they cannot be considered as distinctive or characteristic for the region. Besides, it has not been considered as a priority by local stakeholders, either. Therefore, they were excluded from further considerations.
- Based on the above analysis, only the wine/vineyards industry in multiple municipalities has been identified as a potential cluster:

Table 36: Shortlisted sectors by number of enterprises (LQ more than 1.25, agriculture and manufacturing)

NACE Code	Sectors	Employment	LQ	N of Enterprises
11.02	Manufacture of wine from grape	3284,66	13,20	162
22.23	Manufacture of builders' ware of plastic	222,96	2,21	93
01.47	Raising of poultry	189,75	2,15	39
01.21	Growing of grapes	259,93	13,58	29
01.11	Growing of cereals (except rice), leguminous crops and oil seeds	68,18	4,06	28
02.20	Logging	45,55	3,57	19
01.42	Raising of other cattle and buffaloes	28,77	3,85	12
01.49	Raising of other animals	26,37	3,62	11

Source: UNIDO

2.2.4 Analysis of potential clusters

Wine Industry/Vineyards. The only sector with apparent regional concentration (spans across almost all municipalities of the region) and cluster potential is the wine industry/vineyards. This sector has been identified both from data analysis and regional interviews.

Kakheti has the resources needed to produce all the necessary products/inputs (except glass bottles) for all stages of the value chain. Furthermore, Georgia has a clear national competitive advantage due to the large wine production (economies of scale) and access to almost all necessary inputs locally. To start with seedling nurseries, there are nurseries for fruits, including grape, in Telavi, Kvareli, Gurjaani and Akhmeta, although they lack standardization. Moving onto vineyards, an analysis of perennial crops showed that growing of the grapes is the leading sub-group with 29 registered companies and an employment of about 260 people. Leading municipalities in this regard are Kvareli, Gurjaani and Telavi, but vineyards are common in every part of the region. The distribution of vineyards is given below according to the registered companies. However, there are many more which are unregistered.

Table 37: Distribution of number of enterprises by municipalities

Sector Name	Akhmeta	Dedoplistskaro	Gurjaani	Kvareli	Lagodekhi	Sagarejo	Sighnaghi	Telavi
Growing of Grapes	0	1	5	8	0	3	2	10

Source: GeoStat.

Furthermore, manufacturing wine has a high concentration of companies in the Kakheti region and showed significantly high LQ, therefore high employment of the sector (an estimated 3,300 people). There are 162 registered wine companies in Kakheti, mostly concentrated in Telavi, Gurjaani and Kvareli. However, the whole region should be considered as one large wine cluster, rather than municipality-oriented clusters.

Table 38: Distribution of number of enterprises by municipalities

Sector Name	Akhmeta	Dedoplistskaro	Gurjaani	Kvareli	Lagodekhi	Sagarejo	Sighnaghi	Telavi
Wine	7	4	48	29	2	9	8	55

Source: GeoStat.

Unlike many other sectors in Georgian regions, the wine industry in Kakheti also includes five large and 11 medium-size enterprises. This is a good indicator of the size of the sector and its employment.

Table 39: Distribution of the number of enterprises in Kakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Wine	162	5	11	145	3%	7%	90%	3285

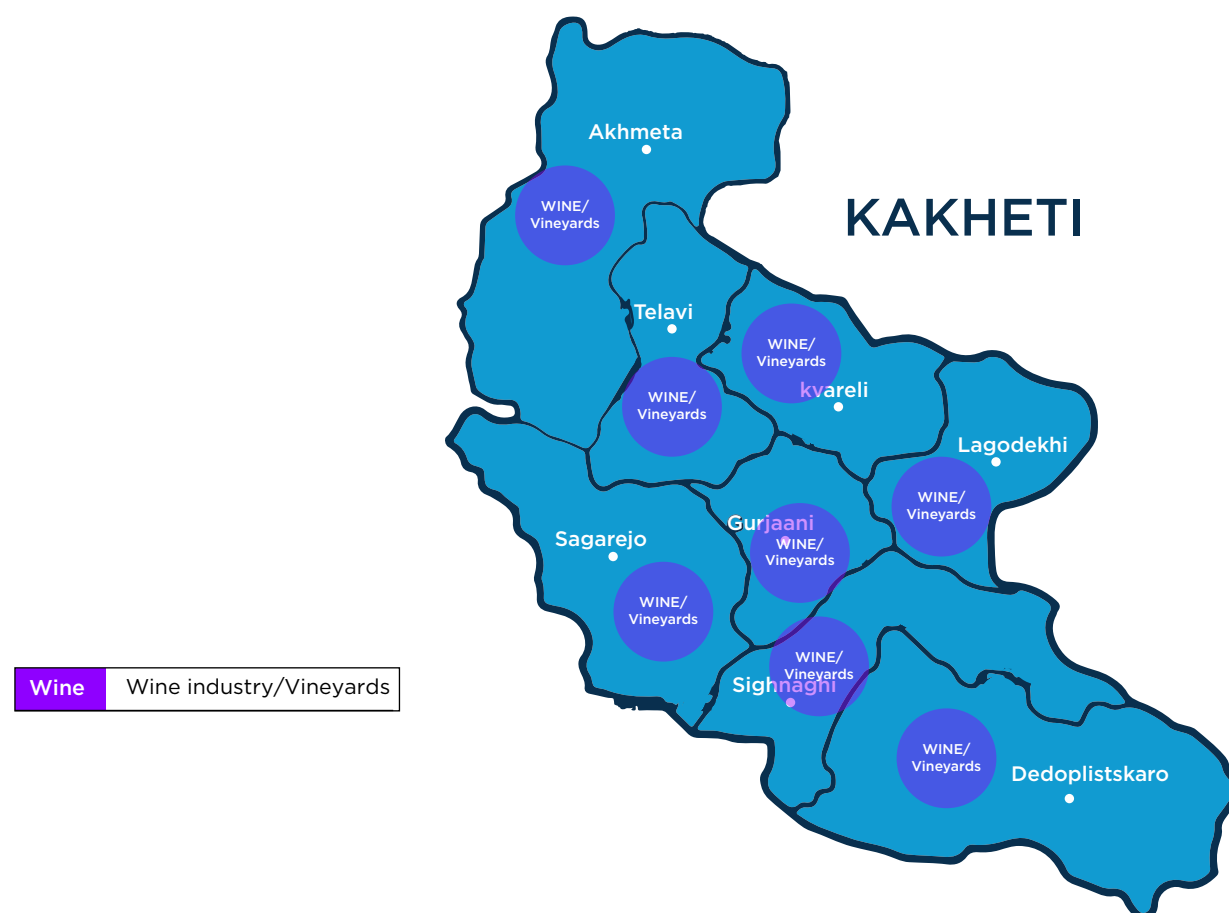
Source: GeoStat; UNIDO.

There is also a Georgian qvevri producers cluster in Kakheti as well, more specifically in Telavi's Vardisubani neighborhood. Wooden wine barrels are also produced in Gurjaani, adding to the potential of Kakheti to form a vertically integrated cluster, producing almost all necessary inputs for winemaking. Grape seed oil production is another part of the value chain, mostly developed in Telavi and Gurjaani (currently, mostly sold locally).

Furthermore, the wine industry already has some of the cluster characteristics, meaning there are existing signs of cooperation among wine producers. There is a Kakheti Wine Guild in Telavi that was founded by five large wine producers in 2014. It currently has up to 11 large wine companies as members. This wine guild owns and operates a wine store in Telavi that sells its products and gives tourists the opportunity for wine degustation. Their store sells and promotes not only the products of their members but also the products of small producers. The Kakheti Wine Guild organizes two annual wine festivals, one in Telavi called Telavino and another in Batumi called the Batumi Wine Weekend, where small companies (mostly from Telavi) are represented. According to the director of the Kakheti Wine Guild cooperation in this sector in Kakheti is very open and companies are willing to work together to promote Georgian wine industry. There are also three cooperatives, one in Telavi and two in Kvareli.

The wine cluster also has exciting sub-cluster potentials: the bio-wine sub-cluster and small wine cellar sub-cluster. The popularity of bio-products has been increasing over the last few years and therefore, interest in bio-wine has increased as well. Among Georgian bio-wine producers in Kakheti there are also signs of cooperation. Producers who are already well-established and are producing bio-wine successfully are now sharing expertise with other producers and market entrants. They operate as bio-wine industry consultants (sometimes even in neighboring countries). Furthermore, there is a nation-wide Natural Wine Association where the majority of members are from Kakheti. It is a relatively active organization with about 30 members in total. Additionally, most of these producers are members of nation-wide biological farming association Alkana. Another sub-group could be a small wine-cellar cluster due to its rapid increase in Kakheti. There are new cellars constantly entering the market and could be an exciting base for cooperation.

Map 13: Cluster location



Source: UNIDO

2.2.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, several sectors were found to be noteworthy but did not end up in the statistical analysis due to a lack of official statistics of the sector or relatively low employment. Therefore, these sectors were added and analyzed further: 1) nuts (Sagarejo, Sighnaghi, Kvareli, Dedoplistksaro), and 2) peaches (Gurjaani, Telavi).

Perennial Crops (Nuts, Peaches). Based on interviews, the growing of perennial crops also was identified along with two interesting sub-groups: a nut growers cluster and peach growers cluster. Due to high number of unregistered companies under perennial crops section, the analysis given below is mostly based on desk research and interviews.

Hazelnut orchards are mostly concentrated in Sagarejo, Sighnaghi and Kvareli, while walnuts, almonds and pistachios are in Sagarejo, Sighnaghi, Dedoplistskaro and Gurjaani. Official statistics of registered companies by municipalities are shown on Table 40. However, there are many unregistered ones as well.

Table 40: Distribution of number of enterprises by municipalities

Sector Name	Akhmeta	Dedoplistskaro	Gurjaani	Kvareli	Lagodekhi	Sagarejo	Sighnaghi	Telavi
Tree/Bush Fruits & Nuts	2	3	0	0	0	3	0	0

Source: GeoStat.

Although the nuts sector is not large at this moment, it is emerging, and its perceived potential is high. The nut sector in general and almonds and pistachios, in particular, have a recognized significant global export potential and several new large-scale (several hundreds of hectares) developments are underway. It is a new sector (started 5-6 years ago) and many farmers are receiving their first harvest this year. There are two or three processing factories currently being built. These developments are supposed to give birth to a high-value industry in the region. As mentioned above, Dedoplistskaro and Gurjaani are becoming active in the pistachio market. Small farmers are developing pistachio and almond farms in Dedoplistksaro, while there is a large investor in Gurjaani with 700 to 1,000 ha of newly planted almond orchards and 100 ha of pistachios.

Furthermore, there is the Walnuts and Almond Producers' Association. It is a nationwide association, but half of its members are from Kakheti (about 40 out of 80). The main problem in the sector is lack of knowledge and expertise. The members are trying to solve this problem with their joint efforts. According to the founder and director of this association, most of their members from Kakheti are agribusiness people and not farmers in original sense. They are also relatively large farmers in Georgia, as average size of land for members is 5-10 ha. Thus, these members are willing to cooperate and know how to work together.

In the Kakhetian nuts market, primary production is more developed than the processing. The majority of hazelnuts are purchased by processing factories in Samegrelo. However, there are two operating nut processing factories in Kvareli, as well.

The nuts sector is strategically important for Georgia and its exports, which attracts interest from the government (e.g. it helped farmers purchase equipment). The nut market is a growing market worldwide, with increasing demand. Therefore, given Georgia's suitable climate,

it is possible to have a significant role in world nut exports if there is proper knowledge and governmental support. Additionally, according to representative of the USAID's Agricultural Project, they recently added walnut, almond and pistachio production to their list of interesting value chains (there are seven selected value chains in total) and support from the USAID is also expected.

The peach sector was identified based on regional interviews and did not rank high on data analysis (with only two registered companies) as most of the stone fruit growers are not officially registered. Every part of value chain is well developed in this case, from fruit seedlings to manufacturing. Gurjaani is the principal municipality for peach growing and manufacturing, followed by Telavi, Kvareli and Sagarejo. According to the USAID's Agricultural Project, there are about 1,000 unregistered peach producers. Most of them are small scale farmers. Furthermore, there are few drying centers, three large and 24 small scale storages and about 20 exporter companies. Additionally, there are large fruit processing companies in Telavi and Gurjaani that purchase peaches.

Table 41: Distribution of number of fruit processors in Kakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Processing and preserving of fruit and vegetables	14	0	0	14	0%	0%	100%	34

Source: GeoStat; UNIDO.

Table 42: Distribution of number of fruit processors by municipalities

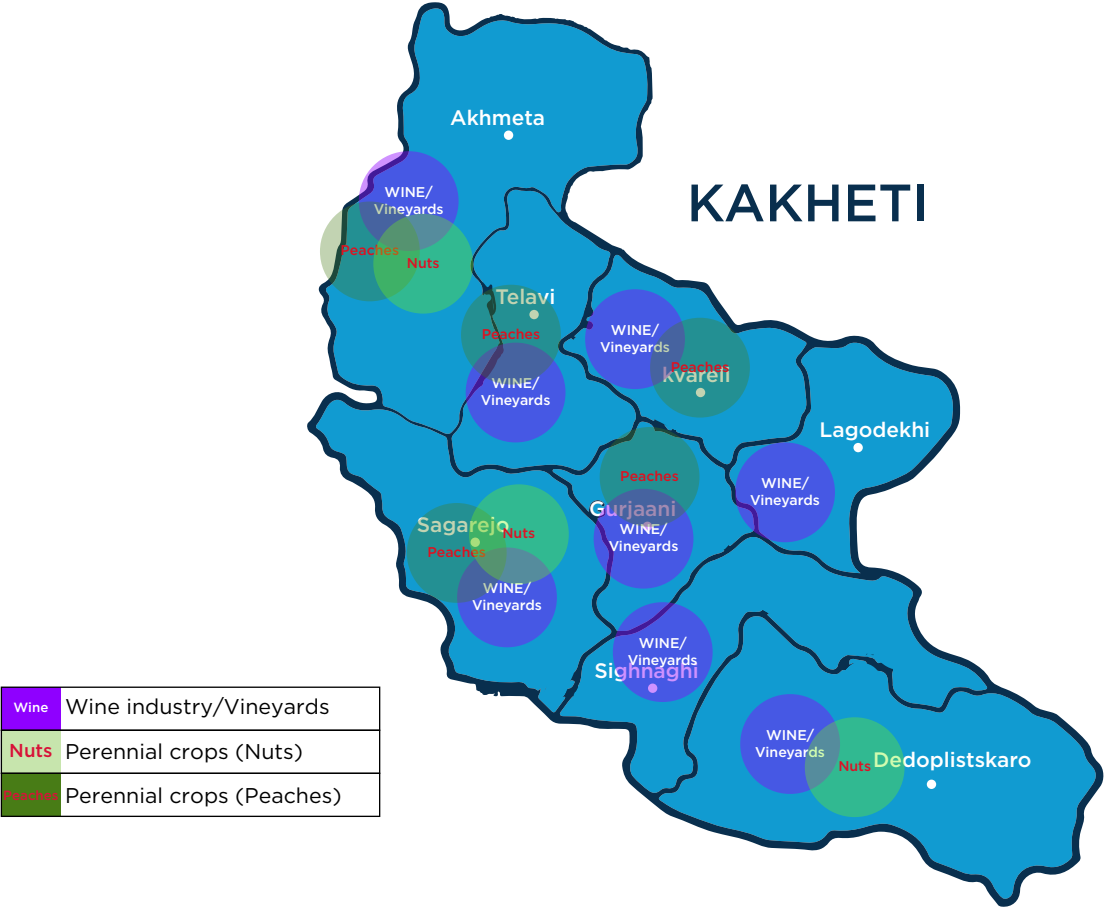
Sector Name	Akhmeta	Dedoplistskaro	Gurjaani	Kvareli	Lagodekhi	Sagarejo	Sighnaghi	Telavi
Processing and preserving of fruit and vegetables	2	1	2	1	0	1	3	4

Source: GeoStat.

Peaches are also exported to neighboring countries. According to one of the producer's interviews, during last season, about half of the harvest was exported. There is not any association in this sector in Kakheti: however, there are some signs of cooperation between processors and exporters. For example, with the help of the Ministry of Environmental Protection and Agriculture and the local municipality, meetings among growers, processors and exporters are organized at least once a year where they share ideas and plan the season jointly. There is no official association in this sector.

Other sectors were also mentioned during the interviews (e.g. Tushetian sheep, berries, sunflower oil, persimmons, tobacco, rose oil, bio farming), but these are small sectors and number of registered companies are either none existent or very few which makes them irrelevant to this study. However, there is potential in several areas, including Tushetian sheep products such as wool and wool products, meat and cheese, with further integration of tourism.

Map 14: Clusters location



Source: UNIDO.

2.3 Overview of Kvemo Kartli and its clusters

2.3.1 Overview of the region and its economy

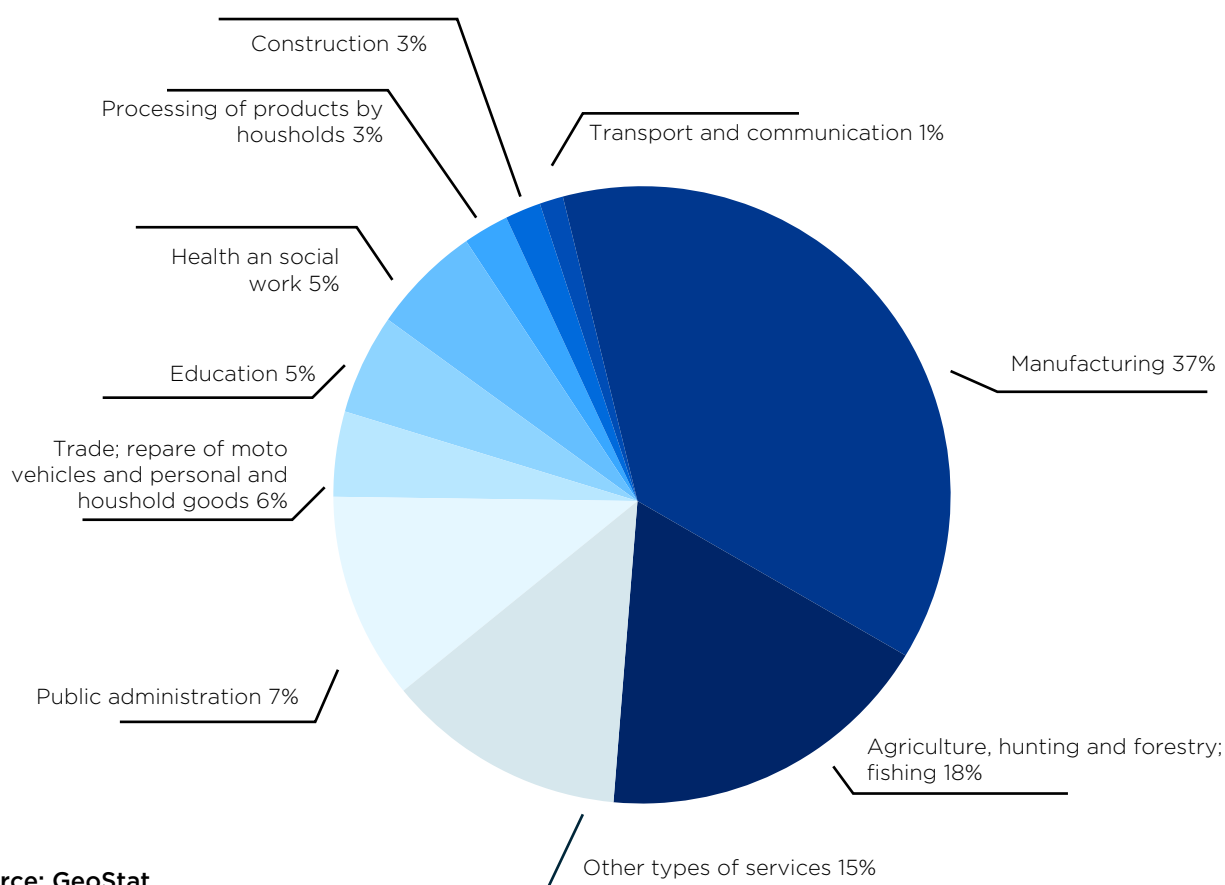
Kvemo Kartli is a region in southeastern Georgia with its capital in Rustavi. The region covers 10 per cent of Georgia (6,528 square km) with 433,000 population as of 2019. Kvemo Kartli consists of six municipalities: Bolnisi, Gardabani, Dmanisi, Tetritskaro, Marneuli and Tsalka. The region is ethnically diverse with Azerbaijanis and Georgians living together as majority of the population.

The distinctive features of the region are its proximity to Tbilisi as well as to the southern neighbors of Georgia, Armenia and Azerbaijan, its nearness to the Tbilisi international airport and its position on the crossroad of the transport and energy (oil and gas pipelines) corridors.

The region is one of the richest regions of Georgia in mineral resources, with about 200 different minerals, most of which are not yet explored. Exploited resources are copper, gold, silver, basalt, tuff, several other types of construction stones and a few other varieties. In 2014, there were about 146 licenses for the exploitation of mineral resources.¹¹

Not surprisingly, in Kvemo Kartli the manufacturing sector plays a significant role in the regional economy and makes up 37 per cent of regional GDP (and 34 per cent of the regional value added) while agrarian sector accounts only for 18 per cent (Figure 7). According to the Regional Development Plan of Kvemo Kartli, the manufacturing/industrial sector in the region mainly consists of extraction of minerals, metallurgical and chemical industry, production of cement and construction stones, ceramics, glass and porcelain manufacturing, energy generation and agro-production. The main industrial centers are Rustavi, Marneuli, Gardabani and Bolnisi.

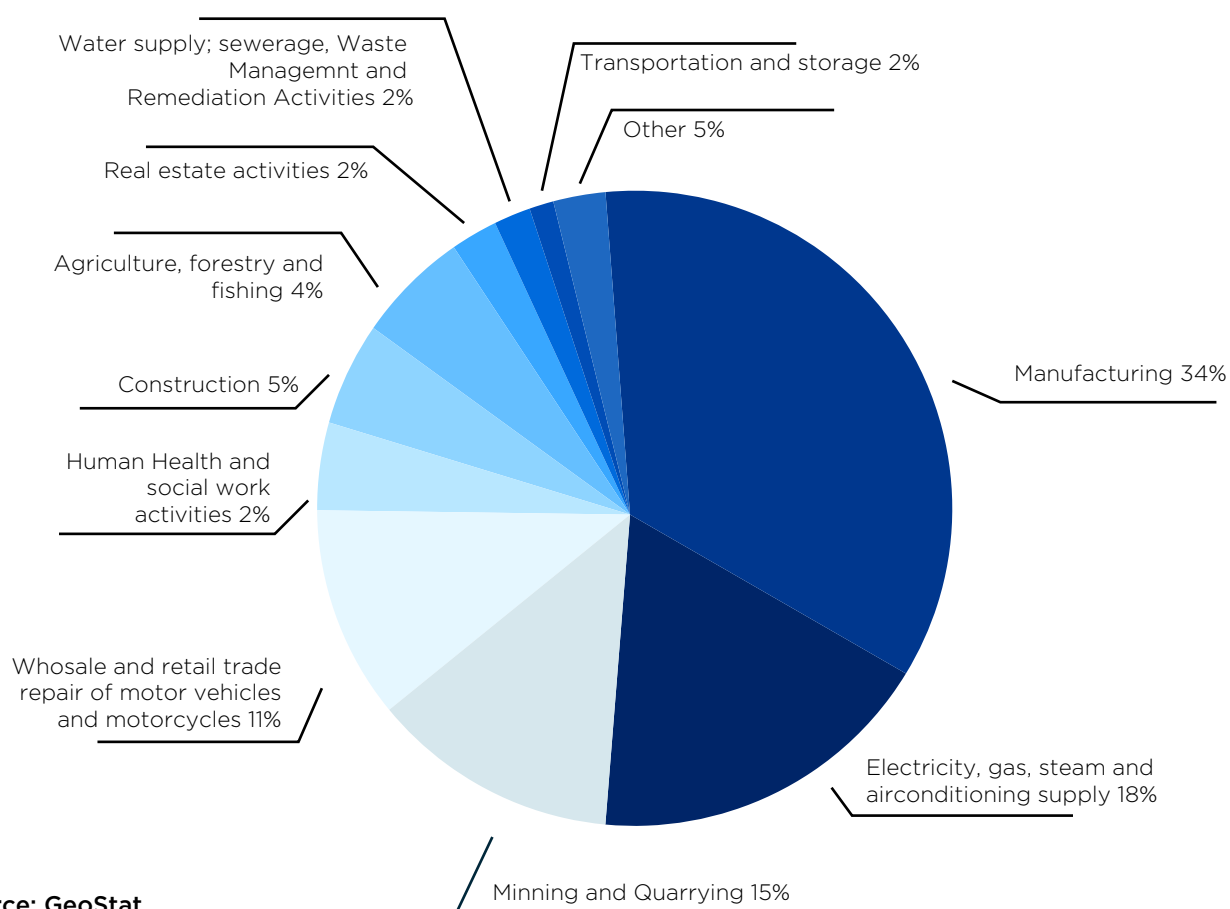
Figure 7: Regional GDP by economic activities, 2017



Source: GeoStat.

¹¹ Kvemo Kartli Regional Development Plan 2014-2021.

Figure 8: Regional value added by economic activities, 2017



Source: GeoStat.

While heavy industry is more concentrated in Rustavi, other municipalities mostly specialize in agriculture. Due to its special climate and fertile soil, it is possible to harvest crops during the season. The most commonly harvested crops are wheat and corn, which occupy the largest areas of the cultivated territories. During recent years, the trend is shifting from crops more towards livestock farming.

Kvemo-Kartli is one of the most unique regions of Georgia, the key character of which is its multi-ethnicity. The industrial legacy of Rustavi combined with the fertile agricultural soil of the southern municipalities as well as historical and cultural heritage (prominent archeology sites of the first European humanoid, the first wine and the first gold mining) makes this region a multi-profile region and offers opportunities of development in several directions.

Tsalka is the most remote of all municipalities of the region. The key profile of it is agriculture and, more specifically, livestock farming. No other significant concentration of enterprises or unique resources with a cluster potential were identified for this municipality.

The Dmanisi municipality is also one of the remote and relatively mountainous ones in this region, which is known for its archeology site of the 1.8 mln year old Dmanisi humanoid. The key agricultural activities are wheat crops and livestock farming. A large livestock farm operated by Ukrainian investors is located in this municipality. Recently, a large parcel of land was delivered to international investors who developed a large modern livestock farm in the area.

The Tetritskaro municipality borders the outskirts of Tbilisi, which accounts for the relative abundance of manufacturing activities in the region. One of the large poultry meat and egg factory facilities, Koda (Poultry Georgia Ltd), is located within this municipality.

The key characteristic resources of the municipality are tourism, mainly driven by Manglisi recreational resort, which used to be as popular a destination as Borjomi, but is severely struggling these days with infrastructure problems and lack of visitors; wine production from the unique old Georgia variety of Asuretuli grapes, originating from this place.

The Bolnisi municipality hosts several interesting business activities and is the home of ABD Georgia, currently the largest pig farm in Georgia, supplying to a significant number of retail and HoReCa businesses throughout the country and RMG Gold, a large-scale gold mining operation. Other interesting and significant business enterprises in the municipality are a potato chips factory (the FRIM brand) and a large poultry egg production facility (Savaneti). The leading type of primary production in Bolnisi is wheat production. Bolnisi town itself is an exciting tourist attraction. Built and settled by Germans more than a century ago, it has preserved its architectural style which tells the story of the German families who lived here. A newly opened museum will help the town to become an emerging tourism destination in the country. Wine production is one of the most interesting (emerging but a very prospective) industries addressed during the study, having some signs of potential cluster formation. It also has some unique resources to form it. There are about seven registered beverage companies in Bolnisi, of which five are in wine. In addition, there are up to 20 smaller unregistered winemakers who managed to create an association, to register their protected designation of origin for Bolnisi wine and to take part in joint activities.¹² Mineral resources, namely, stone production, represent another area of company network. There are 16 registered enterprises in the stone cutting, shaping and finishing sub-sector. Their primary business is basalt. Of them, reportedly, only one company has a facility capable of producing high-quality final products suitable to the modern market needs.

The key profile of Marneuli is agriculture, mostly vegetables and wheat. The region hosts several nurseries for vegetable and perennial plants. Mza Chitili is the biggest producer of seeds and seedlings. Marneuli Agro, one of the largest local producers of processed vegetable products in Georgia, operates its own fields. The municipality also has natural resources of crushed construction stone, with more than 40 registered companies operating in the area. In terms of unique resources, it is important to mention Gadachrili Gora, which archeology has proved to be the site of the first winemaking in the world. In this regard, it represents an important tourism resource.

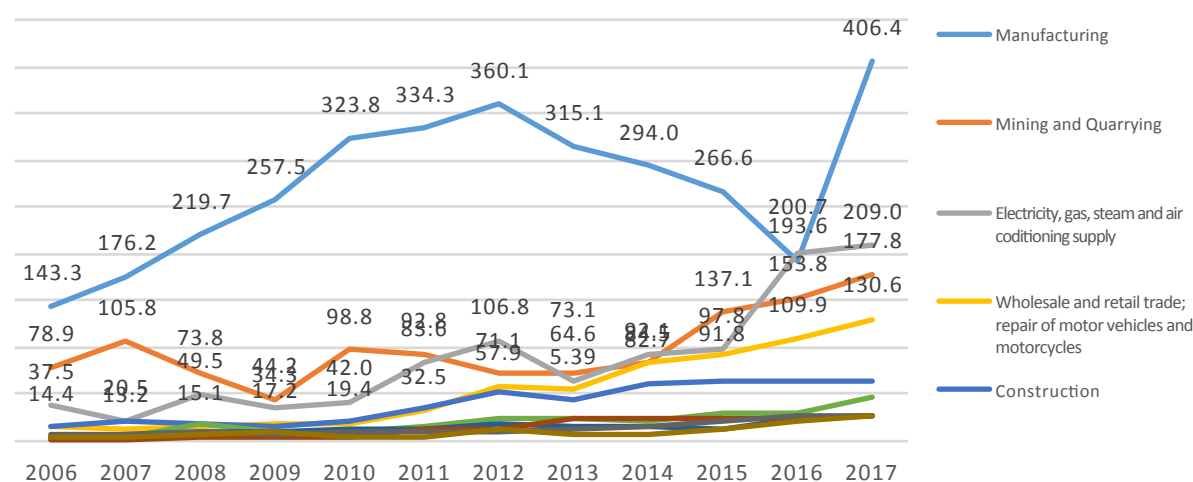
A key feature of this municipality is that this is the closest municipality to Tbilisi, including Kumisi, Martkopi, Sartichala and so forth. Due to this feature, a lot of manufacturing enterprises are located in this municipality. The key industry for the municipality is electricity generation by thermal power plants (three in total). Gas and oil exploration fields are located in Sartichala. Gardabani has the largest number of registered enterprises in primary agriculture throughout the region. The municipality hosts several large-scale poultry farms such as Chirina (Biu-Biu), Kumisi and Teleti farms poultry farms and a few smaller ones (in total 13). Besides, there are seven registered companies in meat processing (mostly slaughterhouses).

The Rustavi municipality is a hub for heavy industry of Georgia. The notably large companies are represented in the industry of steel manufacturing (Rustavi Steel, Geosteel and one smaller one) and ferro-alloys (former Rusmetal and a few smaller ones, total of 12), fertilizers (Rustavi Azoti) and cement production (Heidelberg Cement and a few smaller ones, total of 11), the railway carriage maintenance factory, a metal constructions factory and other factories producing various articles of steel (about 20 small enterprises). In recent years, Rustavi has become a distinct hub for the car trade (mostly second-hand ones). The car market in Rustavi hosts traders from all over the country and has established itself as a hub for such activity for the customers from the entire South Caucasus region.

¹² This network of companies was mentioned a few times by the various key informants as an interesting embryonic pre-cluster.

In general, the value added of the main sectors of the economy has gone through significant changes during the last few years. The key sectors in Kvemo Kartli, such as manufacturing, mining and quarrying as well as electricity, gas, steam and air conditioning supply, showed significant growth. The figure below shows the dynamics of the value-added by sectors in Kvemo Kartli.

Figure 9: Value added in Kvemo Kartli by economic activities, 2006-2017 (Mln GEL)



Source: GeoStat.

Value added in manufacturing has increased from about 143.3 mln. GEL in 2006 up to 406.4 mln. GEL in 2017. The retail trade sector value-added increased from about 78.9 mln. GEL up to 177.8 mln GEL in 2017 in the same period. The construction sector value-added increased from about 37.5 mln. GEL up to 209 mln GEL in 2017 in the same period.

The table below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Table 43: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forestry and fishing	103%	208%	76%	305%
Mining and Quarrying	150%	27%	54%	476%
Manufacturing	13%	128%	-10%	8%
Electricity, gas, steam and air conditioning supply	96%	12%	-22%	-58%
Water supply; Sewerage, Waste Management and Remediation Activities	58%	82%	-26%	136%
Construction	27%	133%	-1%	-25%
Wholesale and retail trade; repair of motor vehicles and motorcycles	126%	147%	63%	81%
Transportation and storage	128%	594%	99%	2600%
Accommodation and food service activities	266%	418%	56%	38%
Information and communication	25%	455%	47%	-42%

Real estate activities	138%	253%	159%	-
Professional, scientific and technical activities	-18%	367%	58%	-87%
Administrative and support service activities	-18%	213%	-7%	-100%
Education	158%	460%	18%	-88%
Human health and social work activities	233%	92%	74%	44%
Arts, entertainment and recreation	125%	-	91%	-100%
Other service activities	175%	500%	232%	-100%

Source: GeoStat.

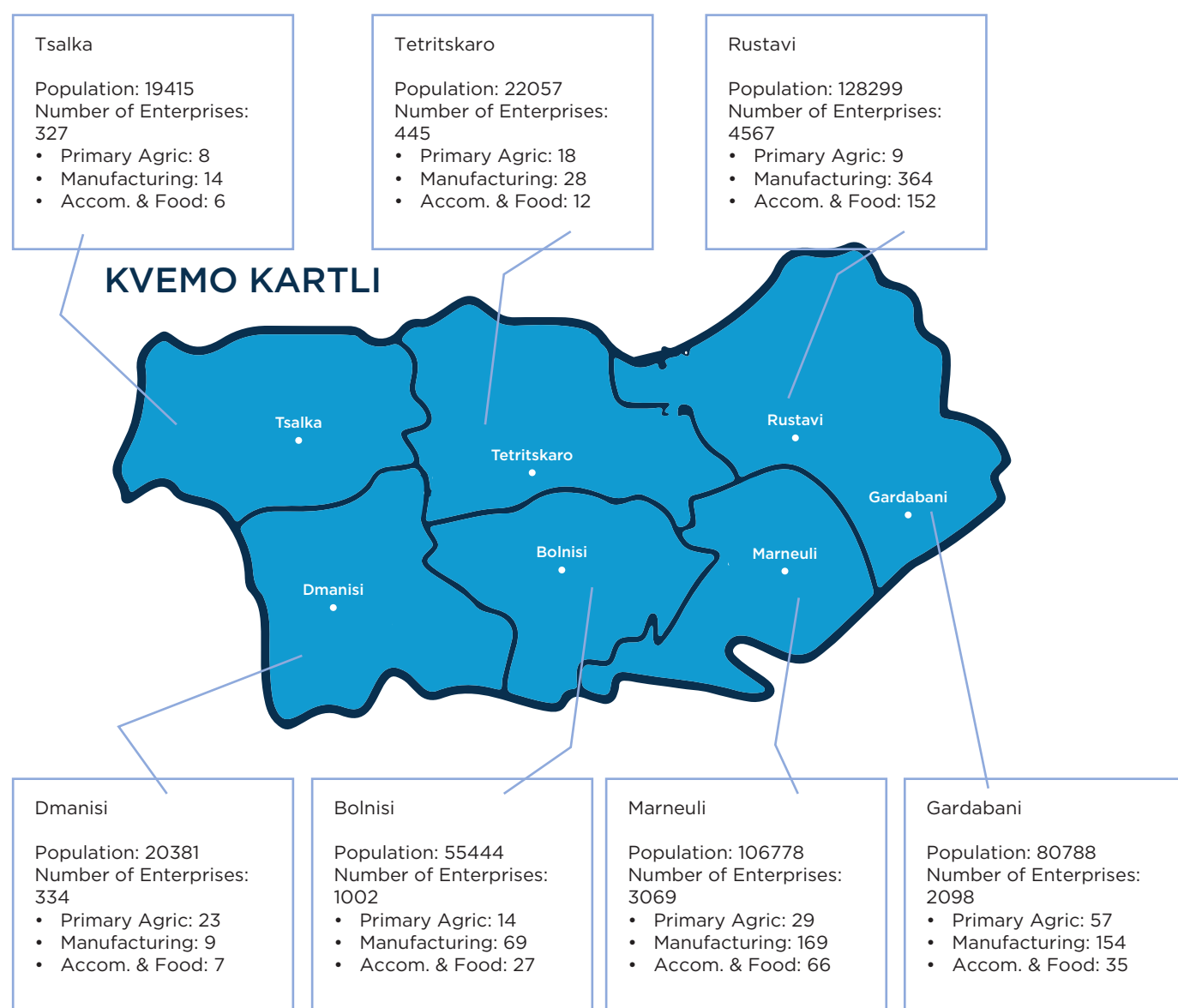
Over the past five years the industries which gained momentum in terms of value added were accommodation and food service activities (266 per cent growth), human health and social work activities (233 per cent growth), other service activities (175 per cent growth), education (158 per cent growth) and mining and quarrying (150 per cent growth).

In the past five years, the industries which gained momentum in terms of output were other service activities (500 per cent growth), transportation and storage (594 per cent), education (460 per cent), and information and communication (455 per cent).

In terms of employment figures, the leading sectors are Other service activities (232 per cent growth), real estate activities (159 per cent), transportation and storage (99 per cent).

Dynamic sectors in terms of investments in fixed assets are: transportation and storage (2,600 per cent growth), mining and quarrying (476 per cent), agriculture, forestry and fishing (305 per cent), water supply; sewerage, waste management and remediation activities (136 per cent).

Map 15: Administrative map of Kvemo Kartli with key figures



Source: GeoStat.

2.3.2 Past relevant studies

The table below summarizes the findings of the value-chains/clusters/sectors mentioned in the studies carried out in the past concerning Kvemo Kartli.

Table 44: The list of relevant studies

EXISTING VALUE CHAINS IN KVEMO KARTLI/BOLNISI	SOURCE
• Vegetables	• USAID, 2017
• Viticulture	• EU for Georgia/PMCG
• Broccoli	• Bolnisi Value Chain Assessment
• Berries	• EPI, 2011
• Wine	
• Agro-Industrial-logistics	
• Tourism	
• Construction Materials	
• Farm Service Centers	

Source: UNIDO.

The Kvemo Kartli development strategy has the following objectives for 2014-2021:

- promotion of manufacturing and products with export potential;
- tourism sector development;
- development of mining industry;
- SMEs development.

2.3.3 Regional Statistical Analysis

The top 20 sectors with the highest LQs (calculated based on estimated employment) were selected and excluded sub-groups with only one registered enterprise. Table 43 below shows the results of the analysis.

Similarly to previous analyses, sub-groups with highest the LQs include some of the service providers (sales of metals, cleaning activities, dismantling of wrecks). To avoid irrelevant sectors for the study, only relevant sub-groups were selected: manufacturing and primary agriculture-based on two criteria: 20 sub-groups with the highest LQs and 20 sub-groups with the highest number of registered enterprises (excluding sub-groups with LQs lower than 1.25). The overlap between these two groups is shown in Table 46.

Table 45: Top 20 Sectors by number of enterprises in Kvemo-Kartli (LQ more than 1,25)

NACE Code	Sectors	Employment	LQ	N of Enterprises
20.60	Manufacture of man-made fibres	5,70	15,72	2
32.11	Striking of coins	5,70	15,72	2
24.20	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	1332,13	14,73	3
20.15	Manufacture of fertilisers and nitrogen compounds	628,03	13,73	2
07.29	Mining of other non-ferrous metal ores	1253,20	12,51	3
28.22	Manufacture of lifting and handling equipment	87,37	11,92	3
19.20	Manufacture of refined petroleum products	90,32	11,68	4
02.10	Silviculture and other forestry activities	84,62	11,22	2
46.72	Wholesale of metals and metal ores	639,42	11,01	6
22.22	Manufacture of plastic packing goods	794,42	10,25	5
01.13	Growing of vegetables and melons, roots and tubers	729,75	9,25	10
23.52	Manufacture of lime and plaster	120,97	8,11	14
81.29	Other cleaning activities	636,58	6,83	5
10.11	Processing and preserving of meat	110,27	6,52	11
22.19	Manufacture of other rubber products	11,40	6,06	4
78.10	Activities of employment placement agencies	628,03	6,03	2
98.10	Undifferentiated goods-producing activities of private households for own use	5,70	5,05	2
35.11	Production of electricity	1425,30	5,02	8
38.32	Recovery of sorted materials	25,65	4,47	9
38.31	Dismantling of wrecks	5,70	4,02	2

Source: UNIDO

Table 46: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
20.60	Manufacture of man-made fibres	5,70	15,7	2	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	445,31	0,84	154
32.11	Striking of coins	5,70	15,7	2	22.23	Manufacture of builders' ware of plastic	202,33	1,25	71
24.20	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	1332,13	14,7	3	23.70	Cutting, shaping and finishing of stone	184,53	3,76	64
20.15	Manufacture of fertilisers and nitrogen compounds	628,03	13,7	2	31.09	Manufacture of other furniture	108,29	0,44	38
07.29	Mining of other non-ferrous metal ores	1253,20	12,5	3	23.61	Manufacture of concrete products for construction purposes	105,44	0,76	37
28.22	Manufacture of lifting and handling equipment	87,47	11,9	3	08.12	Operation of gravel and sand pits; mining of clays and kaolin	102,59	0,91	36
19.20	Manufacture of refined petroleum products	90,32	11,7	4	01.11	Growing of cereals (except rice), leguminous crops and oil seeds	79,09	2,94	27
02.10	Silviculture and other forestry activities	84,62	11,2	2	10.51	Operation of dairies and cheese making	67,69	0,53	23
22.22	Manufacture of plastic packing goods	794,42	10,3	5	33.12	Repair of machinery	51,29	0,66	18
01.13	Growing of vegetables and melons, roots and tubers	729,75	9,25	10	01.50	Mixed farming	45,59	2,44	16
23.52	Manufacture of lime and plaster	120,97	8,11	14	14.13	Manufacture of other outerwear	42,75	0,11	15
10.11	Processing and preserving of meat	110,27	6,52	11	23.52	Manufacture of lime and plaster	120,97	8,11	14
22.19	Manufacture of other rubber products	11,40	6,06	4	01.42	Raising of other cattle and buffaloes	39,90	3,34	14
35.11	Production of electricity	1425,30	5,02	8	01.47	Raising of poultry	276,67	1,96	14
20.13	Manufacture of other inorganic basic chemicals	84,62	4,01	2	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	37,05	1,6	13
23.70	Cutting, shaping and finishing of stone	184,53	3,76	64	33.14	Repair of electrical equipment	37,05	1,53	13
01.42	Raising of other cattle and buffaloes	39,90	3,34	14	23.51	Manufacture of cement	34,20	0,45	12
01.62	Support activities for animal production	25,65	3,13	9	10.13	Production of meat and poultry meat products	36,35	0,13	12
25.93	Manufacture of wire products, chain and springs	19,95	3	7	11.02	Manufacture of wine from grape	34,20	0,09	12
01.11	Growing of cereals (except rice), leguminous crops and oil seeds	79,09	2,94	27	10.11	Processing and preserving of meat	110,27	6,52	11
					14.19	Manufacture of other wearing grape apparel and accessories	31,35	1,6	11
					10.61	Manufacture of grain mill products	189,19	1,09	11

Source: UNIDO.

Table 47: Shortlisted sectors by number of enterprises in Kvemo-Kartli (LQ More Than 1,25, only agriculture and manufacturing)

NACE Code	Sectors	Employment	LQ	N of Enterprises
23.70	Cutting, shaping and finishing of stone	184,53	3,76	64
01.11	Growing of cereals (except rice), leguminous crops and oil seeds	79,09	2,94	27
23.52	Manufacture of lime and plaster	120,97	8,11	14
01.42	Raising of other cattle and buffaloes	39,90	3,34	14
10.11	Processing and preserving of meat	110,27	6,52	11

Source: UNIDO

After combining this statistical analysis with the information gathered during interviews and collected from available reports and studies, the sectors which ended up in the statistical analysis but were not found as interesting or important during key informant interviews or desk research were excluded from consideration were:

- Growing of cereals – This is a sector in primary agriculture which is out of the primary focus of this study. Furthermore, no significant competitive advantage or local resources were discovered and cannot be considered as distinctive or characteristic for the region. Besides, it has not been considered as a priority by local stakeholders as well. Therefore, it was excluded from further consideration.
- Manufacture of lime and plaster – This sector includes extracting of these materials (rather than manufacturing), which are non-renewable resources and as it has not been considered as a priority by local stakeholders either, it was excluded from further consideration.

Based on the research and analysis presented above, the following industry in multiple municipalities has been identified as potential clusters: 1) stone processing (mostly concentrated in Marneuli, Bolnisi), and 2) livestock, meat and dairy (mostly concentrated in Gardabani, Dmanisi, Tsalka).

2.3.4 Analysis of potential clusters

Stone Processing. This sector is mostly represented by Marneuli (29 enterprises) and Bolnisi (20 enterprises). All of them are categorized as small (although there is one Joint Stock Company – JSC Bolnisi Tuff among the enterprises). Distribution by municipalities and sizes is shown in the tables below.

Table 48: Distribution of number of enterprises by municipalities

Sector Name	Bolnisi	Dmanisi	Gardabani	Marneuli	Rustavi	Tetritskaro	Tsalka
Cutting, shaping and finishing of stone	20	2	4	29	5	4	0

Source: GeoStat.

Table 49: Distribution of number of enterprises in Kvemo-Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Cutting, shaping and finishing of stone	64	0	0	64	0%	0%	100%	185

Source: GeoStat; UNIDO.

The key resources in stones are basalt and tuff. Basalt production should be specially noted. It can be used to produce high-tech goods such as basalt fiber cord and reinforcement. In fact, in Rustavi a high technology company called Basalt Fibers already produces construction materials, reinforcement and cord from basalt. It should be noted that according to the Study of Economic Potential of Bolnisi Municipality, the stone sector has the potential to become the heart of the cluster of the construction materials in the region.¹³

According to informants, the key challenges of the stone producers are obsolete technologies and lack of modern knowledge, resulting in low-quality production (e.g. imprecise cutting), with the final product not meeting the specific market requirements. Only one company operates a more or less modern facility and produces acceptable quality products in the region.

Although there is no industry organization and formal cooperation among the producers, they sometimes exchange leads and orders if they run out of their own capacities.

Animals, Meat Processing, Dairy. This sector also showed some concentration in the region, which is home for the largest pig farm in Georgia, several cattle farms (Gardabani, Dmanisi, Tsalka municipalities) and also some large poultry farms, mainly in the Tetritskaro and Gardabani municipalities.

Of this group, only the poultry sector attracts attention to some extent. Notably, there are one large (Chirina Ltd), 3 medium-sized (Kumisi XXI Ltd, Savaneti 99 Ltd, Dilis Produktebi Ltd) and 11 small formally registered poultry farms in the region, one of the biggest concentrations in Georgia. Some of the mentioned poultry and poultry egg producers are united under the industry association, the Association of Poultry Producers, and

Table 50: Distribution of number of enterprises in Kvemo-Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Raising of Poultry	15	1	3	11	7%	20%	73%	277

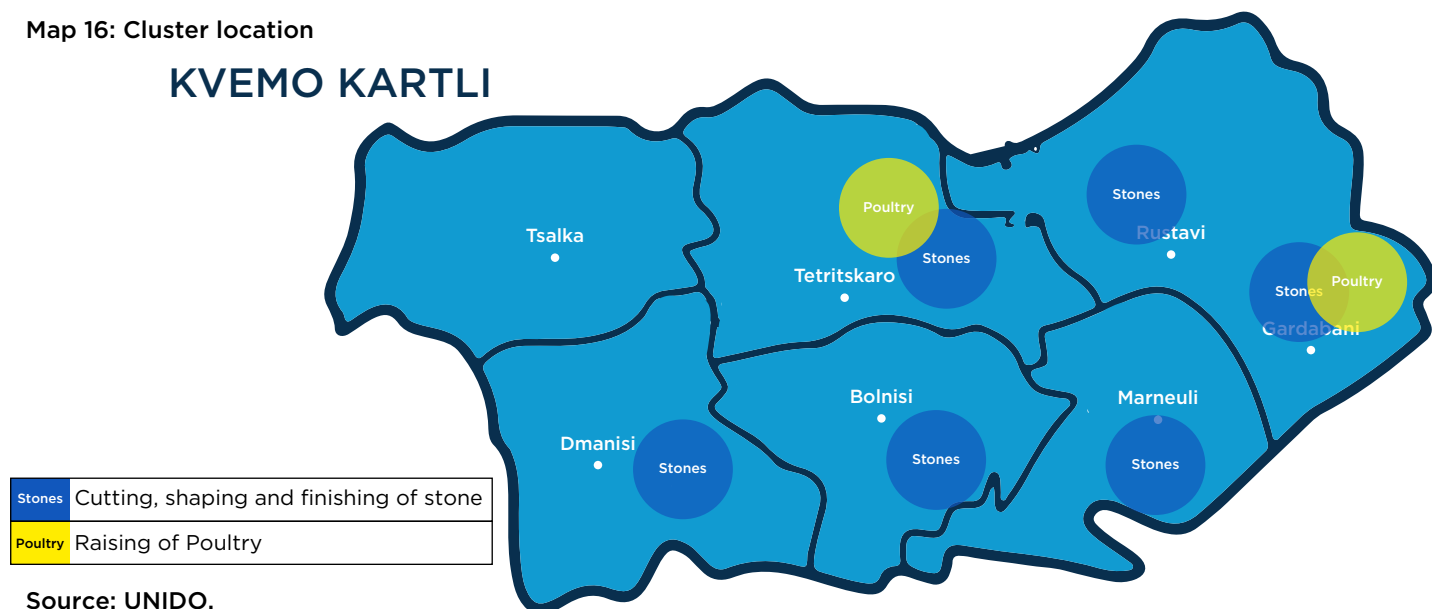
Source: GeoStat; UNIDO.

In terms of the cattle farms, most of the enterprises are small. There are only three pig producers, only one of which is medium-sized (ABD and Co JSC). In terms of dairy farming, four registered small entities are found in the region (e.g. Santa). No particular signs of cooperation were noticed in the mentioned sub-sectors.

¹³ Study of Economic Potential of Bolnisi Municipality, EU financed study for Bolnisi Municipality, 2018

Map 16: Cluster location

KVEMO KARTLI



Source: UNIDO.

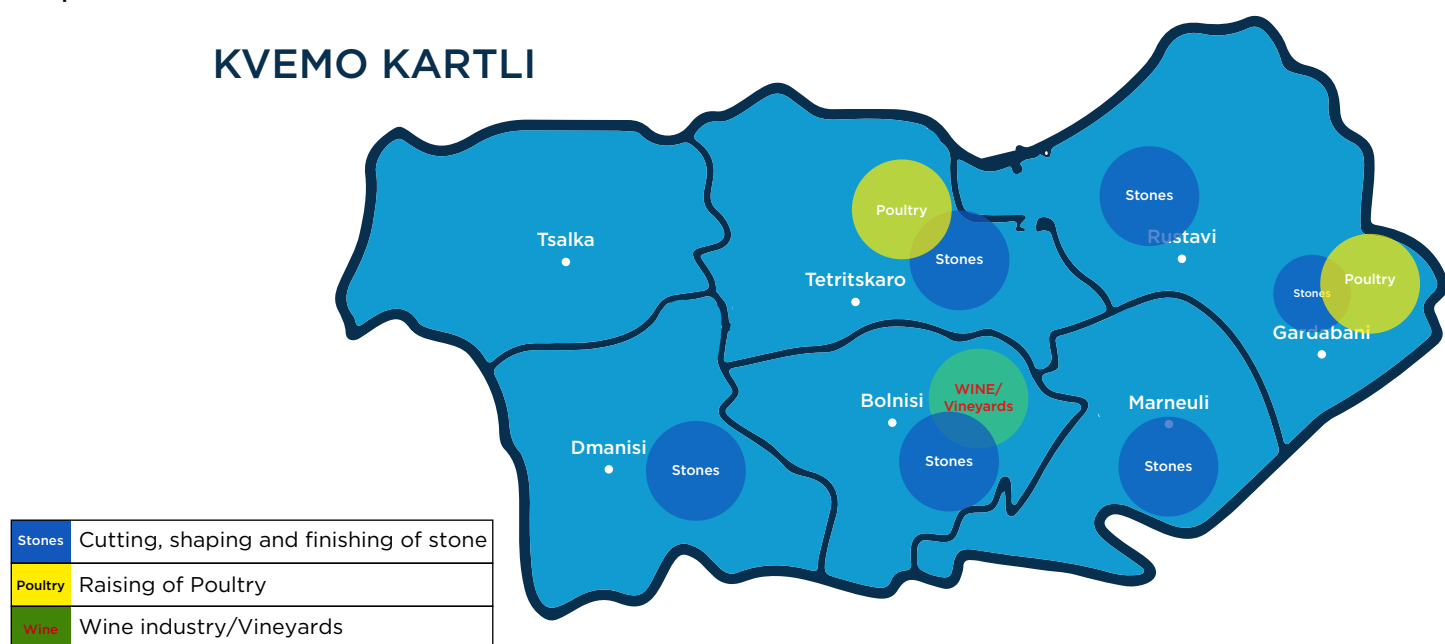
2.3.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, wine production (Bolnisi) was found to be noteworthy but did not end up in the statistical analysis (due to either lack of official statistics of the sector or relatively low employment).

Wine Production (Bolnisi). This emerging cluster was found through interviews with key informants. Due to the small number of winemakers, compared to other regions (e.g., Kakheti), a regional statistical analysis could not capture this cluster. Although very small, this sector was found as particularly suitable for the definition of an emerging cluster and was included in the shortlist for that reason. This sector, which is mostly concentrated in Bolnisi, unites up to five registered and up to 20 not-yet registered small wine producers, who have formalized their cooperation around the appellation of origin and organize joint events. This was one of the rare cases where self-organized cluster activities were revealed.

Map 17: Cluster location

KVEMO KARTLI



Source: UNIDO.

2.4 Overview of Mtskheta Mtianeti and its clusters

2.4.1 Overview of the region and its economy

Mtskheta-Mtianeti is a region in eastern Georgia with its capital in Mtskheta. It has five municipalities: Akhlagori, Dusheti, Tianeti, Mtskheta and Kazbegi. The region covers 6,786 square meters and has a population of 93,600.

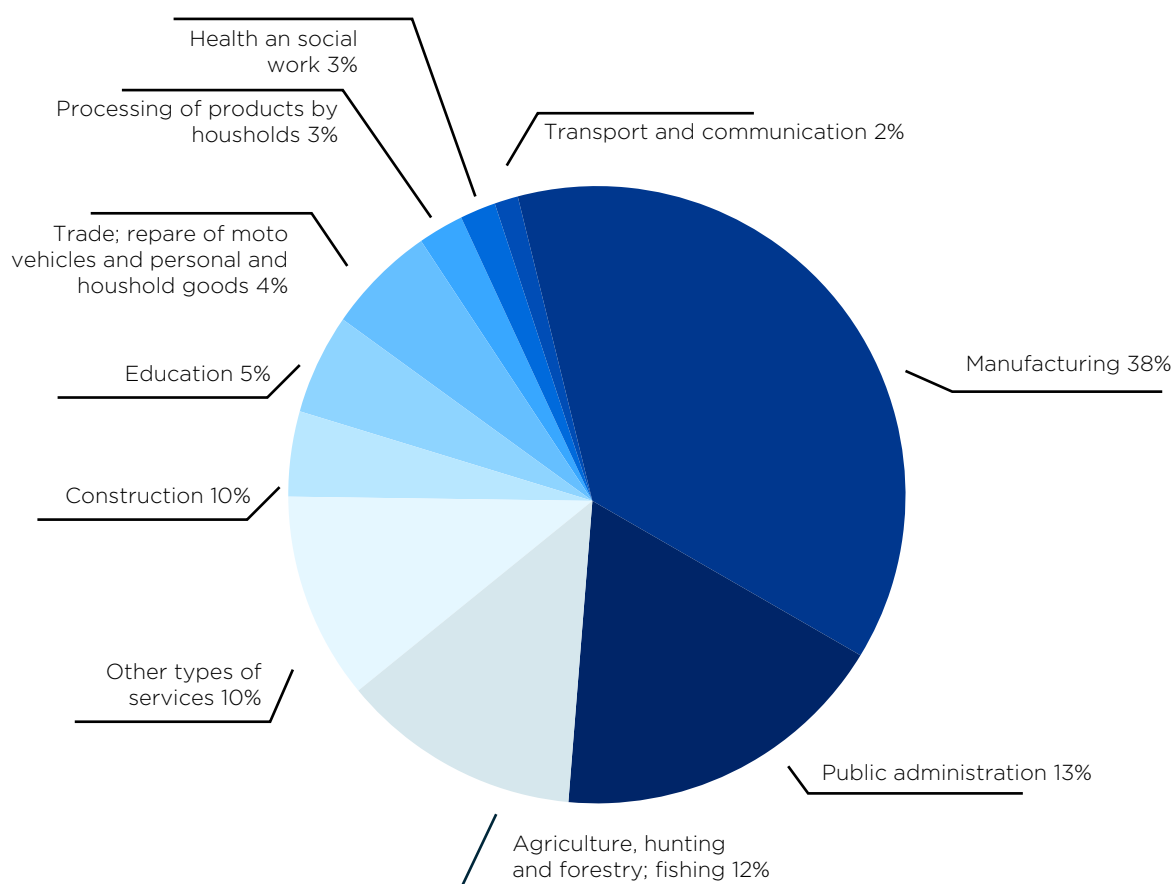
Table 51: Employment data

INDICATOR	MTSKHETA MTIANETI	GEORGIA
Unemployment Rate	9.7 %	12.7 %
Economic activity Rate	71 %	63.9 %
Employment Rate	64.1 %	55.8 %

Source: GeoStat.

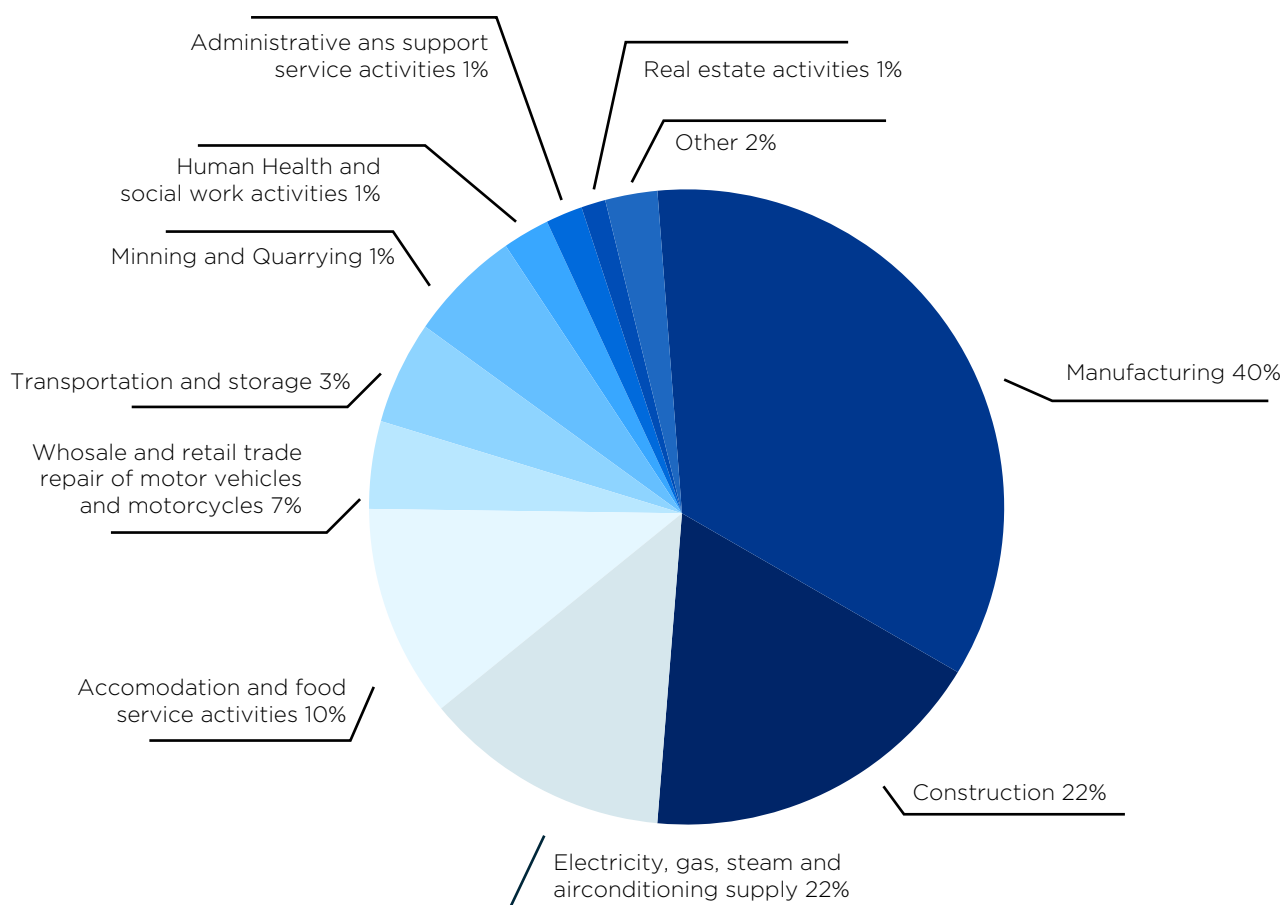
According to the Regional Development Strategy, the industrial sector has the highest share in the regional GDP, followed by agriculture and construction. Among industrial companies, the most significant contributors are the beer companies Natakhtari and Zedazeni, Aqua Geo, Chateau Mukhrani, Ksani Glass Factory and Barambo. A new beer producer, Global Beer Georgia, was established very recently (2018) in the vicinity of existing beverage producers in the Natakhtari cluster.

Figure 10: Regional GDP by economic activities, 2017



Source: GeoStat.

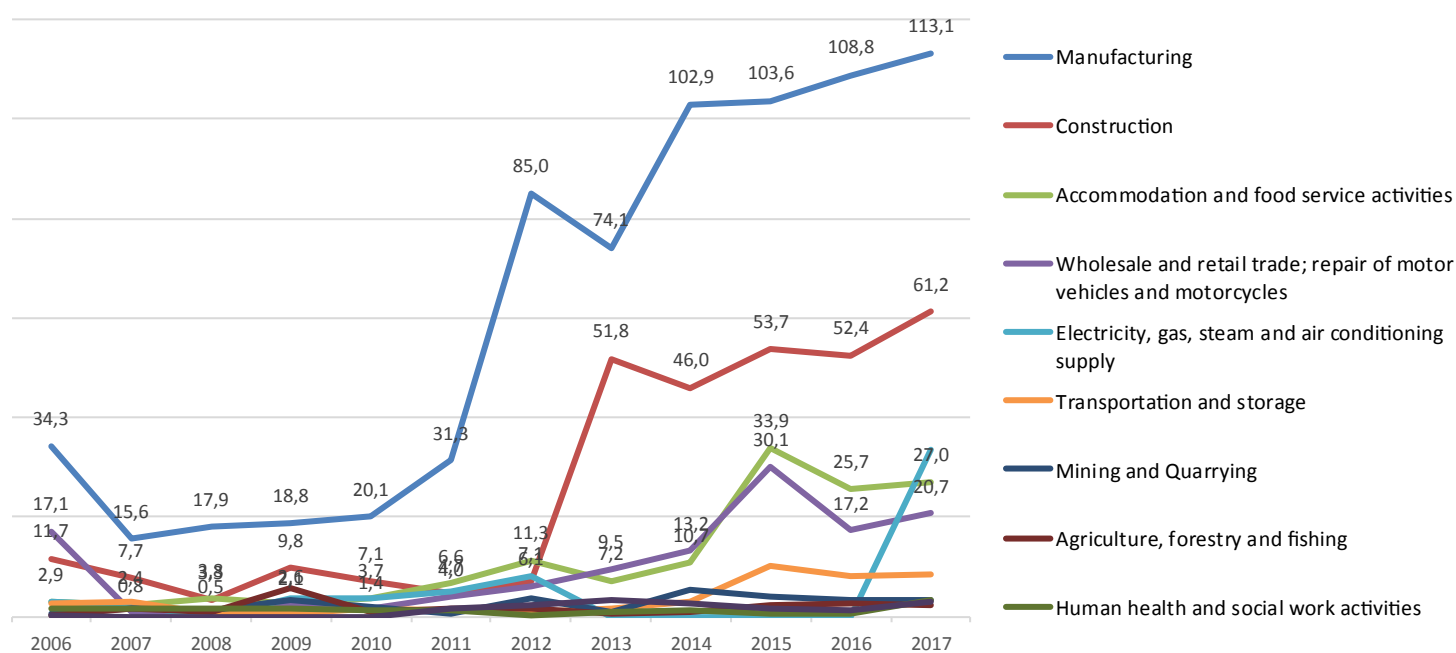
Figure 11: Regional value added by economic activities, 2017



Source: GeoStat.

The key sectors in Mtskheta-Mtianeti such as manufacturing, construction and accommodation and food service activities showed significant growth in value added recently. The figure below shows the dynamics of the value added by sectors in Mtskheta-Mtianeti region.

Figure 12: Value Added in Mtskheta-Mtianeti by economic activities, 2006-2017 (Mln GEL)



Source: GeoStat.

Value added in manufacturing has increased from about 34.3 mln GEL in 2006 up to 113.1 mln. GEL in 2017. Value added in the construction sector increased from about 11.7 mln GEL up to 61.2 mln GEL in 2017 in the same period. The accommodation and food service activities sector value added increased from about 2.9 mln GEL up to 27 mln GEL in the same period.

Table 52 below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017, as a percentage of growth compared to the base period (2012).

Table 52: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forestry and fishing	50%	6%	-51%	-
Mining and Quarrying	-6%	40%	6%	60%
Manufacturing	33%	51%	60%	55%
Electricity, gas, steam and air conditioning supply	320%	263%	-79%	-75%
Water supply; Sewerage, Waste Management and Remediation Activities	-22%	-25%	-70%	-59%
Construction	762%	592%	96%	4050%
Wholesale and retail trade; repair of motor vehicles and motorcycles	239%	249%	183%	-80%
Transportation and storage	975%	1031%	314%	6300%
Accommodation and food service activities	139%	141%	8%	16%
Information and communication	-	-	-	-
Real estate activities	400%	93%	264%	-100%
Professional, scientific and technical activities	400%	383%	50%	-
Administrative and support service activities	22%	148%	-1%	500%
Education	-100%	0%	26%	-
Human health and social work activities	1600%	1233%	317%	-
Arts, entertainment and recreation	450%	750%	505%	-
Other service activities	-	-	-	-

Source: GeoStat.

In the past five years, the industries which gained momentum in terms of value added were human health and social work activities (about 1,600 per cent growth), transportation and storage (with about 975 per cent growth of value added), construction (762 per cent), arts, entertainment and recreation (450 per cent), real estate activities (400 per cent) and professional, scientific and technical activities (400 per cent).

Almost the same pattern is detectable in terms of output. In terms of employment figures, the leading sectors are arts, entertainment and recreation (with 505 per cent growth), human health and social work activities (317 per cent) and transportation and storage (314 per cent). Other sectors such as mining and quarrying, manufacturing, construction, retail trade, accommodation and food service activities, real estate activities, professional, scientific and technical activities and education come next.

Dynamic sectors in terms of investments in fixed assets are transportation and storage (6,300 per cent growth), construction (4,050 per cent growth) and administrative and support service activities (500 per cent growth).

Mtskheta-Mtianeti is one of the least-developed regions in Georgia in terms of the number of active enterprises. The close proximity of the Mtskheta-Natakhtari administrative unit to the capital city makes it possible to develop this part into a complementary extension of the city industrial activity, whereas the more remote parts of the region stagnate because of relative distance from such a center of gravity.

According to key informant interviews, the Kazbegi municipality has two centers of economic activity: Stepantsminda and Gudauri.¹⁴ Moreover, their single and distinct key profile is tourism. Two distinctive features of Stepantsminda are its proximity to the state border with the Russian Federation and its natural touristic attraction of the Mkinvartsveri peak, with a height of 5,000 meters. Gudauri is the most popular Georgian mountain resort, which so far has only seasonal characteristics because of the snow.

Stemming from the above-mentioned, the municipality has a distinct tourism profile. In terms of the number of companies in the municipalities, the majority of the active companies are in accommodation and food. According to the local farm census, in 2015 the total number of farm holdings in the municipality was 110, out of which 53 were in livestock farming, 25 beekeeping, 25 in vegetables, four in berries and two in fishery. It is important to note that these are smallholders and they are not registered as legal entities, so are not reflected in the official statistics. The total annual value added to the municipality was 55 mln GEL in 2015.

Besides tourism, in terms of cluster development, some local mineral resources represent another unexplored potential. There are two entities in the region that produce carbon industrial gas. Some of the other interesting areas to explore are copper (Kazbegi), polyolons (the Asa and Kazbegi rivers), andesite (the Tergi river), quartzites (Stepantsminda), building materials (Georgian military road and Pshav-Khevsureti), mountain crystal (Stepantsminda) and diabase (the villages of Juta and Roshki).

There are no cluster organizations in either of the above-mentioned enterprise concentrations (Stepantsminda and Gudauri).

The Dusheti municipality is a bit more developed than Kazbegi municipality towards primary agriculture and manufacturing. Although, here, as in Kazbegi, the biggest number of enterprises are in the accommodation and food industry. It should be noted that Dusheti municipality spans towards north and covers part of Gudauri touristic agglomeration. Restaurants and small cafes offering food services are all along the Military Road and comprise another large part of the registered enterprises in the region.

Prevailing practices in primary agriculture includes cattle farming for producing meat. However, most producers are not registered as enterprises and lead the business under the informal sector. This type of production also could be coupled with the meat processing production in the neighboring Mtskheta municipality, with the leading meat processing facility Liderfood.

Another small concentration of about five or so companies is in forestry which, reportedly, includes several enterprises owned by Chinese investors who lease the forests and produce and process the wood material.

¹⁴ It should also be noted that part of Gudauri belongs to Dusheti municipality.

Other notable areas are water (Vaja's Water bottling company, which could be considered as an extension to the water cluster in Natakhtari) and vegetables. In terms of resources, the biggest perceived potential is tourism driven by the untouched natural beauty and the cultural heritage of the region, particularly the Truso valley and Khevsureti.

The Tianeti municipality is the least active in the region. The key agriculture activities are perennial fruits, walnuts and berries. The wool factory at present produces wool cords in limited quantities. The total value added by business in Tianeti in 2015 was about 1.8 mln GEL. In the target three sectors there is a total of 17 enterprises, out of which only one is in primary agriculture and five enterprises are in the accommodation and food sector.

The Mtskheta municipality is the economic and administrative center of the region with a significantly higher number of large manufacturing companies compared to other municipalities. As in almost all other municipalities, trade is most developed business sector, followed by manufacturing and tourism. The key agriculture profile is livestock farming. Out of 97 farm holdings in the municipality, 27 are in livestock farming, 16 in beekeeping, 14 in crops and five in greenhouses. In terms of poultry farming, there are about four (one big and three smaller) poultry farms and about nine poultry slaughterhouses. In terms of crops, vineyards make up the biggest portion. The total value added of the region in 2015 was 141.4 mln GEL.

In terms of primary agriculture, of notable interest is poultry farming in Mukhrani. The concentration is led by the IE Nozadze Gantiadi chicken farm. Several smaller chicken growers have been established in its vicinity. There are periodic farmers' markets for live poultry in the settlement hosting customers from Tbilisi and other regions. In the area of agriculture, there are five vegetable storage and processing facilities in the region.

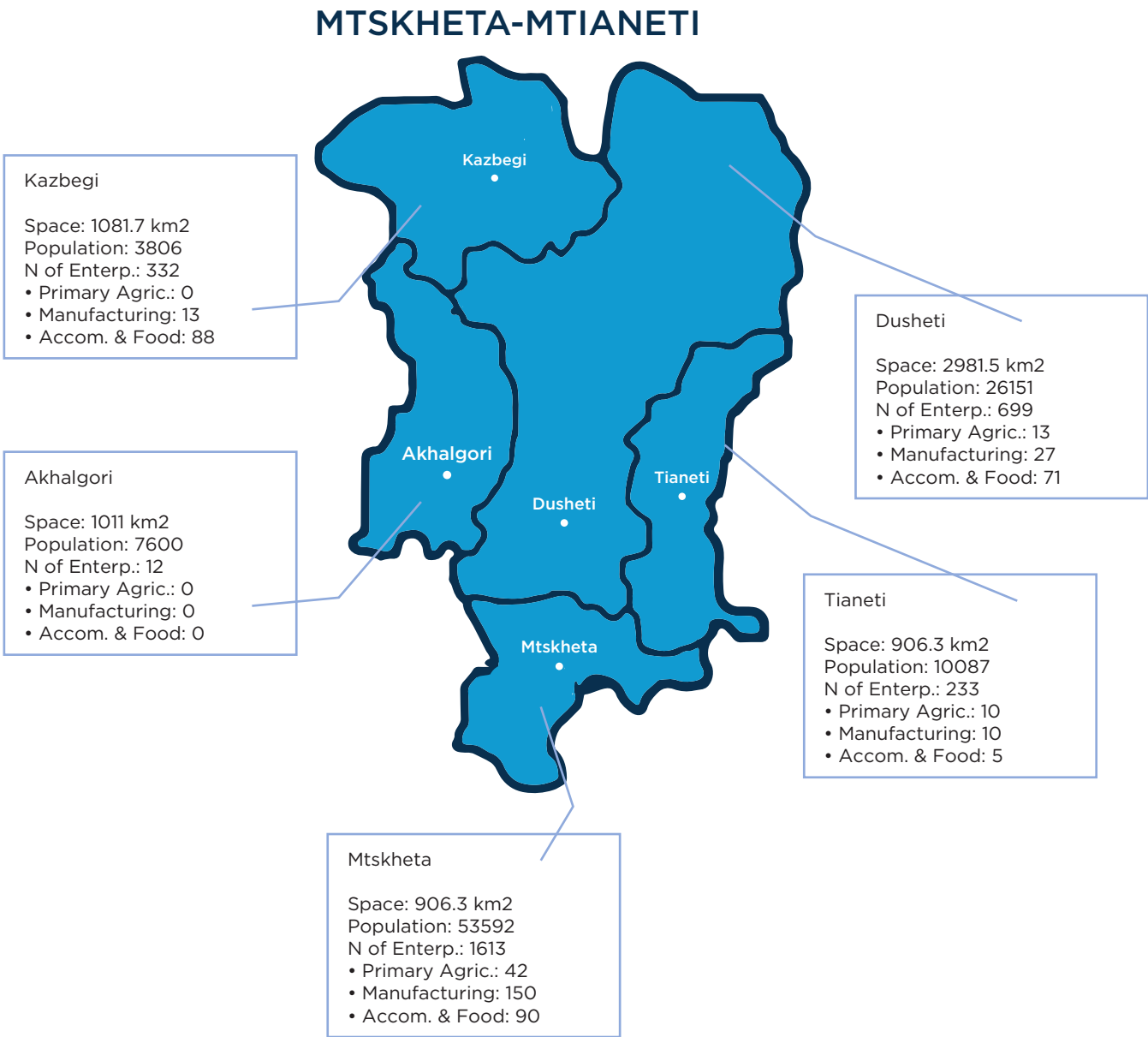
Another signature industry for the Mtskheta municipality is beverages, which includes the four largest Georgian industrial beer producers (Natakhtari, Zedazeni, Global Beer Georgia and Shavi Lomi) and one large water producer (Aqua Geo). A newly developed Coca-Cola factory is also located in the region. The abundance of water resources in the valley, as well as its proximity to the capital city, puts this region in a unique advantage to develop a beverage industry cluster. However, according to key-informant interviews, there is intensive rivalry and almost no cooperation between the key players.

The meat processing sector is also well represented in the municipality. The Mtskheta-Natakhtari agglomeration hosts one of the largest meat processing factories in Georgia, the LiderFood (formerly Zeikidze) factory. Although there are two other smaller meat product processors, there is no evidence of cluster cooperation in this regard.

The restaurant sector is one of the most developed sectors for the municipality, with 88 food and accommodation enterprises in the region, mostly concentrated around the city of Mtskheta or near the Natakhtari road. These two concentrations have clear positioning as out-of-the city breaks for the population of Tbilisi (mostly Natakhtari restaurants) or events (Mtskheta).

In terms of other cluster potential, Mtskheta has unique importance in terms of cultural heritage and religious tourism as the old capital of Georgia and home of unique religious artifacts. The regional climate, mineral waters and historical monuments also create potential for tourism development. In this regard, Mtskheta and Kazbegi municipalities are the fastest growing parts of the region with many ongoing infrastructural projects.

Map 18: Administrative map of the region



Source: GeoStat.

2.4.2 Past relevant studies

Past studies available to us do not include much information about Mtskheta-Mtianeti value chains. There are only few studies that include the region and all of them are in the context of tourism.

Table 53: The list of relevant studies

EXISTING VALUE CHAINS IN MTSKEHTA-MTIANETI	SOURCE
• Tourism – Hiking	• World Bank, 2017
• Tourism – Wine and Souvenir Shops	• EPI, 2011
• Tourism – General	• USAID, 2017
• Typical food/terroir products	• Inventorying of Typical Food/ Terroir Products in Tusheti and Mtskheta-Mtianeti, UNIDO, 2019

Source: UNIDO.

The table below summarizes all economic sectors (currently developed or with development potential) highlighted in the regional development plan.

Table 54: The list of priority sectors identified by development plan

AGRICULTURE	MANUFACTURING	SERVICE PROVIDERS/FOOD AND ACCOMMODATION
<ul style="list-style-type: none"> • Vegetables <ul style="list-style-type: none"> • Tomatoes • Cabbage • Onions • Potatoes • Fish • Greenhouses • Honey 	<ul style="list-style-type: none"> • Wine • Mineral Resources: <ul style="list-style-type: none"> • Copper • Polyolons • Andesite • Quartzites • Building Materials • Mountain Crystal • Diabase • Meat and Poultry 	<ul style="list-style-type: none"> • Tourism

Source: Mtskheta Mtianeti Regional Development Plan 2014-2021.

Mtskheta-Mtianeti development strategy states the following objectives for 2014-2021:

- promotion of wild medical and aromatic plants, forest products (fruits, berries, healing plants);
- green business development;
- development of fruit processing;
- promotion of construction materials production, based on resources in Mtskheta and Dusheti municipalities;

2.4.3 Regional statistical analysis

The top 20 sectors with highest LQs were identified, where service providers make up half of the list. Table 55 below shows results of the analysis.

Service providers such as construction of bridges and water projects, wholesale of plants, food, beverages and tobacco, financial services and healthcare play a big part in region's economy. The Mtskheta-Mtianeti region has highest number of service providers among top LQ companies compared to other regions. However, for this study, such sectors were discarded from further analysis. The overlap among sub-groups with the highest LQ and highest number of enterprises were selected for final consideration. Table 58 below shows analysis and final results.

After combining this statistical analysis with information presented during interviews and collected from available reports and studies, no potential cluster has been identified. Based on the research and analysis presented above, only beer manufacturing was selected as an exciting sector. Manufacturing of not only beer but also other beverages is one of the few sectors developed in the region. These are large beer producers and producers of bottled water and carbonated soft drinks. The key reasons for such a concentration are a) water springs in the Natakhtari basin; b) proximity to the capital city. Due to intensive rivalry, there is a very low cooperation potential and further analysis as a cluster does not look promising.

Table 55: Top 20 Sectors by number of enterprises in Mtskheta-Mtianeti (LQ more than 1,25)

NACE Code	Sectors	Employment	LQ	N of Enterprises
11.05	Manufacture of beer	1351,50	35,26	3
64.00	Financial service activities, except insurance and pension	110,46	16,06	2
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	453,27	8,46	2
42.13	Construction of bridges and tunnels	218,15	7,41	3
23.41	Manufacture of ceramic household and ornamental articles	5,54	6,28	2
84.12	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	116,00	6,15	4
42.91	Construction of water projects	110,46	5,81	2
23.51	Manufacture of cement	113,23	5,64	3
31.02	Manufacture of kitchen furniture	11,08	5,32	4
46.30	Wholesale of food, beverages and tobacco	13,85	5,32	5
20.11	Manufacture of industrial gases	5,54	5,28	2
43.11	Site preparation	27,22	3,77	9
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	22,17	3,60	8
85.32	Technical and vocational secondary education	113,23	3,58	3
03.22	Freshwater aquaculture	8,31	3,58	3
65.31	Wholesale trade of motor vehicle parts and accessories	116,00	3,49	4
10.51	Operation of dairies and cheese making	113,23	3,34	3
46.22	Wholesale of flowers and plants	8,31	3,09	3
86.00	Human health activities	11,08	3,04	4
47.99	Other retail sale not in stores, stalls or markets	16,62	2,97	6

Source: UNIDO

Several sectors were identified in Mtskheta-Mtianeti, based on mostly desk research and interviews with key informants.

The beverages sector has about 11 companies, mostly in the Natakhtari area. These are large beer producers and producers of bottled water and carbonated soft drinks. The key reasons for such a concentration are a) water springs in the Natakhtari basin; b) proximity to the capital city. Due to intensive rivalry, there is a very low cooperation potential.

Additional relevant sectors which were mentioned by key informants or found during desk research was the tourism-related sector in Kazbegi and Gudauri. There are up to 80 hotels and hotel-type accommodations formally registered in the Kazbegi and Dusheti municipalities combined. Due to this, the irrelevance of this sector to this study, tourism activities were excluded from consideration.

The UNIDO conducted an inventory of typical food/terroir products in Mtskheta-Mtianeti administrative and Tusheti historical regions and identified several dairy-related terroir products in Mtskheta-Mtianeti region, such as local cheese varieties (e.g., Kalti, Chogi, Sakhduri, Guda, Tushuri Guda, Dambalkhacho, Nadughara, Khacho), meat (e.g., Kaghi, Shignita, Tsmeli) and beer (Aludi and Askiludi).¹⁵ However, since all of these products are produced in small quantities and are not usually formally registered, these products or sectors are not further analyzed. Desk research or interviews did not show any interesting sectors with cluster potential that was not already covered by statistical analysis.

Table 56: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
11.05	Manufacture of beer	1351,50	35,26	3	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	113,12	0,8	40
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	453,27	8,46	2	23.61	Manufacture of concrete products for construction purposes	77,58	2,1	28
23.41	Manufacture of ceramic household and ornamental articles	5,54	6,28	2	08.12	Operation of gravel and sand pits; mining of clays and kaolin	47,10	1,56	17
23.51	Manufacture of cement	113,23	5,64	3	31.09	Manufacture of other furniture	33,25	0,51	12
31.02	Manufacture of kitchen furniture	11,08	5,32	4	02.20	Logging	27,71	5,09	10
20.11	Manufacture of industrial gases	5,54	5,28	2	22.23	Manufacture of builders' ware of plastic	27,71	0,64	10
01.20	Logging	27,71	5,09	10	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	22,17	3,6	8
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	22,17	3,60	8	01.47	Raising of poultry	22,17	0,59	8
03.22	Freshwater aquaculture	8,31	3,58	3	01.13	Growing of vegetables and melons, roots and tubers	13,85	0,66	5
10.51	Operation of dairies and cheese making	113,23	3,34	3	31.02	Manufacture of kitchen furniture	11,08	5,32	4
10.85	Manufacture of prepared meals and dishes	8,31	2,83	3					

¹⁵ Inventorying of Typical Food/Terroir Products in Tusheti and Mtskheta-Mtianeti, UNIDO, 2019

10.91	Manufacture of prepared feeds for farm animals	5,54	2,71	2	10.11	Processing and preserving of meat	11,08	2,46	4
10.11	Processing and preserving of meat	11,08	2,46	4	01.50	Mixed farming	11,08	2,22	4
32.99	Other manufacturing n.e.c.	5,54	2,34	2	11.02	Manufacture of wine from grape	116,00	1,09	4
01.50	Mixed farming	11,08	2,22	4	16.23	Manufacture of other builders' carpentry and joinery	11,08	0,99	4
10.32	Manufacture of fruit and vegetable juice	5,54	2,12	2	10.13	Production of meat and poultry meat products	11,08	0,15	4
23.61	Manufacture of concrete products for construction purposes	77,58	2,10	28	11.05	Manufacture of beer	1351,50	35,3	3
01.49	Raising of other animals	5,54	1,78	2	23.51	Manufacture of cement	113,23	5,64	3
16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	5,54	1,76	2	03.22	Freshwater aquaculture	8,31	3,58	3
01.42	Raising of poultry	5,54	1,74	2	10.51	Operation of dairies and cheese making	113,23	3,34	3
					10.85	Manufacture of prepared meals and dishes	8,31	2,83	3
					33.14	Repair of electrical equipment	8,31	1,29	3
					01.11	Growing of cereals (except rice), leguminous crops and oil seeds	8,31	1,16	3
					10.83	Processing of tea and coffee	8,31	0,88	3
					33.12	Repair of machinery	8,31	0,4	3
					10.39	Other processing and preserving of fruit and vegetables	8,31	0,32	3
					23.63	Manufacture of ready-mixed concrete	8,31	0,27	3
					01.61	Support activities for crop production	8,31	0,25	3

Source: UNIDO

Table 57: Shortlisted sectors by number of enterprises in Mtskheta-Mtianeti (LQ more than 1.25, only agriculture and manufacturing)

NACE Code	Sectors	Employment	LQ	N of Enterprises
23.61	Manufacture of concrete products for construction purposes	77,58	2,10	28
02.20	Logging	27,71	5,09	10
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	22,17	3,60	8
31.02	Manufacture of kitchen furniture	11,08	5,32	4
10.11	Processing and preserving of meat	11,08	2,46	4
01.50	Mixed farming	11,08	2,22	4
11.05	Manufacture of beer	1351,50	35,26	3
23.51	Manufacture of cement	113,23	5,64	3
03.22	Freshwater aquaculture	8,31	3,58	3
10.51	Operation of dairies and cheese making	113,23	3,34	3
10.85	Manufacture of prepared meals and dishes	8,31	2,83	3

Source: UNIDO

As Mtskheta-Mtianeti's economy is less developed in Georgia (with only one active sector, the manufacture of beverages), applying same statistical methodology (choosing top 20 sectors) ended up with either very small sectors (with only three or four registered companies and with insignificant value added to the economy and hence limited opportunity for cluster formation) on the one hand.

On the other hand, there were sectors that have had higher number of enterprises (eight to 28). These sectors were the manufacture of concrete products for construction, logging and quarrying of ornamental and building stone. However, none of these sectors were found or confirmed by local key stakeholders as being distinctive industry or having high priority or potential for cluster formation for the region.

Therefore, all these sectors were excluded from further analysis.

Beer manufacturing is the only interesting sector, considering it as a part of the broader beverage sector of the region. Registered enterprises under beverage production in Mtskheta-Mtianeti are large beer producers and producers of bottled water and carbonated soft drinks. The key reasons for such a concentration are a) water springs in the Natakhtari basin; b) proximity to the capital city. These companies are quite large and have relatively large numbers of employments. However, due to intensive rivalry, there is a very low cooperation potential and are not considered for further analysis.

2.5 Overview of Shida Kartli and its clusters

2.5.1 Overview of the region and its economy

The region of Shida Kartli lies in a middle section of lowland between the Greater and Lesser Caucasian mountain range in East Georgia. The region includes nine administrative-territorial entities: one city – Tskhinvali – and eight municipalities: Gori, Kaspi, Kareli, Khashuri, Tigvi, Eredvi, Kurta and Javi.

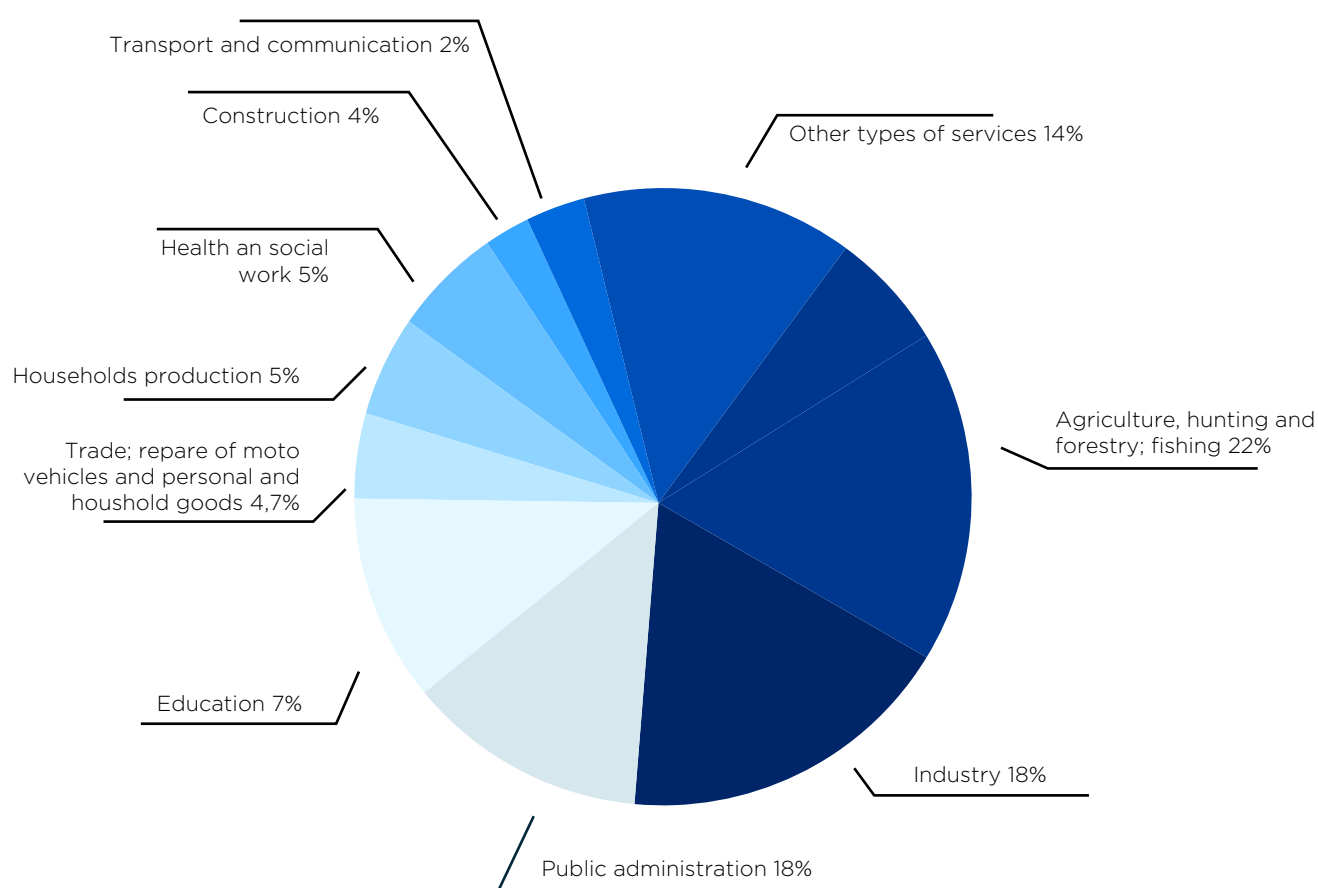
Four municipalities are located in the territory controlled by the Georgian government, with 372 settlements out of which four are cities (Gori, Kaspi, Kareli, Khashuri), two are townships (Surami, Agara) and 366 are villages. The overall area of the region is 3,428.3 km².

In terms of population, Shida Kartli includes 6.9 per cent of the country's population (257,279 people) with a density of 75.0 people per km². Up to 40 percent of the region's population live in urban districts, while 60 per cent live in rural areas.

With regards to economic performance of the region, Shida Kartli generates around 3.5 per cent of the country's GDP. If we compare the structure of GDP for Shida Kartli and in Georgia in overall, a significant difference can be observed. Specifically, while agriculture and industry are the top-performing sectors for Shida Kartli region, creating 40 per cent of the total value added of the region, in Georgia overall the trade sector has the largest share (17.1 per cent) followed by industry (16.8 percent).

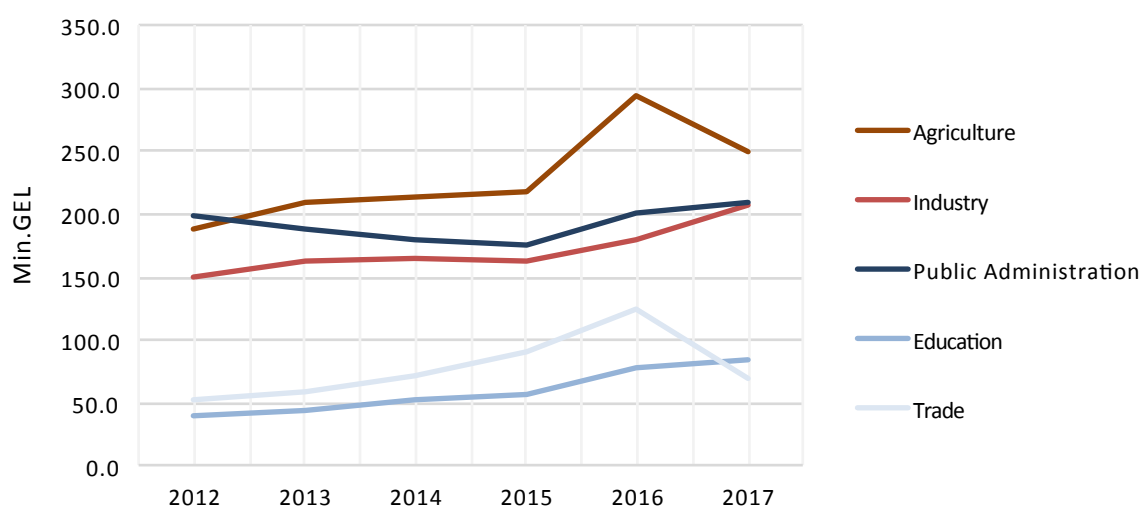
Since 2013, agriculture has been the largest sector in Shida Kartli's economy, but the sector experienced a different pattern during this period. Specifically, between 2013 and 2015 the value added in agriculture mostly remained the same while in 2016 a substantial growth is observed (35.6 per cent). Then, the sector went down but still remained a leading sector. Similar to agriculture, the industry sector is characterized by the plateau and growth periods. A considerable increase was recorded in 2017. Although public administration was the largest sector in Shida Kartli's economy in 2012, this sector experienced a significant reduction in the 2012-2015 period, and after a slight increase it finally ended up as the third largest sector in 2017. In both education and trade the trend was positive.

Figure 13: Regional GDP by economic activities, 2017



Source: GeoStat.

Figure 14: Dynamic of GDP by economic activities, 2012-2017 ¹⁶



Source: GeoStat.

According to the latest data from the business registry, around 8,415 active companies are located in the Shida Kartli region. Fourteen of them are categorized as large enterprises, while 82 are medium sized and 8,234 are small. The largest portion of the companies are found in Gori (3,934 or 46.7 per cent), followed by Khashuri with 2,253 enterprises. The lowest number of companies is in Akhlagori, which only 18 has of them.

Data on business demographics shows that in Shida Kartli the birth rate of companies was 19.1 per cent in 2017 which is just under the country average (19.7 percent). During the 2014-2017 period, no significant difference was observed between Shida Kartli and Georgia in terms of enterprise birth. With regard to company death statistics, the difference is more noticeable. Interestingly, the death rate in Shida Kartli is much smaller than country average.

Table 58: Employment data

INDICATOR	SHIDA KARTLI	GEORGIA
UNEMPLOYMENT RATE	14.5 %	12.7 %
ECONOMIC ACTIVITY RATE	60.9 %	63.9 %
EMPLOYMENT RATE	52.1%	55.8 %

Source: GeoStat.

It is clearly observed that in Shida Kartli the rate of unemployment is much higher than the country average: 14.5 per cent (Table 58). Furthermore, employment and economic activity rates in Shida Kartli are much lower than for Georgia.

The share in Shida Kartli of the total business sector employment is about 2.6 per cent. Trade is the sector with highest employment in Shida Kartli. Around 30.7 per cent of business sector employment goes to trade sector. The second-largest sector in terms of employment is manufacturing with 23.3 per cent, followed by construction (11.7 per cent) and health & social care (10.5 per cent.). Of the total business sector employment, 5.1 per cent is in the agriculture sector.

¹⁶ The data about GDP by sector for Shida Kartli region is available only for 2017. For earlier period the region in combined with Mtsketa-Mtianeti. In order to construct data for solely Shida Kartli region, the share of Shida Kartli in combined region has been used

The largest increase in employment recorded is in mining industry (40 per cent). It should be mentioned as well that even though the share of agriculture in regional employment is only 5.1 per cent, the sector experienced 23 per cent growth during 2012-17, on average. It is also worth mentioning that average growth rate of employment in manufacturing sector is negative.

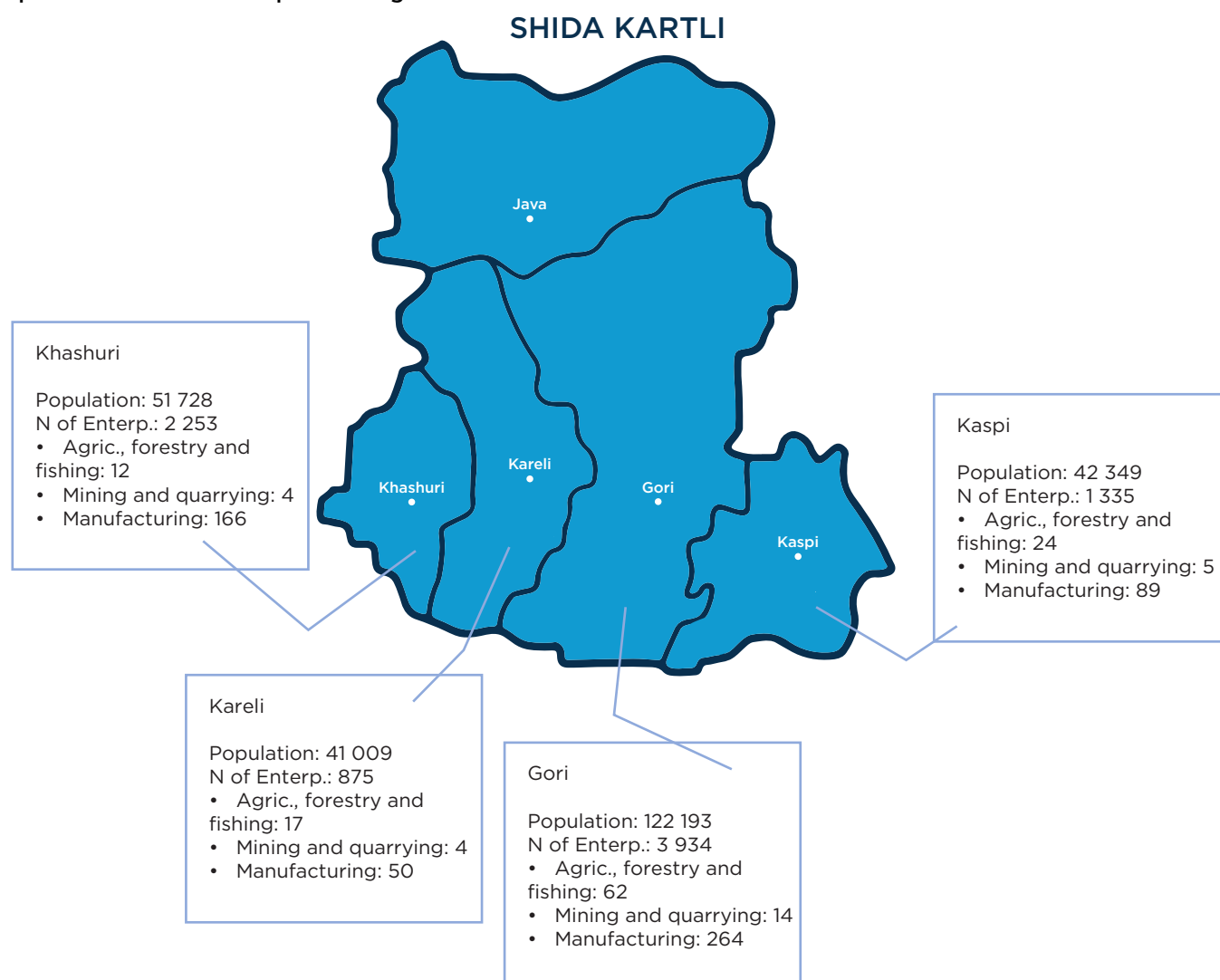
While the share of Shida Kartli region in total business sector employment is 2.6 per cent, the share of turnover and productive value is much lower, 1.9 per cent and 2.2 per cent, respectively. This means that compared to the country's average the labor productivity in Shida Kartli was lower in 2017. As it is observed from the Table 61, this was not the case in 2012 and 2014 when productivity in Shida Kartli was higher than the country's average.

Table 59: Labor productivity (production value over number of employees, thousands of GEL), 2012-2017

	2012	2013	2014	2015	2016	2017
SHIDA KARTLI	47.9	41.5	44.9	45.8	44.5	44.5
GEORGIA	43.2	42.8	44.0	47.9	51.2	54.0

Source: GeoStat.

Map 19: Administrative map of the region



2.5.2 Past relevant studies

The table below summarizes findings of the value-chains/clusters/sectors mentioned in the studies related to Shida Kartli carried out in the past.

Table 60: The list of relevant studies

EXISTING VALUE CHAINS IN SHIDA KARTLI	MANUFACTURING
<ul style="list-style-type: none"> • Fruits and Vegetables • Livestock • Poultry • Field Crops • Potato 	<ul style="list-style-type: none"> • Diversification and Development in the Kakheti Food and Agriculture Sector • Challenges and Prospect of Development of Small and Medium Business in Georgia • South Caucasus Gender Assessment Technical Assistance Report, Value Chain Selection, Georgia, World Bank, 2016 • Potato Value Chain Study, ENPARD, 2017 Situation analysis for Shida Kartli by UNDP, 2011

Source: UNIDO

2.5.3 Regional statistical analysis

Among top 20 sectors with the highest LQs, the sectors from agriculture, as well as manufacturing and service industries, could be observed. In terms of agriculture, freshwater fishing and freshwater aquaculture have dominant positions. In total, there are 17 companies in those sectors with around 40 employees. The other sectors from agriculture, which are among the most concentrated sectors, are the growing of pome fruits and stone fruits and support activities for animal production.

When it comes to manufacturing, six sub-sectors are identified which have the highest LQs. It is noticeable that four sectors are from the manufacture of food products and beverages industry, namely processing and preserving of fish, crustaceans and mollusks, processing and preserving of meat, manufacture of fruit and vegetable juice and distilling and the rectifying and blending of spirits. The other two remaining manufacturing sectors are the manufacture of wooden containers and the manufacture of cordage, rope, twine and netting. Different types of services and construction activities are also covered in this list. Interestingly, no mining and quarrying sectors are concentrated in the Shida Kartli region.

Table 61: Top 20 Sectors by number of enterprises in Shida Kartli (LQ more than 1,25)

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
70.10	Activities of head offices	463	28.58	2
16.24	Manufacture of wooden containers	15	15.70	6
13.94	Manufacture of cordage, rope, twine and netting	7	10.42	3
03.12	Freshwater fishing	7	9.59	3
42.13	Construction of bridges and tunnels	471	8.32	5
03.22	Freshwater aquaculture	34	7.65	14
10.20	Processing and preserving of fish, crustaceans and molluscs	99	7.29	5
64.00	Financial service activities	92	6.94	2

46.70	Other specialised wholesale	5	6.46	2
46.18	Agents specialised in the sale of other particular products	83	5.11	34
11.01	Distilling, rectifying and blending of spirits	181	4.51	3
66.10	Activities auxiliary to financial services	15	4.45	6
43.11	Demolition	10	3.99	4
10.11	Processing and preserving of meat	34	3.94	14
01.24	Growing of pome fruits and stone fruits	10	3.88	4
46.17	Agents involved in the sale of food, beverages and tobacco	117	3.71	48
01.62	Support activities for animal production	15	3.49	6
10.32	Manufacture of fruit and vegetable juice	17	3.41	7
79.11	Travel agency activities	480	3.32	9
46.75	Wholesale of chemical products	194	3.23	44

Source: UNIDO

Looking at the top 20 sectors by LQ but only in agriculture, mining and manufacturing sectors, the largest concentration is observed in the manufacture of wooden containers followed by the manufacture of cordage, rope, twine and netting. However, only a small number of companies are operating in those sectors: six companies and three companies, respectively. The number of companies in the top concentrated sectors ranges between 2 and 60. In general, sectors with small number are not the ideal case for cluster development. Therefore, the study concentrated on sectors with high concentrations as well as a significant number of companies in it.

Table 62: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
16.24	Manufacture of wooden containers	15	15.70	6	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	352	1.29	144
13.94	Manufacture of cordage, rope, twine and netting	7	10.42	3	22.23	Manufacture of builders' ware of plastic	146	1.77	60
03.12	Freshwater fishing	7	9.59	3	23.61	Manufacture of concrete products for construction purposes	81	1.13	33
03.22	Freshwater aquaculture	34	7.65	14	31.09	Manufacture of other furniture	77	0.61	31
10.20	Processing and preserving of fish, crustaceans and molluscs	99	7.29	5	08.12	Operation of gravel and sand pits; mining of clays and kaolin	61	1.05	25
11.01	Distilling, rectifying and blending of spirits	181	4.51	3	01.47	Raising of poultry	56	0.77	23
10.11	Processing and preserving of meat	34	3.94	14	11.02	Manufacture of wine from grape	45	0.22	18
01.24	Growing of pome fruits and stone fruits	10	3.88	4	10.13	Production of meat and poultry meat products	123	0.87	15
01.62	Support activities for animal production	15	3.49	6	03.22	Freshwater aquaculture	34	7.65	14

10.32	Manufacture of fruit and vegetable juice	17	3.41	7	10.11	Processing and preserving of meat	34	3.94	14
01.13	Growing of vegetables and melons, roots and tubers	109	2.69	9	16.10	Sawmilling and planing of wood	34	1.40	14
31.02	Manufacture of kitchen furniture	10	2.44	4	10.61	Manufacture of grain mill products	116	1.31	12
01.41	Raising of dairy cattle	5	2.41	2	23.70	Cutting, shaping and finishing of stone	24	0.97	10
25.50	Forging, pressing, stamping and roll-forming of metal	6	2.21	2	10.72	Manufacture of rusks and biscuits	24	0.50	10
10.39	Other processing and preserving of fruit and vegetables	106	2.12	8	01.13	Growing of vegetables and melons, roots and tubers	109	2.69	9
18.10	Printing and service activities related to printing	5	2.01	2	31.01	Manufacture of office and shop furniture	22	1.41	9
01.42	Raising of other cattle and buffaloes	12	1.99	5	11.07	Manufacture of soft drinks	22	0.21	9
01.50	Mixed farming	17	1.78	7	10.39	Other processing and preserving of fruit and vegetables	106	2.12	8
22.23	Manufacture of builders' ware of plastic	146	1.77	60	01.11	Growing of cereals (except rice), leguminous crops and oil seeds	20	1.42	8
10.73	Manufacture of macaroni, noodles, couscous	12	1.76	5	25.12	Manufacture of doors and windows of metal	20	0.83	8

Source: UNIDO.

The largest number of companies in Shida Kartli region are in the bread manufacturing industry. There are 144 firms, and all of them are identified as small with about 350 employees in total. Similarly, manufacture of rusks and biscuits is also among top 20 sectors by number of companies but the concentration indicator measured by LQ is quite small.

Due to the small number of active companies in Shida Kartli region, the top 20 sectors by number of companies covers 10 industries with less than ten active companies.

After combining the two lists, the five sectors that are ranked in top 20 by LQ and by number of companies at the same time can be identified. These sectors are:

- Manufacture of builders' ware of plastic;
- Freshwater aquaculture;
- Processing and preserving of meat;
- Growing of vegetables and melons, roots and tubers;
- Other processing and preserving of fruit and vegetables.

2.5.4 Analysis of potential clusters

Manufacture of builders' ware of plastic: Out of 907 companies which manufacture of builders' ware of plastic in Georgia, 60 of them are in the Shida Kartli region. All of these companies are categorized as small.

Table 63: Distribution of number of enterprises in Shida Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of builders' ware of plastic	60	0	0	60	0%	0%	100%	146

Source: GeoStat; UNIDO.

The companies in this industry are located in all municipalities of the Shida Kartli region, but the majority of companies are placed in Gori and Khashuri.

Table 64: Distribution of number of enterprises by municipalities

Sector Name	Gori	Khashuri	Kaspi	Kareli
Manufacture of builders' ware of plastic	28	20	7	5

Source: GeoStat.

As the data from the business registry shows, the majority of companies (about 70 per cent) in this sector are operating as individual merchants while the others are limited liability companies. All active companies have local private ownership. In terms of survival rate, about 63 per cent of companies which were registered in this sector in the Imereti region are still active.

Freshwater Aquaculture: Freshwater aquaculture is the sub-sector of fishing and aquaculture which includes not only freshwater aquaculture but also freshwater fishing. Interestingly, in the Shida Kartli region there are five companies in the processing and preserving of the fish sector as well. One of the processing company is medium size and located in the Kareli municipality.

Overall, there are 52 companies in freshwater aquaculture in Georgia and 14 of them are located in Shida Kartli. All those companies are categorized as small. According to Geostat, out of the 25.9 hectares of pools for aquaculture in the country around 69 per cent is located in Shida Kartli while in 2018 13 per cent of all fish in Georgia were produced there, 40 per cent of Salmonidae and 41 per cent of rainbow trout.

Table 65: Distribution of number of enterprises in Shida Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Freshwater aquaculture	14	0	0	14	0%	0%	100%	14

Source: GeoStat; UNIDO.

The companies in this industry are mostly concentrated in the Gori municipality. In Kareli, there are only two companies, and in Khashuri, one.

Table 66: Distribution of the number of enterprises by municipalities

Sector Name	Gori	Khashuri	Kaspi	Kareli
Freshwater aquaculture	11	1	0	2

Source: GeoStat.

According to business registry data, most of the companies in this sector are operating as limited liability companies, but individual merchants are observed as well. Interestingly, there is one cooperative which is registered, but it is not active anymore. Almost all of the active companies have local private ownership. Only one company has foreign ownership. In terms of survival rate, about 48 per cent of the companies which were registered in this sector in Shida Kartli region are still active.

The export of fish¹⁷ products experienced a different pattern during the last decade. In 2012-16 the volume of export increased significantly and peaked at 11.3 mln. USD. Then, exports decreased dramatically and in 2018 declined to 2.4 mln. USD. The trade balance in fish market is negative and import is 12 times higher than export. Main trade partner in fish export is Turkey. Almost two-thirds of Georgian fish exports go to Turkey, followed by Armenia. It is noticeable that Georgian fish is also exported to the USA, Russia, Azerbaijan and Ukraine (Figure 15). Compared to 2016 when fish export reached its maximum, the export structure changed, namely in 2016 the leading trade partner was Kazakhstan with 59 per cent.

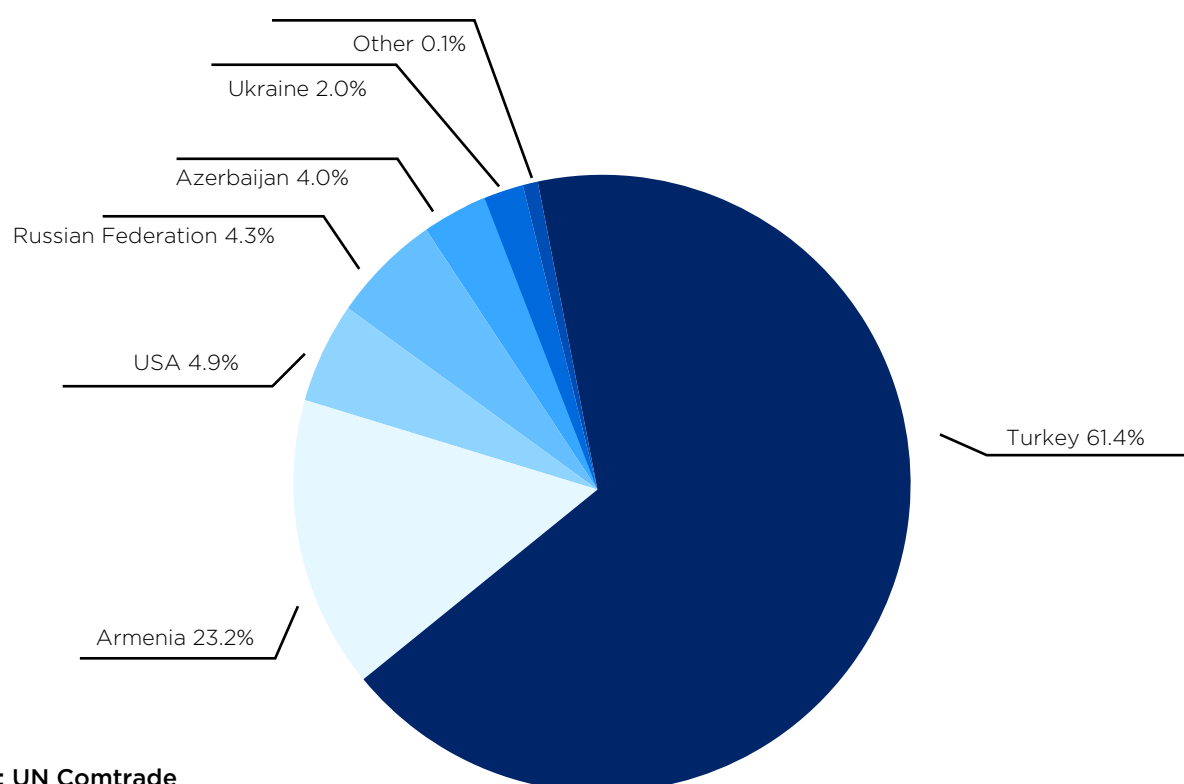
According to a representative of the Georgian Chamber of Commerce and Industry (GCCI) Regional Office in Shida Kartli, quite few trout producers across Gori and the surrounding areas emerged due to an abundance of freshwater. GCCI has identified 150 trout producers in the region. They are cooperatives, individual entrepreneurs or LTDs. Trout are mostly sold on local markets, more specifically in restaurants and retail stores.

Producers plan to form the association to advocate for certain measures to address existing problems. One of the main problems is the absence of a laboratory to diagnose diseases as well as the need for an ichthyologist¹⁸. Through this association, producers plan to raise their voices and demand a laboratory be built and ichthyologists trained abroad.

¹⁷ In calculation fish product covers the following export and import categories: live fish, fresh or chilled fish and other fish meat, frozen fish, fish fillets and other fish meat, fresh, chilled or frozen, dried, salted fish or in brine; smoked fish, fish meal fit for human consumption.

¹⁸ Ichthyology, also known as fish science, is the branch of zoology devoted to the study of fish.

Figure 15: Export structure by country, 2018



Source: UN Comtrade

Case study of fish processing factory Umali

Umali was founded in 2017 with the financial support of Enterprise Georgia. The location in Shida Kartli near Gori was chosen since the region is famous for its agglomeration of trout producers. The initiative of building Umali factory was aiming at supporting trout producers. However, plan did not work out. At present, Umali mostly processes locally produced herring and imported mackerel. The company also purchases locally produced caviar and processes it.

To be processed, a trout needs to be two and more kilos. However, quite unexpectedly for the company, it turned out that trout producers in Shida Kartli raise their trout to less than two kilos. The reason behind is that the probability of fish getting disease increases with the age of fish. Due to the absence of a laboratory and ichthyologist in the region who could prevent or cure the diseases, trout producers prefer to sell the fish at an early age.

According to Umali representatives, another reason why cooperation between company and trout producers did not and would not succeed even if the problems of laboratory and ichthyologist were solved is that trout is an expensive fish to process (compared to herring, which they do process) and they would not be able to sell high quantities on local market as purchasing power of locals is low. Moreover, in Georgia, generally speaking, fish consumption culture is not as strong as it is for meat. Thus, the demand for fish is not high on the local market. To solve these problems, researching the export potential of trout, the building of a laboratory and training of ichthyologists²⁹ will be possible activities.

²⁹ This was also mentioned by the Georgian Chamber of Commerce and Industry regional representative in Shida Kartli

Umali faces challenges selling its products in the retail chains. According to Umali representatives, there is monopoly of retail chains in Georgia which results in high fees for entering the stores (each retail store in the retail chain requires e.g. 5,000-10,000 GEL for each product). Moreover, there is a so-called cashback system which means producers/distributors have to pay 10-15 per cent of the revenue back to the retailers when the retailer sells their products. In contrast to large companies, a small or newly established enterprise is not able to push back against the supermarkets because they do not have a strong market position and a high demand for their products as their large and more popular counterparts. Furthermore, the fee for entering a supermarket is a fixed cost, which is difficult to cover by small enterprises since the production scale is low.

Processing and preserving of meat. There are 71 companies in processing and preserving of meat sector in Georgia and 14 of them are located in the Shida Kartli region. All of these companies are categorized as small.

Table 67: Distribution of number of enterprises in Shida Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Processing and preserving of meat	14	0	0	14	0%	0%	100%	34

Source: GeoStat; UNIDO.

This sector is the part of a large industry of processing and preserving of meat and production of meat products, combining the following sub-sectors: processing and preserving of meat, processing and preserving of poultry meat and production of meat and poultry meat products. Even though the number of companies in production of meat and poultry meat products and processing and preserving of meat are very similar, the Shida Kartli region only has a comparative advantage in the processing and preserving of meat sector.

Table 68: Industry composition

NACE Code	Sectors	Employment	LQ	N of Enterprises
10.13	Production of meat and poultry meat products	123	0.87	15
10.11	Processing and preserving of meat	34	3.94	14

Source: GeoStat; UNIDO.

The majority of companies in this sector are in the Khashuri municipality. There are companies in Kaspi and Gori municipalities as well, four and two, respectively.

Table 69: Distribution of number of enterprises by municipalities

Sector Name	Gori	Khashuri	Kaspi	Kareli
Processing and preserving of meat	2	8	4	0

Source: GeoStat.

According to business registry data, most of the companies in this sector are operating as limited liability companies, but individual merchants are observed as well. All active companies have local private ownership. The survival rate in this sector is high, meaning that about 58 per cent of companies that were registered in this sector are still active.

Growing of Vegetables and Melons, Roots and Tubers. There are nine companies in this sector in the Shida Kartli region. Among them, one is medium-sized and the remaining eight companies are categorized as small.

Table 70: Distribution of number of enterprises in Shida Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Growing of vegetables and melons, roots and tubers	9	0	1	8	0%	11%	89%	109

Source: GeoStat; UNIDO.

Table 71: Distribution of number of enterprises by municipalities

Sector Name	Gori	Khashuri	Kaspi	Kareli
Growing of vegetables and melons, roots and tubers	4	3	2	0

Source: GeoStat.

Business registry data shows that most of the companies in this sector are operating as limited liability companies. Interestingly, two cooperatives are also operating in this sector. Both of them are in the Kaspi municipality. Almost all active companies have local private ownership. Only one company has mixed ownership with a foreign partner. The survival rate in this sector is quite low, meaning that only 35 per cent of companies that were registered in this sector are still active.

Other processing and preserving of fruit and vegetables. This is a sub-sector of processing and preserving of fruit and vegetable industry, which includes the following categories: processing and preserving of potatoes, manufacture of fruit and vegetable juice and other processing and preserving of fruit and vegetables. In total, there are 15 companies in this industry. Eight companies are in other processing and preserving of fruit and vegetable sector and seven companies are in the manufacture of fruit and vegetable juice sector. In both cases, the concentration index is quite high meaning that the manufacture of fruit and vegetable juice sector should be taken into account as well.

Table 72: Industry composition

NACE Code	Sectors	Employment	LQ	N of Enterprises
10.39	Other processing and preserving of fruit and vegetables	106	2.12	8
10.32	Manufacture of fruit and vegetable juice	17	3.41	7

Source: GeoStat; UNIDO.

The companies in the processing and preserving of fruit and vegetables industry are mostly small-sized. Only one medium-sized company is operating.

Table 73: Distribution of number of enterprises in Shida Kartli by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Processing and preserving of fruit and vegetables	15	0	1	14	0%	7%	93%	123

Source: GeoStat; UNIDO.

Table 74: Distribution of number of enterprises by municipalities

Sector Name	Gori	Khashuri	Kaspi	Kareli
Processing and preserving of fruit and vegetables	9	0	2	4

Source: GeoStat.

According to business registry data, most of the companies in this sector are operating as limited liability companies. Interestingly, two cooperatives and one joint stock company are also operating in this sector. Almost all active companies have local private ownership. Only one company has foreign ownership. The survival rate in this sector is 51 per cent.

During the past years, fruit juice concentrate production has increased in Georgia. Apple concentrate especially has become a profitable business for medium and large factories in Georgia. The main export is to Europe where the Georgian product is reconstituted into juice. Shida Kartli is the primary apple-producing region in Georgia. The annual harvest in Shida Kartli is in the 250- 400,000 tons range with the variability being dependent primarily on weather conditions. Of this, 50-60 per cent are considered “non-standard” apples which can be used for processed products to include concentrates. Since the ratio of concentrate-to-apples is 1:8, Georgia has the potential to produce 15-30,000 tons of concentrate per year if all nonstandard apples were used for this purpose. Local apple concentrate is of high quality with 1.7–2.0 per cent acid content. This is considerably higher than that produced in China, which has only 1.0 per cent. As a result, Georgian concentrate commands a higher price than other producers such as China. Georgian concentrate tends to sell for 1,650–1,900 EUR (2,160–2,490 USD) per ton, including transportation to Rotterdam.¹⁹

According to a study of the fruit processing sector in Georgia prepared by the World Bank in 2016, the level of cooperation in the field is limited to information exchanged through personal relationships. The small number of entrepreneurs poses a problem for the formation of cooperatives. If there were more entrepreneurs, farmers would be able to plant and keep orchards together as well as divide the costs of transportation, stock materials, and conduct other activities, they might even be able to create a joint brand and processing factory.

The production line, which is the most critical component for processing fruits, is quite expensive; the regional enterprises mainly use old Soviet-made equipment, which in most cases cannot produce the required quality. Fruit processing has some export potential if entrepreneurs manage to extend their production line and develop a packaging system to produce final products ready for direct sales.

¹⁹ Diversification and Development in the Kakheti Food and Agriculture Sector, Background and recommendations https://www.undp.org/content/dam/georgia/docs/publications/GE_kakheti_agriculture_eng.pdf

Case Study of BPC (Juice Producing Company)

BPC was established in 2010. It specializes in producing organic and conventional natural juices made from wild rosehips and sour cherries. Production technology is mainly based on Georgian homemade traditional methods and adjusted to wide production. The company employs local inhabitants in different regions of Georgia to collect wild forest products.

According to the founder of BPC, as a result of networking in Germany, it was revealed that low awareness about Georgia and, therefore low trust in the country is a serious barrier to exporting Georgian products to Germany. The solution proposed by German side was that Georgian companies need to unite, hire a group of export intermediaries or the company which would assist them in promoting products by promoting country of origin. As a follow-up, BPC tried to build partnerships among several Georgian companies. The attempt has not succeeded so far.

According to the BPC's founder, small and medium-sized companies in the sector have problems with financial planning and management as well as marketing. Usually, companies are concentrated on the production side and neglect the importance of marketing. They do not have retail merchandizers on-site who would plan and develop merchandising strategies, analyze sales figures, customers' reactions and market trends to anticipate product needs or collaborate with buyers, suppliers, distributors and analysts to negotiate prices, quantities and time-scales. Nor are there companies to whom they could outsource. The only option is to outsource to distributing companies which together with delivery also provide merchandizing. However, the service is very expensive for small and medium-sized companies.

The BPC's founder says the solution to this problem might be that the companies in beverage production should unite and hire a company or consultants who would train and assist them in merchandising their beverages specifically as each sector needs an individual approach.

Case Study of Chikori (Dried Fruit Producer Company)

Chikori is a brand founded in 2016 by the Kareli Fruit Company in the Kareli municipality. By the second half of 2017, the company's products had already crossed the borders of Georgia, and today its export markets include the Czech Republic, Lithuania and Hong Kong. At the moment, 12 varieties of dried fruit are sold on the market, four of which are in chocolate.

According to the manager of Chikori, materials of Georgian origin are expensive and the predominant reason for this is that they mostly come from smallholder farmers who do not enjoy economies of scale³¹ as large farms do. Competitors in agriculture have tighter margins. Georgian smallholder farmers, instead of asking for higher margins, must increase the volume of production if they are to produce an adequate income. However, besides the fact that increasing volume of production needs capital, it is also associated with the perception that there is low demand for their production, which is not in parallel to high prices they set. This discourages them from increasing the volume of production and a vicious circle emerges.

According to Chikori's manager, there is a need for encouraging and coordinating smallholders to invest more and increase the volume of their production.

³¹ In microeconomics, economies of scale are the cost advantages that enterprises obtain due to their scale of operation (typically measured by amount of output produced), with cost per unit of output decreasing with increasing scale. The economies in agriculture can occur because the farmer is able to spread more production over the same level of fixed expenses. Or, when a farm is able to obtain volume discounts for inputs such as seed or fertilizer.

Increased production will make farmers less focused on profit margin rather on the quantity they can sell. Therefore, they will be less hesitant with buyers like Chikori when it comes to making deals in advance on fixed price. At present, Chikori buys around 90 per cent of fruit from local smallholder farmers. As they do not agree on making deals in advance, Chikori has to gather fruit in local bazaars, which is quite costly. The alternative would be to gather all fruit in refrigerated warehouses and companies like Chikori would need to make fewer round trips for gathering all fruit needed. It would be great if the warehouse had a mobile/web application told how much fruit there was and what its price was.

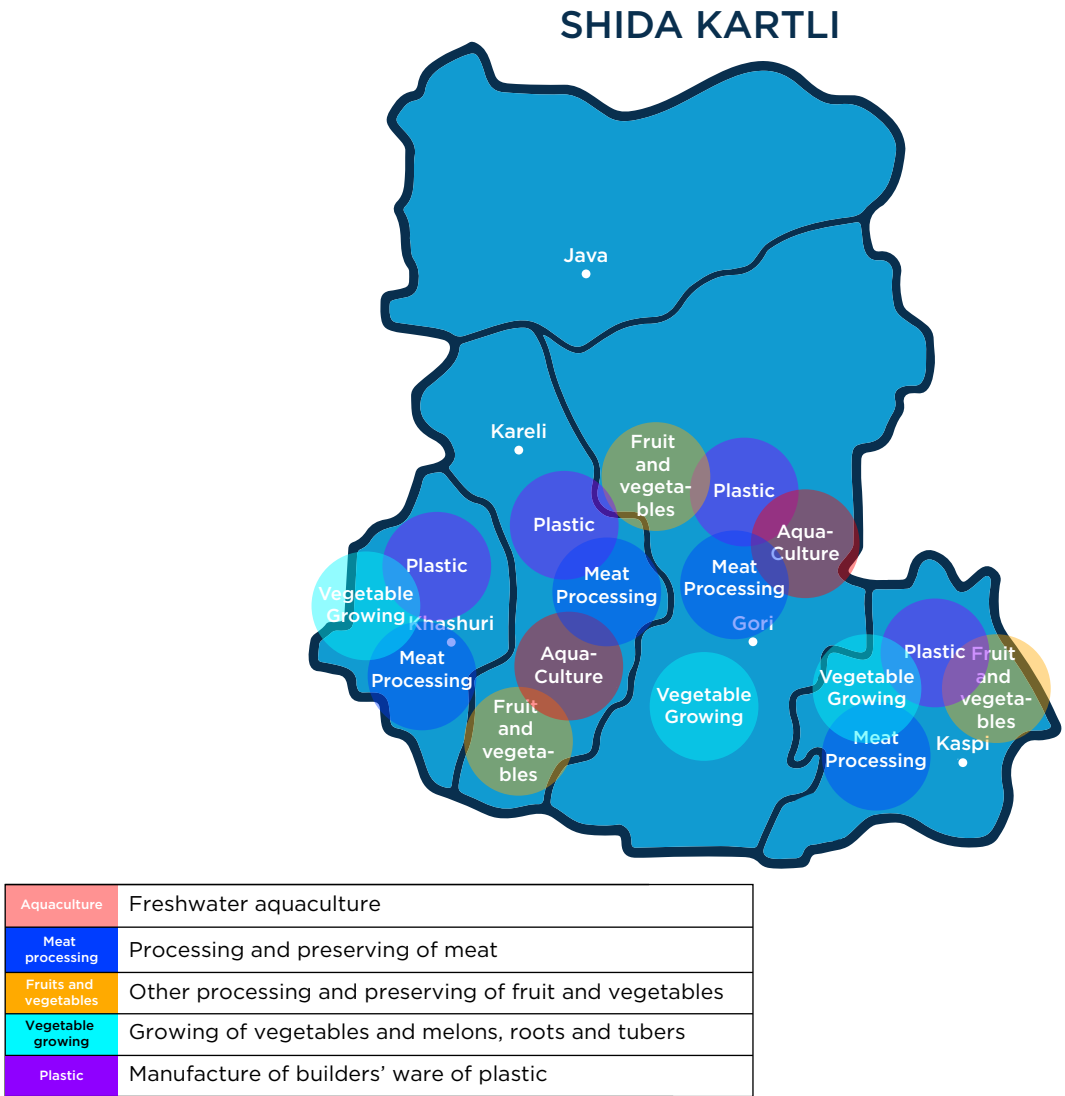
Chikori's manager thinks that uniting in exports by running co-marketing is one of the most possible areas for cooperation among companies like Chikori. Finding common export intermediaries and making a joint investment in promoting the Georgian basket of natural products, whether it be advertising or entering retail chains, is the way to go. Co-marketing under the national brand of Georgia is extremely important as the country is not known across a vast number of countries worldwide due to its short history of independence. Chikori has already made some joint efforts in these regards under a private equity firm based in Tbilisi, Synergy Capital. The firm is a subsidiary of Synergy Group, which was founded in April 2018. Besides attracting investors and investing in emerging, high-growth potential companies, the company offers management consulting services to those companies free-of-charge. The provision of these services relies on the experience of Synergy Group, which is a management consulting company founded in 1999. Since then it has served the development of private and public organizations in Georgia, addressing complex governance issues and refining governance systems.

Synergy capital offers financial support with 20 per cent to 50 per cent equity participation with a maximum volume of \$1,500,000. Currently, this equity firm has 22 investors, mostly C-level executives, and ten beneficiaries including companies operating in healthcare, manufacturing, trade and hospitality.

"A 200 per cent increase in production resources, new directions in the company and properly distributed functions." This is how Chikori evaluates its 6-month period of cooperation with Synergy Capital.

Synergy Capital, as one can tell from the name of the firm, aims at discovering/creating synergies between its beneficiaries to boost their performance. For example, Chikori and tea-producing company Manna, with the facilitation of Synergy Capital launched joint exporting marketing campaigns. Synergy Capital could be a good partner for UNIDO in fostering cluster development in Georgia, e.g. company can assist UNIDO in carrying out a diagnostic study of identified clusters and afterward attracting investors to offer financial support to them.

Map 20: Cluster location



Source: UNIDO.

2.5.5 Analysis of potential clusters identified through information gathered from different stakeholders

Gori municipality has winemaking micro-zones. The most famous wines from Gori are Goruli Mtsvane, Chinuri and Tavkveri.

Goruli Mtsvane occupies an integral part in the production of Georgian sparkling wines. It is also paired with other species to form beautiful mixed wines. For example, the mix of Goruli Mtsvane and Chinuri makes a wine that contains more acidity than the wines made out of either of them alone.

A study²⁰ conducted by the Konrad-Adenauer-Stiftung e.V. explored the capacities of farmers of Gori district for the entry into the EU market and find out the current situation in the district, the experience, information and plans of farmers concerning the EU market and needs and challenges they face now. Fifteen Farmers living in the city of Gori and the Gori district who hold at least five ha of land were surveyed. The results are summarized as follows:

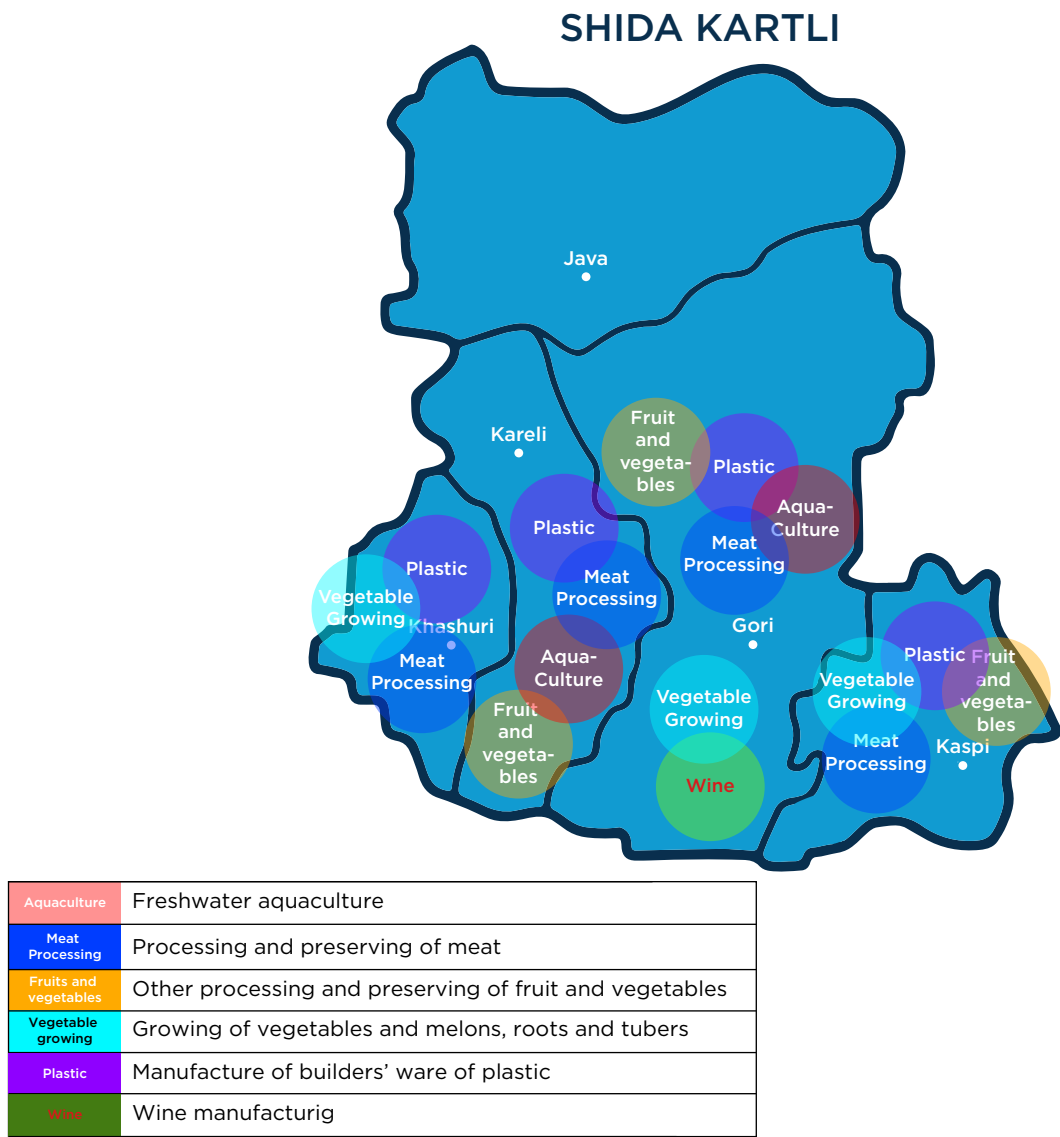
²⁰ http://eprc.ge/admin/editor/uploads/files/Small-Medium%20Enterpr_eng_1.pdf

According to answers of 15 surveyed farmers, the majority of them sell produce to resellers in their own villages, some sell their produce to shops and on local market in Gori and several farmers sell their produce in other cities, namely in the Batumi, Kutaisi and Tbilisi agrarian markets. Only one farmer said that he sold his produce in his village to a foreign reseller, an Azerbaijani citizen.

Various tendencies were seen in terms of exports. A portion of the 15 surveyed farmers had never exported their production; however, some have had such experience. For example, two respondents said that they exported their produce to Russia before 2004. A portion of farmers continues to export its products to the Russian market. It is noteworthy that those farmers who export products to the Russian market buy products from local farmers to increase the quantity of products as their capacities are not enough for ensuring the cost-effectiveness of exporting. According to interviews, the main export products are apples and peaches.

None of the 15 farmers surveyed has had any experience of exporting their own produce to the EU market. However, all of them would wish to do so. None know a farmer who exports products to the EU market.

Map 21: Cluster location



Source: UNIDO.

2.6 Overview of Samtskhe-Javakheti and its cluster

2.6.1 Overview of the region and its economy

Samtskhe-Javakheti is a southern Georgian region. With a land area of 6413 km², the region covers 9.2 per cent of the total territory of Georgia. Samtskhe-Javakheti is bordered by other Georgian regions such as the Adjara AR to the west, Guria and Imereti to the north, Shida Kartli to the north-east and Kvemo Kartli to the east as well as by Armenia to the south and Turkey to the south-west. The region is comprised of six administrative districts: Adigeni, Aspindza, Akhalkalaki, Akhaltsikhe, Borjomi and Ninotsminda municipalities. The town of Akhaltsikhe is the administrative center of the region. Samtskhe-Javakheti consists of the historical Georgian provinces of Meskheta (covering Akhaltsikhe, Adigeni and Aspindza districts), Javakheti (Akhalkalaki and Ninotsminda districts) and Tori (Borjomi district). The total population is 154,100 people as of 2019. The region includes a total of 353 settlements, among which are five towns (Akhaltsikhe, Akhalkalaki, Borjomi, Vale and Ninotsminda, seven townlets/urban settlements (Bakuriani, Bakuriani Andeziti, Tsagveri, Akhaldaba, Adigeni, Abastumani, Aspindza and 258 villages. The region is distinguished by the multi-ethnic composition of its population with total of 81,089 (50.52 per cent) of the Armenian population, a slight majority over the Georgian population of 77,498 persons (48.28 per cent). There is also Russian population accounting for total 712 (0.44 per cent) of the region's population as well as some other nationalities (Ossetians, Greeks, etc.) numbering to total 1,194 (0.74 per cent). By relative distribution among the municipalities, Armenian population is dominant in Akhalkalaki and Ninotsminda municipalities (with 92.9 per cent and 95 per cent of the total populations there, respectively) while Georgians comprise the majority in all other municipalities (especially overwhelmingly so in Adigeni and Borjomi). The population density indicator equals to 25 people per km². The most densely populated districts are the Akhaltsikhe and Akhalkalaki municipalities.

Samtskhe-Javakheti is a purely agrarian region, with the largest share of agriculture in total value added. The majority of the employable population here is engaged in agriculture. Most of the local agricultural activities consist of homestead/family farms and commercial farming operations among which over 90 per cent of production comes from homestead farms. Seventy-three per cent of these family farms produce agricultural products for own use. For the remaining 27 per cent, agriculture is a source of income. Still, the level of commercialization of agriculture in the Samtskhe-Javakheti region is higher than that of the whole country. More than half of local agricultural lands are grazing lands/pastures. Arable lands occupy second position among agricultural lands and the remaining area consists of mowing lands, uncultivated land and perennial plants.

The main sub-sectors of agricultural activity in Samtskhe-Javakheti is production potatoes (which accounts for more than 50 per cent of the total potato production in the country). Animal husbandry and dairy/cheese production also play significant roles in the region's economy. Cereals (barley, other) and vegetables are also grown in the region in significant volumes. Fish-farming/trout production and apiculture activities, as well as poultry farming operations, are also well developed among local farmers. Due to the low level of urbanization level in the regional cities, the development of the industrial sector is not expected soon either. However, it is important to note that the Baku-Tbilisi-Ceyhan oil pipeline, the South Caucasus natural gas pipeline, and the Kars-Tbilisi-Baku railway all pass through the region. The electric energy production sector will be drastically increased in the coming years through the number of hydropower plants currently under-construction. In the region number of mineral water bottling enterprises operate, particularly the famous Borjomi bottling plant (producer of mineral waters Borjomi, Likani as well as of regular spring water), Georgian Water & Company producing mineral water Phlate (in Adigeni district) and DS Borjomi Georgia producing mineral water Mitarbi from Borjomi district.

As for natural resources in Samtskhe-Javakheti, there is an abundance of water (rivers and lakes, thermal springs), mineral waters (Borjomi, Phlate, Mitarbi and number of other mineral waters) as well as forests.

The region possesses rich natural resources in terms of deposits of various minerals (finishing materials, calc-tuff, basalt, diatomaceous earth, pearlite, clay, sand and gravel, scoria, charcoal, gold and andesite). The potential for solar energy utilization because of the climatic characteristics and the rather high degree of solar radiation as well as of wind energy and other alternative energy sources should be noted as well. Additionally, tourism development potential is high in Samtskhe-Javakheti due to a large number of significant historical-cultural monuments scattered across the region and the abundance of wildlife and lakes (Paravani, Tabatskuri, Sagamo and others). The region is famous for its healing and recreational/climatic resort zones, such as the internationally well-known resort Borjomi and also Likani, Bakuriani, Tsemi, Tsagveri, Abastumani, Adigeni, and others. Bakuriani is also a well-known winter recreational and skiing resort. The Borjomi-Kharagauli National Park, the first park in the Caucasus that meets international standards, provides vast potential for recreation tourism activity. It is one of the largest protected territories and is a member of the European wilderness protection organization- PAN parks, which is a guarantee of best protection and sustainable tourism. The Borjomi-Kharagauli National Park has lots of rare, endemic species and the diverse fauna, some of them included in Georgia's red book.

According to statistics, in 2018, the employment rate and economic activity was relatively high compared to the Georgian average.

Table 75: Employment data

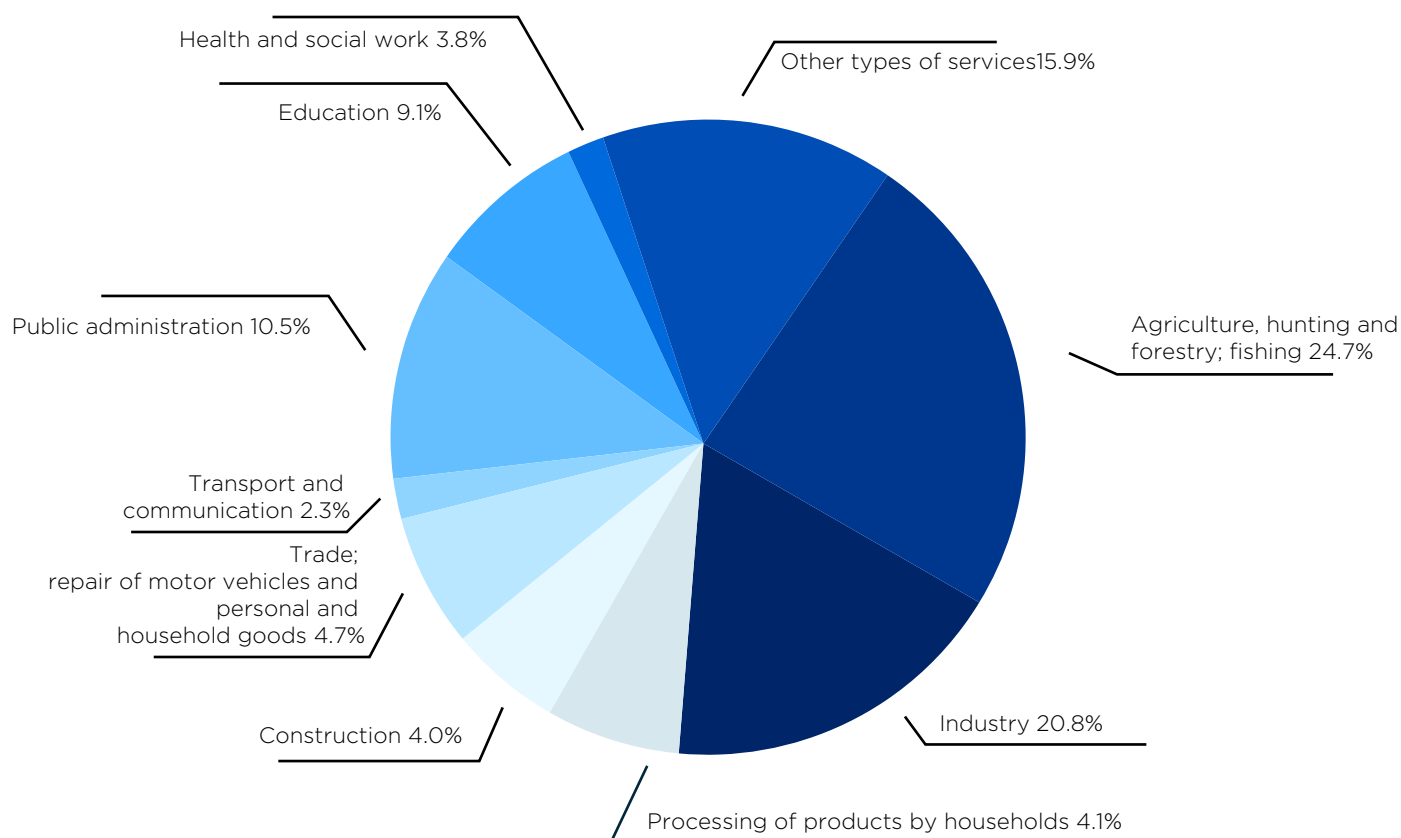
INDICATOR	SAMTSKHE-JAVAKHETI	GEORGIA
Unemployment Rate	6.8 %	12.7 %
Economic activity Rate	72.8 %	63.9 %
Employment Rate	67.8 %	55.8 %

Source: GeoStat.

The growth of the value added of the main sectors of the economy was notable during the last few years. Among these, the manufacturing sector showed considerable growth, followed by the construction sector and the wholesale and retail trade /repair of motor vehicles sector. Next follows the electricity, gas, steam and air conditioning supply sector. The figure below shows the dynamics of the value added by sectors in the Samtskhe-Javakheti region.

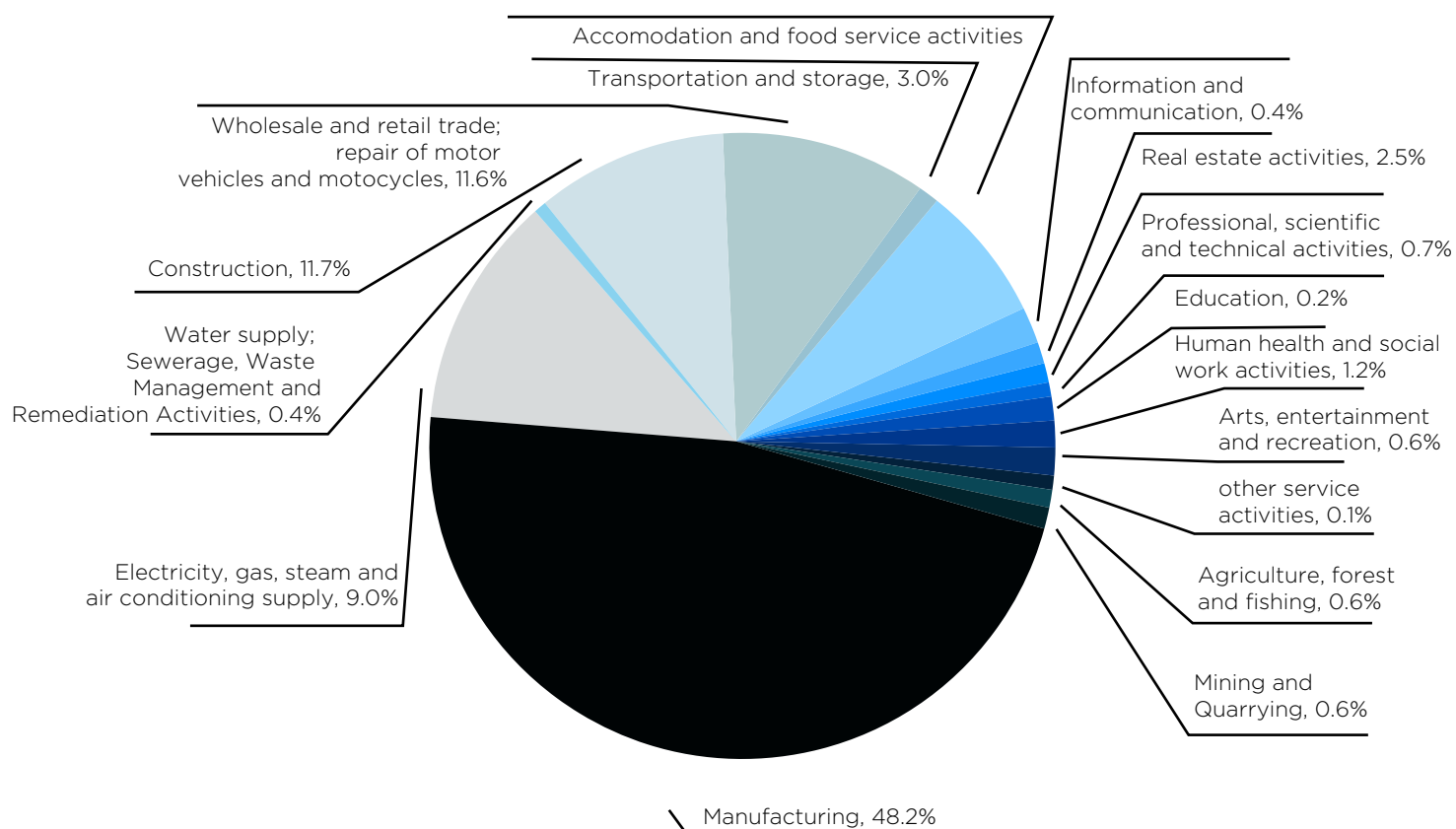
Value added in manufacturing increased from 25 mln GEL in 2006 up to about 184 mln GEL in 2017. The construction sector also shows a significant increase in 2012-2014 period, but in following years it demonstrated a tendency to decline. The figure below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Figure 16: Regional GDP by economic activities, 2017



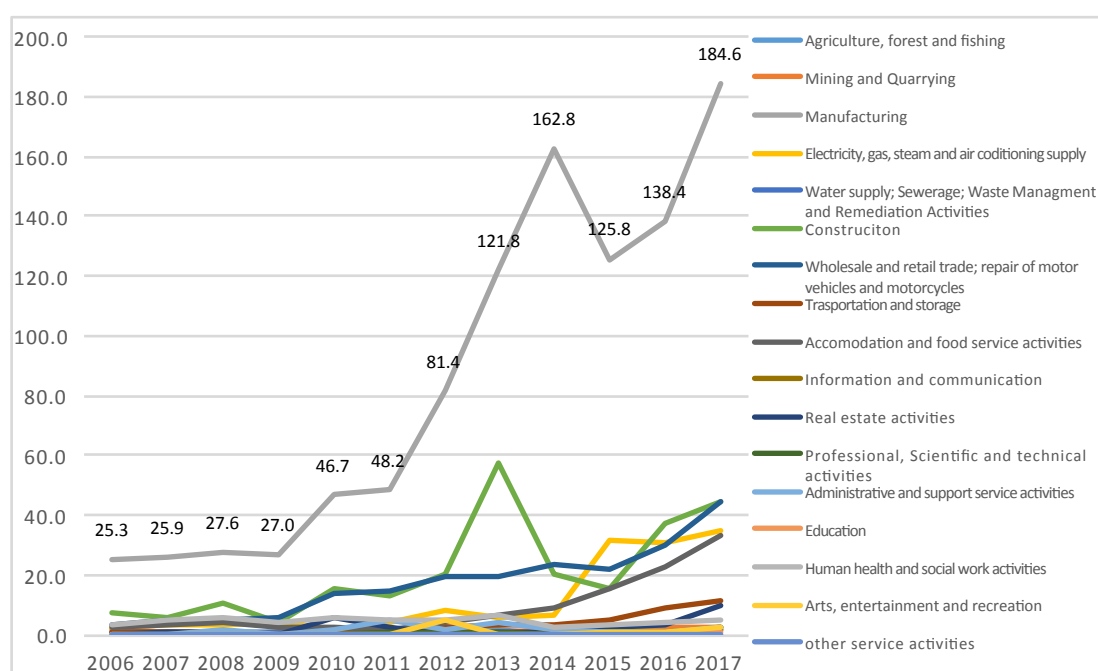
Source: GeoStat.

Figure 17: Regional value added by economic activities, 2017



Source: GeoStat.

Figure 18: Value added in Samtskhe-Javakheti by economic activities, 2006-2017 (MIn GEL)



Source: GeoStat.

Table 76: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forest and fishing	380%	292%	14%	11%
Mining and Quarrying	41%	81%	124%	-
Manufacturing	127%	108%	17%	-36%
Electricity, gas, steam and air conditioning supply	327%	255%	-33%	-88%
Water supply; Sewerage, Waste Management and Remediation Activities	200%	140%	107%	-75%
Construction	118%	61%	-19%	411%
Wholesale and retail trade; repair of motor vehicles and motorcycles	130%	112%	141%	-78%
Transportation and storage	338%	467%	93%	200%
Accommodation and food service activities	686%	286%	57%	165%
Information and communication	700%	1333%	89%	-100%
Real estate activities	2325%	2760%	178%	100%
Professional, scientific and technical activities	170%	131%	56%	100%
Administrative and support service activities	75%	50%	-47%	-100%
Education	100%	200%	-23%	100%
Human health and social work activities	-8%	-1%	-51%	-89%
Arts, entertainment and recreation	-53%	-38%	366%	-100%
Other service activities	200%	100%	50%	100%

Source: GeoStat.

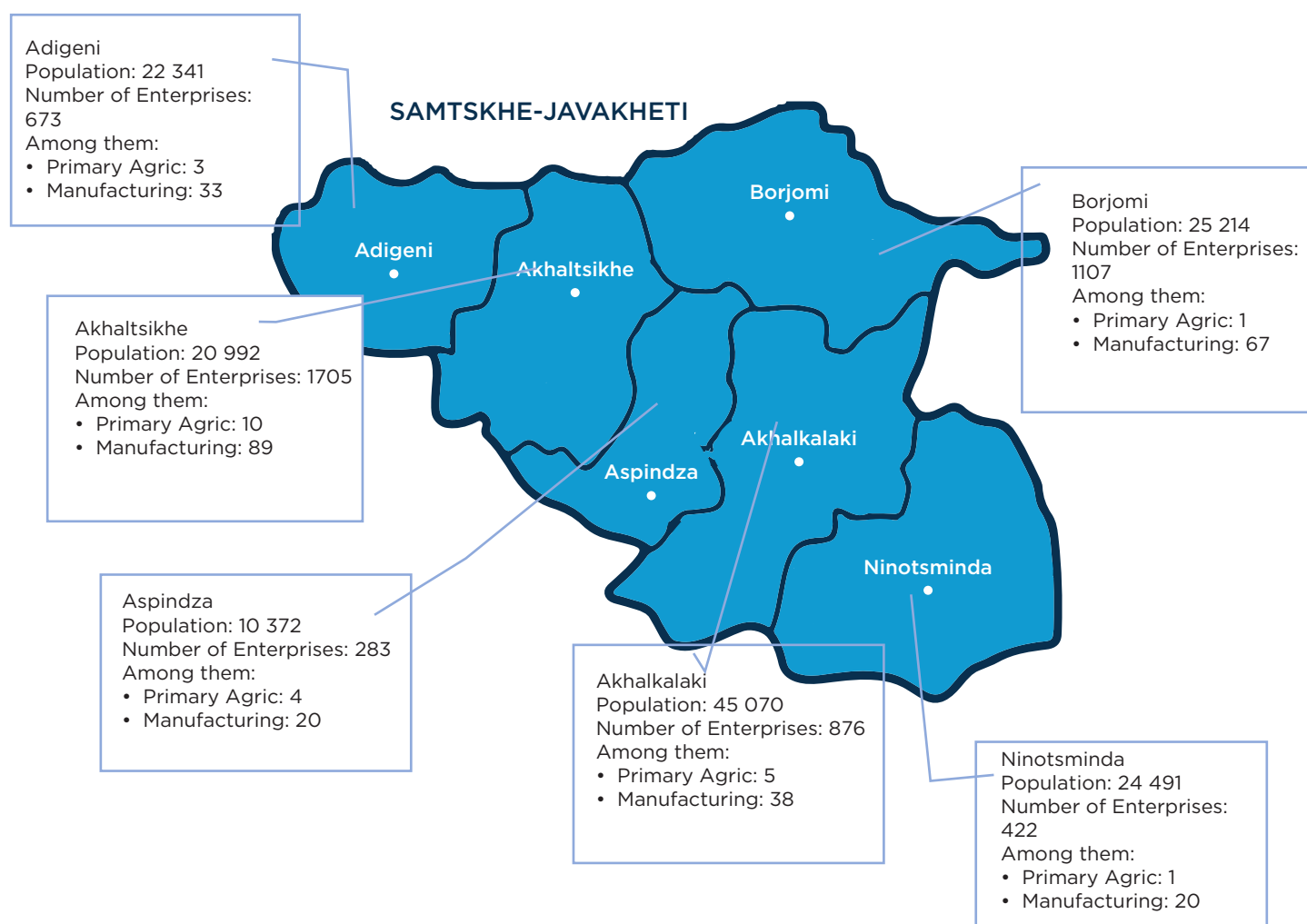
In the past five years, the industries which gained the most momentum in terms of value added included real estate activities (with the overwhelming 2,325 per cent growth), information and communication (700 per cent), accommodation and food service activities (with 686 per cent growth of value added), agriculture, forest and fishing (380 per cent) and transportation and storage (338 per cent).

In the past five years, the industries which gained the most momentum in terms of output were real estate (2,760 per cent) and information and communication (1,333 per cent), followed by transportation and storage (with 467 per cent), agriculture, forest and fishing (292 per cent) and accommodation and food service activities (286 per cent).

In terms of employment growth figures, the leading sectors were arts, entertainment and recreation (with 366 per cent growth), real estate activities (178 per cent) and wholesale and retail trade; repair of motor vehicles and motorcycles (141 per cent), water supply; sewerage, waste management and remediation Activities (107 per cent).

As for dynamics about investments in fixed assets, such sectors as construction (with 411 per cent growth), transportation and storage (200 per cent) and accommodation and food service activities (165 per cent) were identified as leading sectors.

Map 22: Administrative map of Samtskhe- Javakheti with key figures



2.6.2 Past relevant studies

Over the past years, there were several value-chain studies carried out in Georgia which identified the value chains (mostly agriculture) that were developed in the Samtskhe-Javakheti region.

Table 77: The list of relevant studies

EXISTING VALUE CHAINS IN SAMTSKHE-JAVAKHETI	SOURCE
Onion	The onion value chain analysis in Samtskhe-Javakheti region of Georgia. PMCG/GIPA/CENN/Samtskhe-Javakheti State University. 2016
Honey	Honey value chain. Rural and agricultural Policy development institute. European Neighborhood programme for agriculture (ENPARD).2017
Trout	The Georgian trout sector: a value chain study. ISET /Agricultural Policy Research Center / CARE/ ENPARD. 2016
Potato	Potato market analysis in Kvemo Kartli, Shida Kartli and Samtskhe-Javakheti regions Of Georgia/ SME Development Agency SMEDA /Mercy Corps /EU ENPARD. 2017

Source: UNIDO

Furthermore, Samtskhe-Javakheti Development Strategy established priorities vis-à-vis the following sectors in the region for 2014 – 2021 years.

Table 78: The list of priority sectors identified by strategy

PRIMARY AGRICULTURE/AGRO PROCESSING
Cereals Vegetable processing Peanuts Bio-potatoes Production and processing Honey

Source: Samtskhe-Javakheti Regional Development Plan 2014-2021.

2.6.3 Regional statistical analysis

Using the constructed data about employment by industry and region, LQs were calculated for the Samtskhe-Javakheti region. The table below provides information about the general characteristics of the selected sectors, such as number of employees, number of active companies and their LQs.

Table 79: Top 20 Economic Sectors by LQ in Samtskhe-Javakheti region

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
03.22	Freshwater aquaculture	31,93	12,73	12
16.10	Sawmilling and planing of wood	159,99	12,34	25
64.1	Monetary intermediation	109,43	11,79	6
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	628,38	10,86	13
20.11	Manufacture of industrial gases	10,64	9,39	4
85.51	Sports and recreation education	104,11	8,72	4
90.02	Support activities to performing arts	101,45	8,18	3
85.2	Primary education	7,98	8,01	3
55.20	Holiday and other short-stay accommodation	5,32	6,63	2
55.1	Hotels and similar accommodation	18,63	6,25	7
23.20	Manufacture of refractory products	7,98	5,25	3
25.62	Machining	13,30	4,71	5
43.91	Roofing activities	10,64	4,51	4
46.16	Agents involved in the sale of textiles, clothing, fur, footwear and leather goods	7,98	4,03	3
01.49	Raising of other animals	13,30	3,96	5
38.11	Collection of non-hazardous waste	291,04	3,82	4
47.2	Retail sale of food, beverages and tobacco in specialized stores	261,62	3,64	98
95.12	Repair of communication equipment	10,64	3,51	4
02.40	Support services to forestry	13,30	3,49	5

Source: UNIDO

It can be seen from Table 79 that freshwater aquaculture and sawmilling and sawmilling and planing of wood have the largest LQs. The next important manufacturing field with high LQ is the manufacture of soft drink, the production of mineral waters and other bottled waters. All these industries mainly related to Borjomi, Plate and other mineral water bottling industries, which are located in the region. Only one agriculture sector (the raising of other animals) was detected within the top 20 concentrated sectors in the Samtskhe-Javakheti region. The sectors from manufacturing industries were also detected, such as the manufacture of industrial gases and the manufacture of refractory products.

However, since the scope of the study does not cover service industries, the sector of service was accordingly excluded from the further detailed analysis (along with other sectors non-relevant to our study, such as education, trade, etc.). Table 80 below summarizes the top 20 sectors by their LQs and the number of enterprises (only agriculture and manufacturing) in the Samtskhe-Javakheti region.

Table 80: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
03.22	Freshwater aquaculture	31.93	12.73	12	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	191.59	1.25	72
16.1	Sawmilling and planking of wood	8.83	12.58	3	22.23	Manufacture of builders' ware of plastic	93.13	2.00	35
16.10	Sawmilling and planking of wood	159.99	12.34	25	10.51	Operation of dairies and cheese making	69.19	1.89	26
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	628.38	10.86	13	16.10	Sawmilling and planking of wood	159.99	12.34	25
20.11	Manufacture of industrial gases	10.64	9.39	4	31.09	Manufacture of other furniture	55.88	0.79	21
23.20	Manufacture of refractory products	7.98	2.25	3	23.61	Manufacture of concrete products for construction purposes	40.76	1.02	15
25.62	Machining	13.30	4.71	5	08.12	Operation of gravel and sand pits; mining of clays and kaolin	37.25	1.14	14
01.49	Raising of other animals	13.30	3.96	5	11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	628.38	10.86	13
02.40	Support services to forestry	13.30	3.49	5	23.70	Cutting, shaping and finishing of stone	34.59	2.45	13
08.99	Other mining and quarrying n.e.c.	5.32	2.58	2	03.22	Freshwater aquaculture	31.93	12.73	12
23.70	Cutting, shaping and finishing of stone	34.59	2.45	13	16.23	Manufacture of other builders' carpentry and joinery	29.27	2.43	11
16.23	Manufacture of other builders' carpentry and joinery	39.37	2.43	11	23.63	Manufacture of ready-mixed concrete	26.61	0.80	10
02.20	Logging	14.15	2.41	5	10.83	Processing of tea and coffee	15.97	1.56	6
16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	7.98	2.35	3	10.83	Support activities for crop production	15.97	0.45	6
01.42	Raising of other cattle and buffaloes	7.98	2.32	3	25.62	Machining	13.30	4.71	5
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	14.15	2.13	5	01.49	Raising of other animals	13.30	3.96	5
10.61	Manufacture of grain mill products	104.11	2.09	4	02.40	Support services to forestry	13.30	3.49	5
22.23	Manufacture of builders' ware of plastic	91.13	2.00	35	02.20	Logging	14.15	2.41	5
01.50	Mixed farming	10.64	1.97	4	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	14.15	2.13	5
10.51	Operation of dairies and cheese making	69.19	1.89	26	01.47	Raising of poultry	13.30	0.33	5

Source: UNIDO

As indicated by Table 80, the majority of sectors are from the manufacturing industry. The LQs range between 1.89 and 13.73. The highest number of companies is present in the sub-sectors of manufacture of builders' ware of plastic, the operation of dairies and cheese making and sawmilling and planking of wood. Based on the analysis conducted the following sectors were shortlisted for further consideration:

Table 81: Shortlisted Sectors by number of enterprises in Samtskhe- Javakheti (LQ more than 1.25, only agriculture and manufacturing)

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
03.22	Freshwater aquaculture	31,93	12,73	12
10.51	Operation of dairies and cheese making	69,19	1,89	26
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	628,38	10,86	13
16.10	Sawmilling and planking of wood	159,99	12,34	25
16.23	Manufacture of other builders' carpentry and joinery	29,27	2,43	11
22.23	Manufacture of builders' ware of plastic	93,13	2,00	35
23.70	Cutting, shaping and finishing of stone	34,59	2,45	13

Source: UNIDO

2.6.4 Analysis of potential clusters

The results of the regional statistical analysis have revealed a list of sub-sectors which show higher concentration and growth of the number of enterprises in the region. After combining this statistical analysis with information presented during interviews and collected from available reports and studies, the following industries in multiple municipalities have been identified as potential clusters: 1) the manufacture of soft drinks; the production of mineral waters and other bottled waters 2) sawmilling and planking of wood 3) the manufacture of other builders' carpentry and joinery 4) the manufacture of builders' ware of plastic 5) cutting, shaping and finishing of stone 6) dairy production, and 7) fish farming (trout).

Manufacture of soft drinks; production of mineral waters and other bottled waters. All these industries are mainly related to Borjomi, Plate and other mineral water bottling industries, which are located in the region. Also, there operate one juice production enterprise in Adigeni, two soft drink production enterprises in Akhaltsikhe and two in Akhalkalaki.

Geostat statistics indicated the 13 companies are involved in the manufacture of soft drinks; production of mineral waters and other bottled waters sector, distributed across four municipalities. Among these, the largest number of them, seven, is located in Borjomi. There are three companies in Akhaltsikhe, two in Akhalkalaki and one in Adigeni.

Table 82: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhaltsikhe	Borjomi	Ninotsminda
Manufacture of soft drinks; production of mineral waters and other bottled waters	1	0	2	3	7	0

Source: GeoStat.

Among the above total number of 13 companies, two are large, two are medium size and nine are small companies.

Table 83: Distribution of number of enterprises in Samtske-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of soft drinks; production of mineral waters and other bottled waters	13	2	2	9	15%	15%	69%	628,38

Source: GeoStat; UNIDO.

Cooperation among the above companies does not exist. They consider each other as competitors and at this stage do not see any reasons for cooperation.

Sawmilling and planking of wood: The lower zone of the Samtskhe-Javakheti region (Borjomi, Akhaltsikhe and Adigeni) is rich with timber resources. Accordingly, businesses related to sawmilling and planking of wood are developed within this area. Currently, in the region 25 wood Sawmilling and planking enterprises are operating, among which the majority (13 companies) operate in the Borjomi municipality. Adigeni has eight enterprises and four companies are located in Akhaltsikhe.

Table 84: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhalsikhe	Borjomi	Ninotsminda
Sawmilling and planning of wood	8	0	0	4	13	0

Source: GeoStat.

According to sizes, 24 companies out of the total of 25 are small and one belongs to the medium-size category.

Table 85: Distribution of number of enterprises in Samtske-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Sawmilling and planning of wood	25	0	1	24	0%	4%	96%	159,99

Source: GeoStat; UNIDO.

As was mentioned, the majority of the above enterprises are small and they mainly produce wooden planks. Unfortunately, they are not equipped with modern dryers and other equipment that would allow them to produce high-quality value-added products. There is not a great deal of willingness for cooperation among enterprises. There is no association entity or platform where these companies could discuss current problems and develop joint strategies for further cooperation and development.

Manufacture of other Builders' Carpentry and Joinery: The manufacture of other builders' carpentry and joinery is the subsector of a significant category of the manufacture of wood products, cork, straw and plaiting materials. In total, 11 companies are operating there, most of them (seven enterprises) are located in Borjomi. In each of the other municipalities except Ninotsminda, there one company operates, representing the manufacture of other builders' carpentry and joinery sector.

Table 86: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhaltsikhe	Borjomi	Ninotsminda
Manufacture of other builders' carpentry and joinery	1	1	1	1	7	0

Source: GeoStat.

All of these companies are small size.

Table 87: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of other builders' carpentry and joinery	11	0	0	11	0%	0%	100%	29,27

Source: GeoStat; UNIDO.

There is not much willingness for cooperation among enterprises. There is no association or other relevant entity which would coordinate/organize the companies for further cooperation and development.

Manufacture of builders' ware of plastic: There are 35 companies in the sector of the manufacture of builders' ware of plastic in the Samtskhe-Javakheti region. The majority of them are located in the Akhhaltsikhe (16 companies) and Akhalkalaki (ten companies) municipalities. Five are located in Borjomi and three in Adigeni. The sub-sector is not represented in Ninotsminda.

Table 88: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhaltsikhe	Borjomi	Ninotsminda
Manufacture of builders' ware of plastic	3	1	10	16	5	0

Source: GeoStat.

These companies are producing different types of plastic ware, mainly from recycled polypropylene and other plastic materials. In terms of size, all 35 companies are small-size enterprises.

Table 89: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of builders' ware of plastic	35	0	0	35	0%	0%	100%	93,13

Source: GeoStat; UNIDO.

Among the companies operating in the manufacture of builders' ware of plastic there is no significant cooperation. There are cases when one company can borrow raw materials from another one, but cooperation does not go beyond such relations. They also have never thought about the creation of any association and do not see reasons for the creation of such an entity.

Cutting, shaping and finishing of stone: There are about 13 registered enterprises in Samtskhe-Javakheti which operate in the stone cutting, shaping and finishing sub-sector. Their main business is basalt stone. Virtually all of them are equipped with old type machinery and stone cutting equipment. Companies are represented only in three municipalities including Ninotsminda (six companies), Akhalkalaki (four) and Akhaltsikhe (three).

Table 90: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhalsikhe	Borjomi	Ninotsminda
Cutting, shaping and finishing of stone	0	0	4	3	0	6

Source: GeoStat.

All these companies are small.

Table 91: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Cutting, shaping and finishing of stone	13	0	0	13	0%	0%	100%	34.59

Source: GeoStat; UNIDO.

There is no cooperation among enterprises. No association exists to organize and/or coordinate companies for further cooperation and development.

Dairy production: Samtskhe-Javakheti region has a significant share in livestock production, accounting for 8 to 17 per cent of the country's total. In Samtskhe-Javakheti, there are 26 registered dairy enterprises, with the largest number of them located in the Ninotsminda municipality: nine companies. The dairy/cheese operation companies are also distributed among all other municipalities: four each in the Adigeni, Akhalkalaki and Akhaltsikhe municipalities, three in Aspindza and two in Borjomi.

Table 92: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhaltzikhe	Borjomi	Ninotsminda
Operaton of dairies and cheese making	4	3	4	4	2	9

Source: GeoStat.

Size-wise, all the above 26 companies belong to the category of small enterprises.

Table 93: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Operation of dairies and cheese making	26	0	0	26	0%	0%	100%	69,19

Source: GeoStat; UNIDO.

Virtually all of these companies purchase milk from small and medium cattle farmers. Many of them established a system of contracting farming, i.e., they have a verbal agreement with the cattle farmers for the delivery of milk. In some cases, dairy enterprises make down payment to the farmers (paying in credit) and later, especially during the winter season, farmers deliver milk. Under a SDC-funded PAFAI project, together with the Bank of Georgia, there was a special banking product with which farmers, through the guarantee of purchase contract with the dairy company on milk delivery, were able to receive bank credit for purchasing fodder and other inputs for their cattle. However, due to low interest from the side of the bank, the project was not scaled up, and soon after the finalizing of PAFAI project, the Bank of Georgia withdrew this banking product from its services.

If we analyze the current situation in the dairy subsector in Samtskhe-Javakheti, it becomes apparent that there is an interest from the dairy enterprises to establish robust and reliable business relations with the cattle farmers to help them increase their productivity and winter milk production. Dairy enterprises are ready to play the role of aggregators and become partners in the scheme Bank-Farmer-Buyer and support cattle farmers in increasing their production scale, milk quality and efficiency. In the region there are artificial insemination specialists, zoo technicians and veterinarians. There is some concentration of dairy companies, but unfortunately in primary production of milk, there still is not a significant number of medium (up to 50 cows) and large (up to 100 cows) farmers which could produce the needed quality and quantity of milk. Despite this, there is some potential for establishment of the dairy cluster since a definite demand from the dairy processing companies exists.

Fish Farming (Trout): Aquaculture is subsector in the region which has a potential for cluster development. Currently, there are 26 officially registered trout farms, producing mainly rainbow trout (*Oncorhynchus mykiss*). However, it is estimated that an additional 25-30 farms do exist but they are not registered. There are some examples of cooperation among the local fish farmers: they are jointly importing part of their fish feed. Currently, fish farm owners in Akhalkalaki are discussing the possibility of jointly establishing a fish smoking workshop to produce value added products with a long shelf life.

If we analyze the current situation in the trout fish subsector in Samtskhe-Javakheti, we understand that there is a certain degree of cooperation between the local fish farmers and they are ready to farther engage in more in-depth cooperation to produce value added products, introduce new effective technologies and increase their knowledge to develop and expand their businesses.

There is a total of 12 companies operating in the freshwater aquaculture sector of Samtskhe-Javakheti, distributed across four municipalities. The highest concentration is in the Akhalkalaki municipality where there are seven fish/trout farms. There are also three companies in Akhaltsikhe and one in each of the Aspindza and Borjomi municipalities. As it was mentioned above, the companies have been already cooperating around certain topics of common interest and also are discussing further possibilities for cooperation.

Table 94: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhalsikhe	Borjomi	Ninotsminda
Freshwater aquaculture	0	1	7	3	1	0

Source: GeoStat.

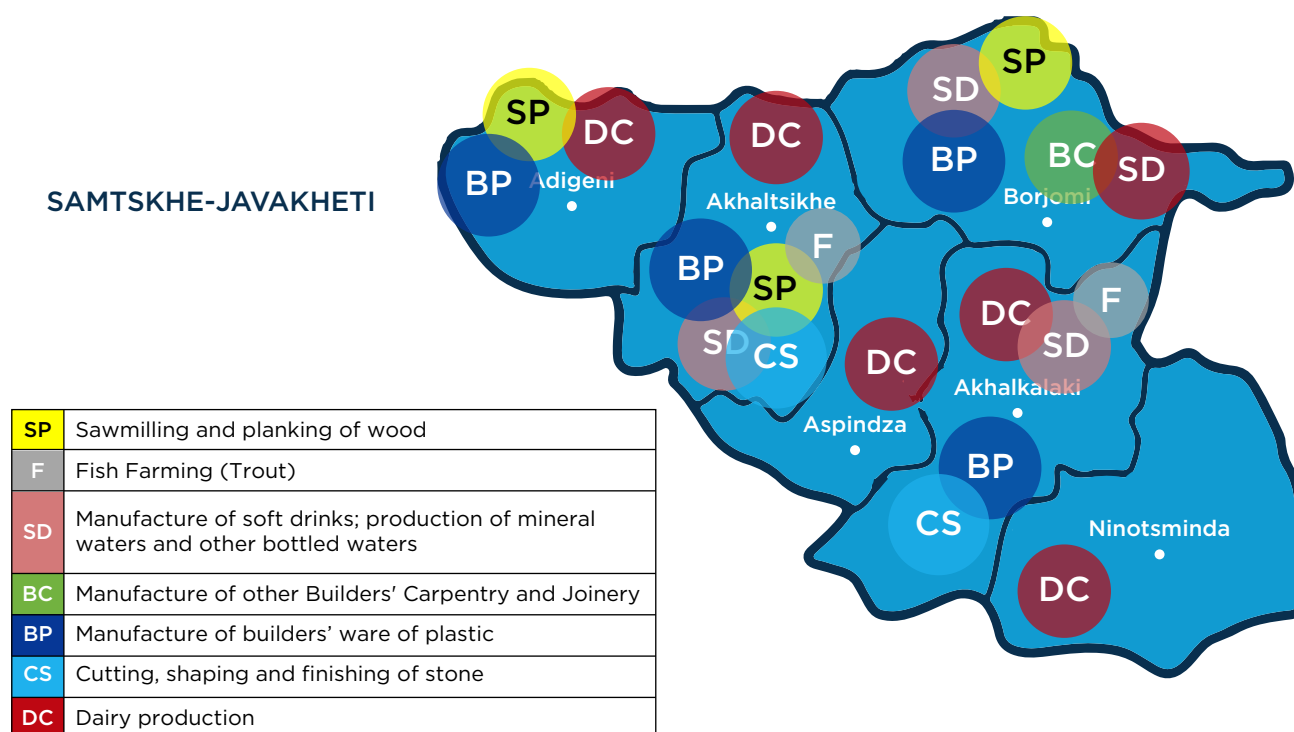
According to size, all 12 of the above freshwater aquaculture farms are small.

Table 95: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Freshwater aquaculture	12	0	0	12	0%	0%	100%	31,93

Source: GeoStat; UNIDO.

Map 23: Cluster location



Source: UNIDO

2.6.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, potato production was found to be noteworthy but did not end up in the statistical analysis due to lack of official statistics.

Potato: A significant share of Georgia's potato production is concentrated in Samtskhe-Javakheti. Currently, there are two strong centers around which the majority of local potato grower farmers are united. One such organization is Rural Advisory Service Ltd (RAS Ltd.) located in the town of Akhaltsikhe. RAS supplies local potato grower farmers with high-quality potato seeds (Elite class and A-class), which they import from AGRICO (Netherlands). Mainly, they consolidate orders from small farmers (a few tons) and order consolidate imports from AGRICO. Also, they import Elite class potato seeds for their own company for multiplication and sell the multiplied seeds to other farmers. This organization owns demo-plots and employs well-trained staff in potato production. RAS has modern agricultural machinery/equipment for potato planting. The company also owns an agricultural inputs shop where farmers can buy fertilizers, plant protection means, small agricultural equipment and machinery. The inputs shop has a special program with the microfinance organization CRISTAL through which farmers can get loans to purchase agricultural inputs and small equipment. RAS has all kinds of agricultural machinery and equipment for potato planting as well as other machinery necessary for the production of onions and carrots (these vegetables are used for establishment of crops rotation system in the potato planting cycle). Also, RAS owns a vegetable warehouse equipped with modern ventilation system and vegetable sorting, storing and handling equipment. RAS mainly supplies farmers in the Samtskhe zone (Borjomi, Akhaltsikhe, Adigeni and Aspindza municipalities) of the region with its potato seeds.

Also, in Akhaltsikhe there is a State-owned company named Mekanazatori Ltd and a cooperative called the Akhaltsikhe Rural Service Center which offer local farmers wide range of agricultural machinery services. Another center around which many potato grower farmers are connected is located in Akhalkalaki. Here are several players who provide different services offering farmers potato seeds, agricultural inputs, agricultural equipment and machinery services. One such organization is agricultural cooperative Five Stars which, in alliance with an input supply shop, provides farmers with potato seeds and agricultural inputs. Another notable player on the local market is the Javakheti Agro Company Ltd, which owns an agro inputs shop offering farmers plant protection means, small size agro equipment, etc. The company owns modern facilities equipped with potato sorting/packing equipment. During an interview with the director of the Javakheti Agro Company Ltd, Makhare Matsukatov, he mentioned his company plans to build a new potato warehouse with a capacity of 1,000-1,500 tonnes near their existing potato sorting facility, giving them the possibility to consolidate potatoes from the small and medium-size potato farmers, sort the product, pack it in the nets and distribute through the big supermarket chains and other trade partners. In Akhalkalaki there are also a few more agro input shops: E.I Merujan Ezoian, Agromix Ltd and a branch shop of RAS Ltd. A state-owned company Mekanizatori Ltd offers local farmers a wide range of agricultural machinery services. During the current year, the International Potato Center CIP implemented two demo projects (one in Akhalkalaki and one in the village of Baraleti) in which they provided 100 kg pre-elite seeds (Marfona and red Meskhuri) to local farmers for arranging demo lots.

Wellington LLC is a potato chips manufacturer in Georgia established in 2015. The company produces potato chips under the brand name FRIXX. It owns potato fields in the Bolnisi and Marneuli municipalities as well as a potato chips production company in Tbilisi. In addition, the company works closely with Georgian contractor farmers to receive the best raw materials. In Akhalkalaki, the company is ready to establish long term relations with local farmers who can produce and supply the company with necessary volumes of the appropriate variety and quality of potatoes.

The Biotechnology Center of Georgian Technical University works in the areas of biodiversity, biologically safe food technology, in vitro methodology and developing new biotechnological methods in practical agriculture. This organization can produce virus-free seed materials through the in-vitro method (virus-free mini tubers) for further multiplication of high-quality seeds in the open field.

The LEPL Scientific Research Center of Agriculture (SRCA) was established in 2014. The center is equipped with modern equipment and technologies and conducts a wide range of scientific research activities in different fields of agriculture. Within the project of the International Potato Center, SRCA transplanted potato tubs into greenhouse from an in-vitro laboratory. These seeds were used for demo plots in Akhalkalaki and Baraleti.

If we analyze current situation in the potato subsector in Samtskhe-Javakheti, it becomes apparent that there are two main places (Akhalsikhe and Akhalkalaki) where there is a big concentration of primary producers and there are many supporting companies and institutions in place: aggregators (Wellington LLC), producer of pre-elite seeds, organizations, which can multiply high-quality seeds, business consulting organizations, agro-machinery service providers and input suppliers, financial institutions, companies, which can make consolidate and produce of value added products. These organizations already have developed a certain level of cooperation among each other and there is a significant potential for cluster establishment and building of mutually beneficial business systems among all players.

It should be noted that despite the fact that there are 38 officially registered potato cooperatives (each of which in average counts about five members), these are not reflected in official statistics. Therefore, according to GeoStat, there is only one enterprise located in Akhalkalaki municipality operating in the potato production sector.

Table 96: Distribution of number of enterprises by municipalities

Sector Name	Adigeni	Aspindza	Akhalkalaki	Akhalsikhe	Borjomi	Ninotsminda
Potato	0	0	1	0	0	0

Source: GeoStat.

Also, there are eight companies that process potatoes in different locations of Georgia which purchase raw material from Samtskhe-Javakheti producers.

Table 97: Processing companies by regions

Sector Name	Tbilisi	Adjara	Imereti	Mtskheta-Mtianeti	Kvemo Kartli
Potato	4	1	1	1	1

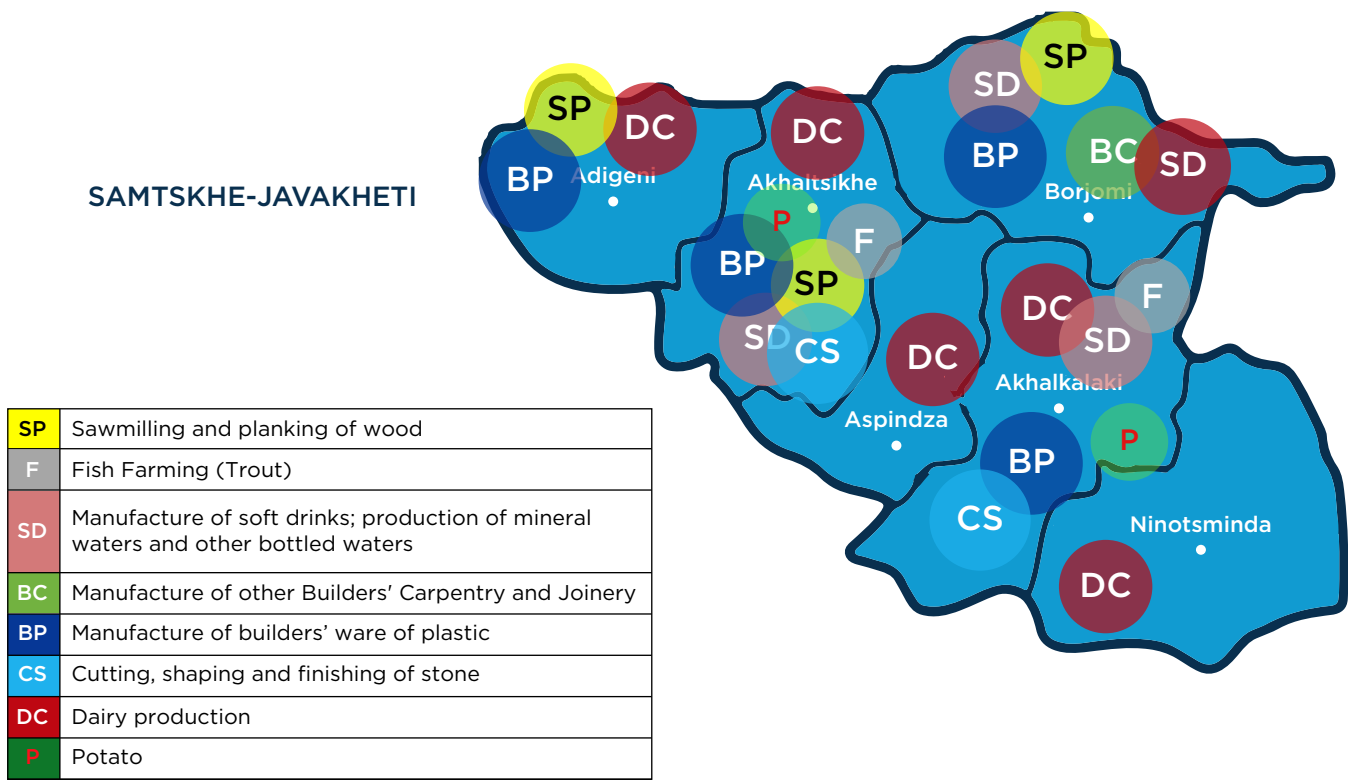
Source: GeoStat.

Table 98: Distribution of number of enterprises in Samtskhe-Javakheti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Potato	9	0	0	9	0%	0%	100%	24,61

Source: GeoStat; UNIDO.

Map 24: Cluster location



Source: UNIDO

2.7 Overview of Guria and its clusters

2.7.1 Overview of the region and its economy

Guria is a west Georgian region covering 2.9 per cent of the country. Its total area equals to 2,033 km². The population as of 2019 is 109,396 people, or about 3 per cent of the country's total population. The region is bordered on west by the Black Sea, the north-west by the Samegrelo-Zemo Svaneti region, the north by Imereti and the south by the Adjara Autonomous Republic. The Guria region has three administrative districts: the Ozurgeti, Chokhatauri and Lanchkhuti municipalities. The region's administrative center is the town of Ozurgeti. There are total 189 settlements in Guria, among them two towns, five townlets/urban settlements) and 182 villages. Among them, more than ten villages in Ozurgeti and Chokhatauri districts belong the category of high-mountainous villages. Twenty-six point four per cent of population lives in towns and townlets and 73.6 per cent in the villages. The population density is 69 people per 1 km². Ninety-six percent of the population are ethnic Georgians.

The region is rich with water resources. There are 25 medium and small rivers, three lakes and three artificial water reservoirs. There are also reserves of mineral waters (primarily Nabeglavi but also Guliani). Guria possesses the Black Sea coastal magnetic sand beaches of Ureki-Natanebi-Shekviteli which have unique balneology characteristics. The region has rich forest resources as 48 per cent of its territory (total 81.2 thousand ha) is covered by forests. In terms of energy generation, Guria has considerable potential through its hydro resources, which are not fully utilized. There are two hydropower plants operating and one more is under construction in the region. There is also the potential for available alternative energy sources (wind, thermal water, biogas, biomass). As for minerals and ore resources, these include bentonitic clay, peat/turf, apatite, red iron ore, copper, kaolin (china clay), syenite, ochre, gold, tufa, limestone, gravel/sand as well as some raw oil.

Guria is the smallest region of Georgia by its total land area. Agriculture is the leading sector of the region's economy with the main sub-sectors including the production of corn and hazelnuts/nuts as well as tea production (during Soviet times Guria used to be the biggest tea producing region) and citrus production. Currently, kiwi and blueberry (also other berries) production also occupy significant places in local agriculture/agribusiness. Relatively lesser developed agricultural activities include livestock farming, pig farming, sheep and goat farming, poultry farming, aquaculture (trout and pond fish farming) and apiculture. Wine and fruits are mostly produced by local farmers for own home consumption. Among the export-oriented local agricultural products that should be named are citruses (mainly exported to Ukraine, Azerbaijan and Armenia) and hazelnuts (mainly exported to the Czech Republic, Germany and Iraq). Local kiwi fruit and blueberry products are also destined for export and the mineral water Nabeglavi goes for export as well.

Among the non-agrarian economic sectors, the most significant shares belong to activities in the service, trade and tourism sectors. Industry is relatively less developed in the region, but there are very important industrial operations such as the Supsa Oil terminal and large enterprises like mineral water bottling company Tskali Margebeli (Healthy Water) which produces famous mineral water Nabeghlavi as well as Bakhmaro spring water and various non-alcohol beverages (Rauch juices, ice-tea, lemonades, etc.), the tea production plant Geoplant (producing 60 types of tea products), also electric energy production plants as well as various other enterprises for production of bread, flour, beer, non-alcohol drinks, ground clay, inert materials, etc.

The tourism sector is developed in the Black Sea coastal resort area, particularly Ureki (famous for its unique magnetic sand beach and the heightened magnetic field that provides natural healing qualities against the cardiovascular, pulmonary and loco-motorium related diseases) as well the resort areas of Grigoleti and Maltakva, where the tourism infrastructure (guesthouses/small hotels, food outlets) is quite developed. As for the mountainous resorts, there are climatic resort areas such as Bakhmaro (situated at 1,926 m above sea level) and Gomismta (2,100-2,755 m above sea level). Together with the nearby lake Chinchao (2,500 m above the sea level) as well as the balneology resorts Nabeglavi and Nasakirali in the Ozurgeti district. These are the most popular tourist destinations. Generally, the combination of Black sea coastal and high mountainous resort zones, plenty of historical-cultural monuments, climatic resorts, mineral waters resorts, attractive rich nature and the unique Kolkhety National Park (with its organized infrastructure) provide the possibility for tourist activities such recreational, eco-tourism, agro-tourisms, adventure tourism, bird-watching tourism, fishing tourism, etc.

According to the statistics, in 2018, the employment rate and economic activity was relatively high, compared to the Georgian average.

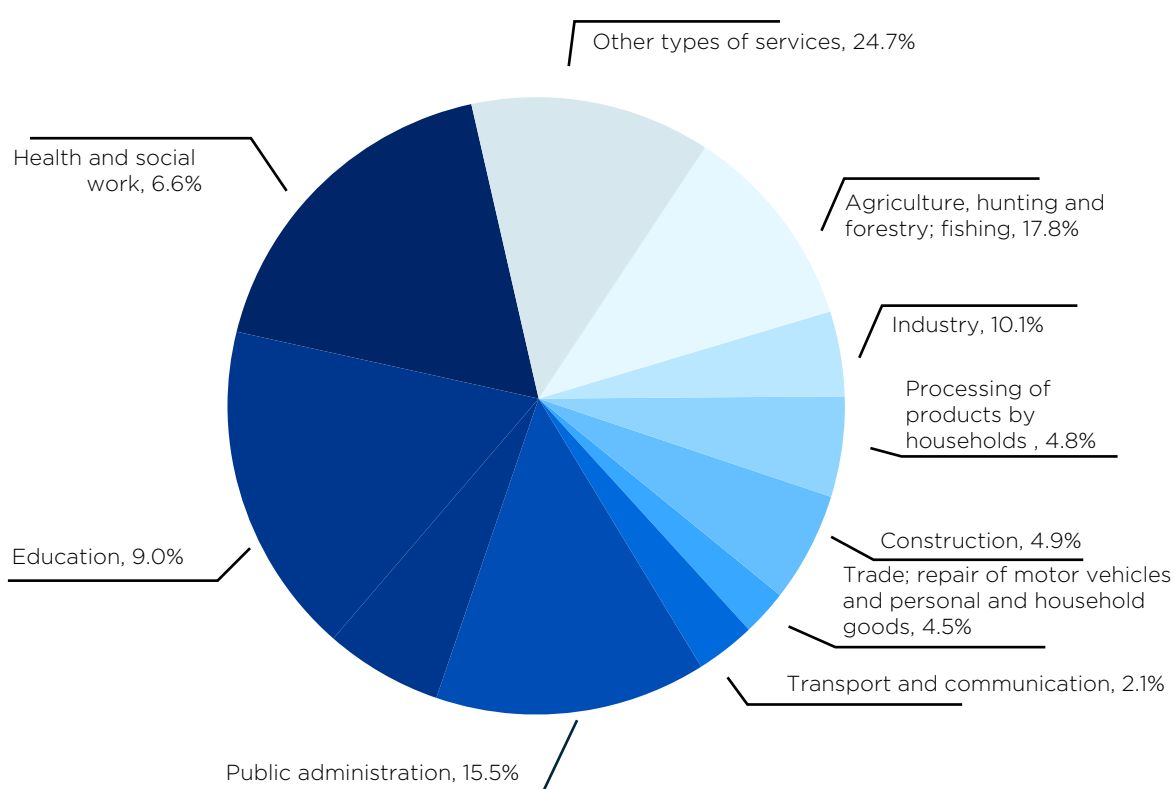
Table 99: Employment data

INDICATOR	GURIA	GEORGIA
Unemployment Rate	1.8 %	12.7 %
Economic Activity Rate	71.8 %	63.9 %
Employment Rate	70.5 %	55.8 %

Source: GeoStat.

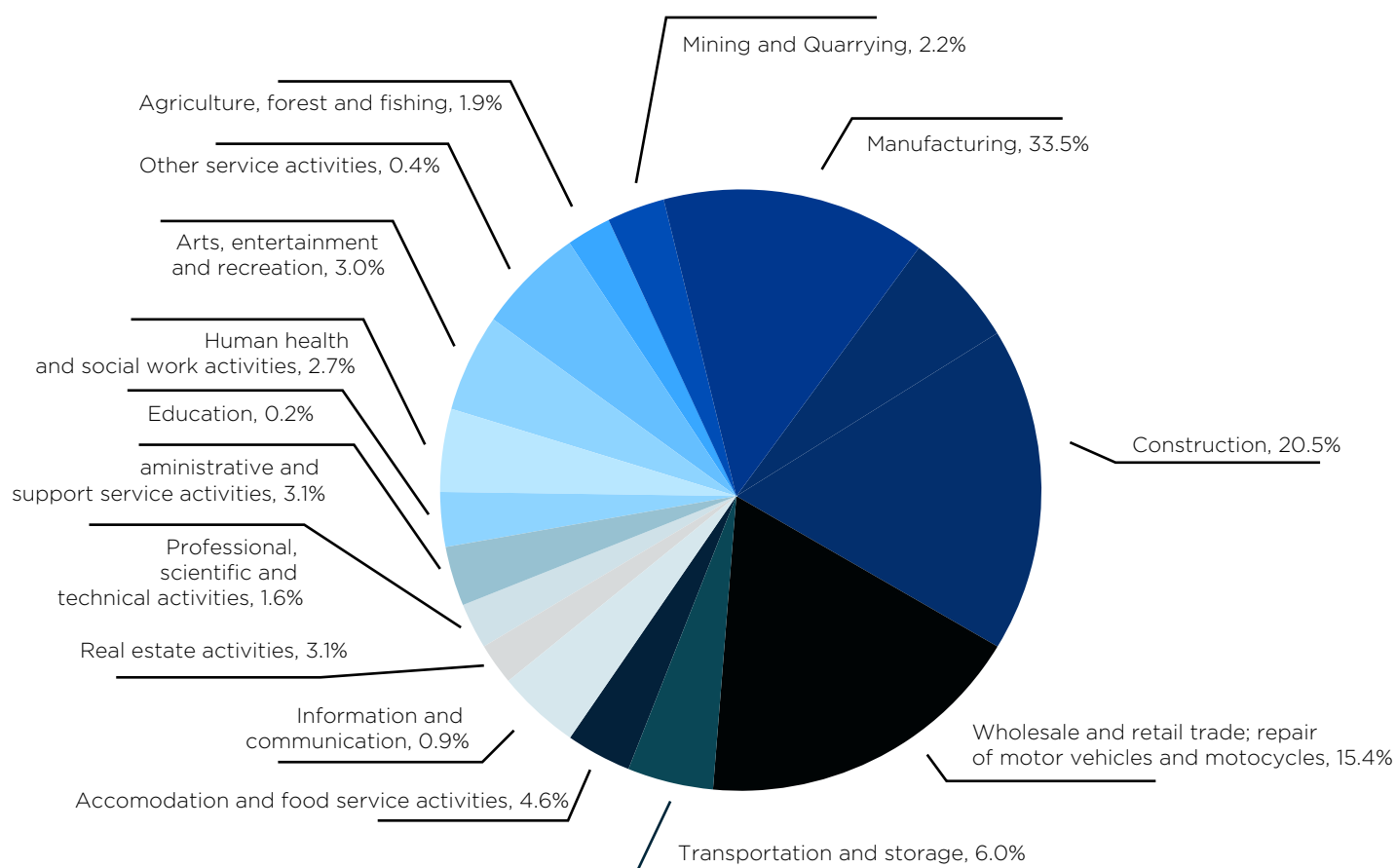
Guria is an agrarian region, with the non-agrarian sector providing an insignificant share of GDP and value added. Due to the low urbanization level in the regional cities, development of industrial sector is not expected in the near future, either.

Figure 19: Regional GDP by economic activities, 2017



Source: GeoStat.

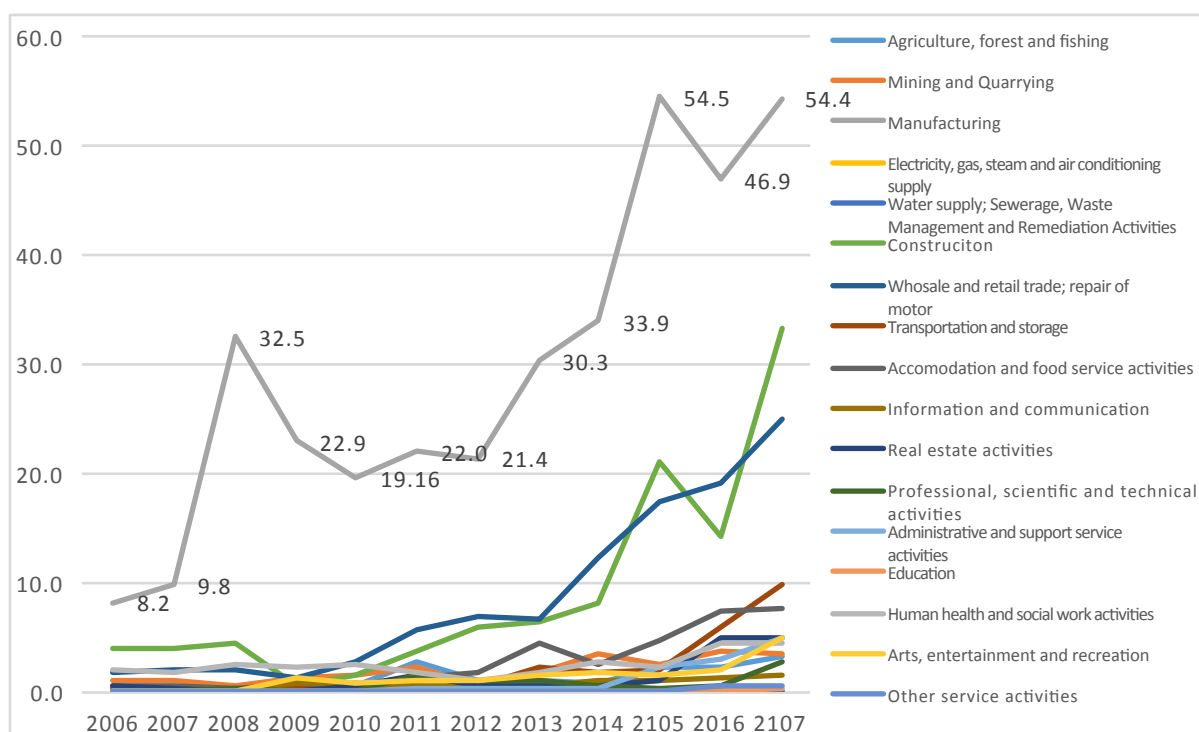
Figure 20: Regional Value Added by economic activities, 2017



Source: GeoStat.

The growth of the value added by the main sectors of the economy was quite significant in the last few years. The key sectors in Guria such as manufacturing, construction and retail trade showed impressive growth. The figure below shows the dynamics of the value added by sectors in Guria.

Figure 21: Value Added in Guria by economic activities, 2006-2017 (Mln GEL)



Source: GeoStat.

Value added in manufacturing increased from 8.2 mln GEL in 2006 up to 54.4 mln GEL in 2017. The construction sector value added increased from 3.9 mln in 2006 up to 33.2 mln GEL in 2017. The trade sector value added increased from 1.7 mln GEL in 2006 up to 24.9 mln GEL in the same period. The figure below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Table 100: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forest and fishing	244%	206%	39%	-
Mining and Quarrying	775%	214%	29%	-89%
Manufacturing	154%	109%	30%	100%
Electricity, gas, steam and air conditioning supply	-	-	-	-
Water supply; Sewerage, Waste Management and Remediation Activities	-	-	-	-
Construction	463%	285%	0.3%	100%
Wholesale and retail trade; repair of motor vehicles and motorcycles	261%	279%	166%	200%
Transportation and storage	1840%	1540%	469%	-100%
Accommodation and food service activities	317%	178%	332%	-
Information and communication	275%	288%	122%	400%
Real estate activities	733%	633%	93%	-100%
Professional, scientific and technical activities	160%	82%	24%	-
Administrative and support service activities	1567%	900%	104%	-
Education	-	100%	100%	-
Human health and social work activities	330%	256%	53%	100%
Arts, entertainment and recreation	433%	332%	203%	800%
Other service activities	-	-	1243%	-

Source: GeoStat.

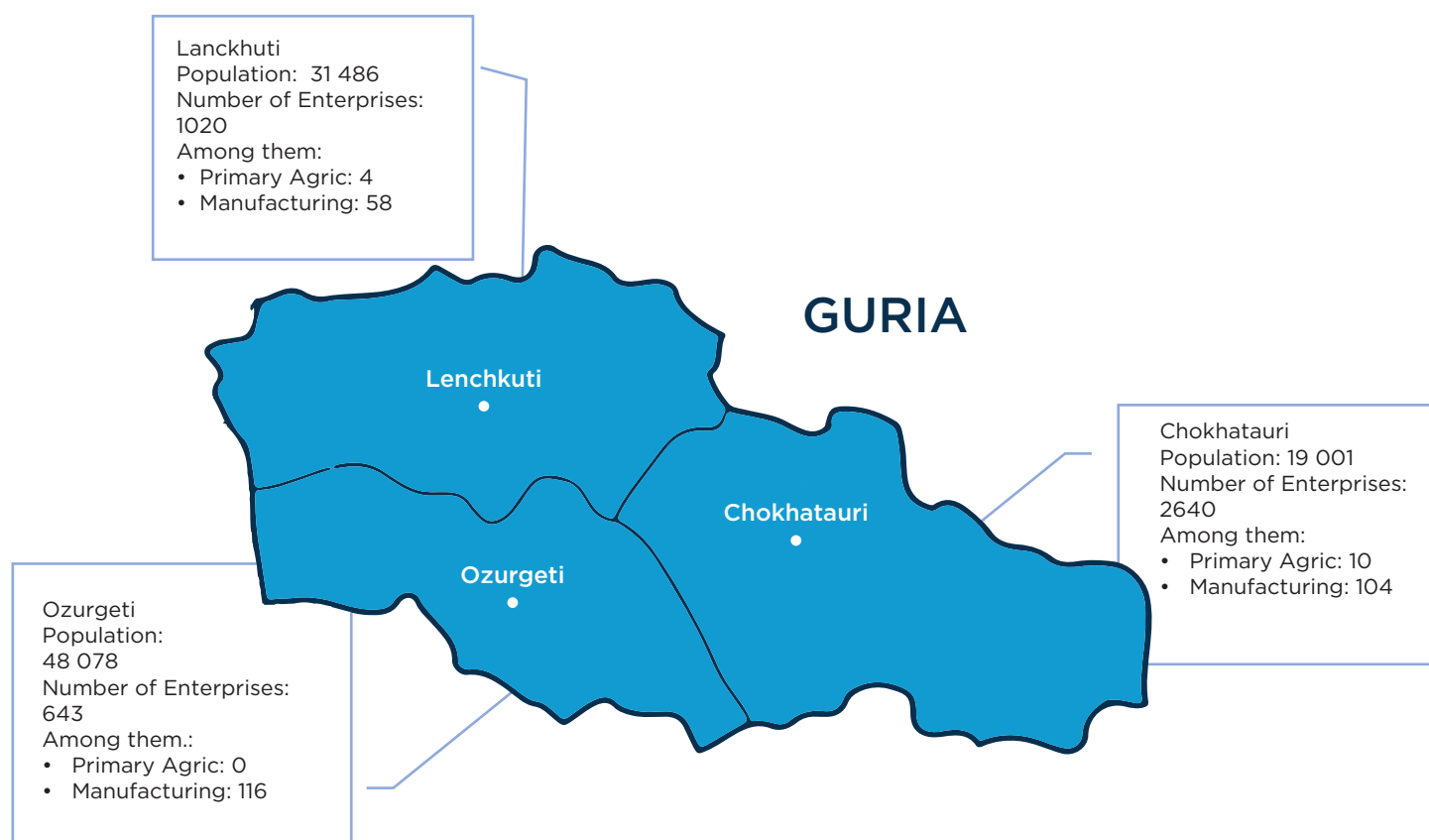
In the past five years, the industries which gained momentum in terms of value added were transportation and storage (1,840 per cent growth), administrative and support service activities (1567 per cent growth), mining and quarrying (775 per cent growth), real estate activities (733 per cent growth) and construction (463 per cent growth).

In the past five years, the industries which gained momentum in terms of output were transportation and storage (1,540 per cent growth), administrative and support service activities (900 per cent growth) and real estate activities (633 per cent growth).

In terms of employment growth figures, the leading sectors are transportation and storage (469 per cent growth), accommodation and food service activities (332 per cent) and arts, entertainment and recreation (with 203 per cent growth).

Dynamic sectors in investments in fixed assets include arts, entertainment and recreation (with 800 per cent growth), manufacturing (427 per cent growth), information and communication (400 per cent). Next follows the wholesale and retail trade/ repair of vehicles (200 per cent growth).

Map 25: Administrative map of Guria with key figures



Source: GeoStat.

2.7.2 Past relevant studies

There were several value-chain studies carried out in Georgia in the past. A summary of these findings is given below:

Table 101: The list of priority sectors identified by strategy

EXISTING VALUE CHAINS IN GURIA	SOURCE
Tea	The Georgian tea sector: a value chain study. ISET /Agricultural Policy Research Center /CARE/ ENPARD. 2015.
Trout	The Georgian trout sector: a value chain Study. ISET /Agricultural Policy Research Center /CARE/ ENPARD. 2016.

Source: UNIDO

Furthermore, Guria Strategy established priorities vis-à-vis the following sectors in the region for 2014 – 2021.

Table 102: The list of priority sectors identified by strategy

PRIMARY AGRICULTURE/AGRO PROCESSING	MANUFACTURING
Hazelnut Citrus Blueberry Other sectors relevant to region	Non-Alcoholic Drinks and Mineral Waters Production Canning industry (Canned Natural Juices, Jams), Production of Dried Fruits Support to mining and processing industries (Askana ' Clay, Tuff, Granite, Red Iron, Finishing Materials, etc.) Wood Processing industries

Source: Guria Regional Development Plan 2014-2021.

2.7.3 Regional statistical analysis

Using the constructed data about employment by industry and region, LQs are calculated for Guria region. The table below provides information about the general characteristics of the selected sectors, such as the number of employees, the number of active companies and their LQs.

As it is seen in the table above, sub-sectors such as the finishing of textiles and forging, pressing, stamping and roll-forming of metal; powder metallurgy have the largest LQs, meaning that these sectors have the most concentration in the Guria region. Interestingly, such sectors as other processing and preserving of fruit and vegetables (20 companies), support activities for animal production (four companies) and the processing of tea and coffee (13 companies) form the agriculture-related sectors that are within the top 20 concentrated sectors in Guria.

Table 103: Top 20 Economic Sectors by LQ Guria region

NACE Code	Sectors	Employment	LQ	N of Enterprises
13.30	Finishing of textiles	107,65	48,00	2
25.5	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	4,44	22,45	2
49.32	Taxi operation	134,30	12,06	14
90.04	Operation of arts facilities	322,94	7,73	6
10.39	Other processing and preserving of fruit and vegetables	147,62	6,56	20
10.85	Manufacture of prepared meals and dishes	15,55	6,15	7
08.12	Operation of gravel and sand pits; mining of clays and kaolin	158,73	6,12	25
81.29	Other cleaning activities	107,65	5,03	2
32.50	Manufacture of medical and dental instruments and supplies	4,44	4,92	2
01.62	Support activities for animal production	8,88	4,73	4
42.21	Construction of utility projects for fluids	407,64	4,72	6
43.39	Other building completion and finishing	4,44	4,11	2
43.32	Joinery installation	4,44	3,85	2
85	Education	4,44	3,70	2
10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	440,93	3,62	67
10.83	Processing of tea and coffee	28,87	3,55	13
47.21	Retail sale of fruit and vegetables in specialized stores	124,37	3,38	56
47.42	Retail sale of telecommunications equipment in specialized stores	28,87	3,35	13
47.29	Other retail sale of food in specialized stores	22,21	3,03	10
31	Manufacture of furniture	11,10	2,97	15

Source: UNIDO

It should be mentioned that the top 20 economics sectors by LQs cover not only the finishing of textiles, but there are service sectors as well (in addition to other sub-sectors that are not relevant for our study, like trade, education, etc.). However, since the scope of the report does not cover service industry, for a detailed analysis, the report excluded the service sectors and other non-relevant sub-sectors. One important issue that can be easily captured from the table is the low number of companies in selected industries. This indicates the following: even though the sectors have high LQs, the number of companies still can be low. Therefore, small number of companies may limit the possibility of cluster formation.

According to the applied LQ methodology, the intersecting sectors were selected so to ensure that the selected sectors have high LQs and at the same time, cover a large number of companies.

The table below summarizes the top 20 sectors by LQ and by the number of enterprises (only agriculture and manufacturing) in Guria. It should be mentioned that the sectors of other processing and preserving of fruit and vegetables and the processing of tea and coffee from agriculture are detected in the list. The majority of listed sectors are from the manufacturing industry. The LQs range between 6.56 and 3.62 which are higher than the predetermined threshold of 1.25. Also, the number of companies is big enough: in the range of 20 and 13.

Table 104: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
13.30	Finishing of textiles	107,65	48,00	2	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	420,93	3,62	67
25.5	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	4,44	22,45	2	22.23	Manufacture of builders ware of plastic	82,17	2,22	37
10.39	Other processing and preserving of fruit and vegetables	147,62	6,56	20	08.12	Operation of gravel and sand pits; mining of clays and kaolin	158,73	6,12	25
10.85	Manufacture of prepared meals and dishes	15,55	6,15	7	10.39	Other processing and preserving of fruit and vegetables	147,62	6,56	20
08.12	Operation of gravel and sand pits; mining of clays and kaolin	158,73	6,12	25	23.61	Manufacture of concrete products for construction purposes	39,98	1,26	18
32.50	Manufacture of medical and dental instruments and supplies	4,44	4,92	2	10.83	Processing of tea and coffee	28,87	3,55	13
01.62	Support activities for animal production	8,88	4,73	4	01.61	Support activities for crop production	25,45	0,91	11
10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	440,93	3,62	67	31.09	Manufacture of other furniture	24,43	0,43	11
10.83	Processing of tea and coffee	28,87	3,55	13	16.10	Sawmilling and planking of wood	22,21	2,15	10
31	Manufacture of furniture	11,10	2,97	5	25.12	Manufacture of doors and windows of metal	22,21	2,12	10
02.20	Logging	13,33	2,84	6	10.85	Manufacture of prepared meals and dishes	15,55	6,15	7
10.61	Manufacture of grain mill products	112,09	2,82	4	11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	118,75	2,58	7
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	118,75	2,58	7	02.20	Logging	13,33	2,84	6
02.10	Silviculture and other forestry activities	4,44	2,56	2	10.72	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	13,33	0,61	6
03.22	Freshwater aquaculture	4,44	2,22	2	31	Manufacture of furniture	11,10	2,97	5
22.23	Manufacture of builders of plastic	82,17	2,22	37	01.62	Support activities for animal production	8,88	4,73	4
02.40	Support services to forestry	6,66	2,19	3	10.61	Manufacture of grain mill products	112,09	2,82	4
16.10	Sawmilling and planking of wood	22,21	2,15	10	01.47	Raising of poultry	8,88	0,27	4
25.12	Manufacture of doors and windows of metal	22,21	2,12	10	02.40	Support services to forestry	6,66	2,19	3
25.62	Machining	4,44	1,97	2	10.11	Processing and preserving of meat	6,66	1,71	3

Source: UNIDO

The manufacture of bread/manufacture of fresh pastry goods is the sector with the highest number of companies, followed by the manufacture of other furniture and the manufacture of builders' ware of plastic. However, the LQs in these sectors are quite modest if we compare them with the corresponding indicator for the sectors of other processing and preserving of fruit and vegetables and the processing of tea and coffee. Based on analyses, the following identified sectors were shortlisted for further analysis.

Table 105: Shortlisted sectors by number of enterprises in Guria (LQ More than 1,25) (Only Agriculture and Manufacturing)

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
08.12	Operation of gravel and sand pits; mining of clays and kaolin	158,73	6,12	25
10.39	Other processing and preserving of fruit and vegetables	147,52	6,56	20
10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	440,93	3,62	67
10.83	Processing of tea and coffee	28,87	3,55	13
22.23	Manufacture of builders' ware of plastic	82,17	2,22	37

Source: UNIDO

2.7.4 Analysis of potential clusters

The results of the regional statistical analysis have revealed the list of sub-sectors which showed higher concentration and growth of the number of enterprises in the region. After combining this statistical analysis with information presented during interviews and collected from available reports and studies the following potential cluster has been identified: 1) the operation of gravel and sand pits; mining of clays and kaolin, 2) other processing and preserving of fruit and vegetables, 3) the manufacture of bread; the manufacture of fresh pastry goods and cakes, 4) the processing of tea, and 5) the manufacture of builders' ware of plastic production.

Operation of gravel and sand pits; mining of clays and kaolin: There are 25 companies that operate gravel and sand pits; mining of clays and kaolin. Twenty of them are located in Ozurgeti and five of them in Lanchkhuti.

Table 106: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Operation of gravel and sand pits; mining of clays and kaolin	5	20	0

Source: GeoStat.

The majority of the above companies are small (24 out of 25) and only one company is of medium size. There is no cooperation between the companies.

Table 107: Distribution of number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Operation of gravel and sand pits; mining of clays and kaolin	25	0	1	24	0%	4%	96%	158,73

Source: GeoStat; UNIDO.

Other processing and preserving of fruit and vegetables: this is a sub-sector of processing and preserving of fruit and vegetables industry, which includes the following categories: the processing and preserving of potatoes, the manufacture of fruit and vegetable juice and other processing and preserving of fruit and vegetables. In total, there are 20 companies in this industry. The majority of these companies are located in Ozurgeti, one company is in Lanchkhuti and one in Chokhatauri.

Table 108: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Other processing and preserving of fruit and vegetables	2	9	2

Source: GeoStat.

The companies in the processing and preserving of the fruit and vegetables industry are mostly small-sized. Only one medium-size company is operating.

Table 109: Distribution of number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Other processing and preserving of fruit and vegetables	15	0	1	14	0%	7%	93%	123

Source: GeoStat; UNIDO.

Unfortunately, Kakhetian Traditional Winemaking Agro Chokhatauri LLC has stopped the production of juices and beverages. It should be noted that cooperation among the companies operating in this sector is not strong.

Manufacture of bread; manufacture of fresh pastry goods and cakes: There are a total of 67 companies operating in sectors of the manufacture of bread; manufacture of fresh pastry goods and cakes in Guria. The majority of these companies are located in Ozurgeti. Seventeen companies are in Lanchkhuti and 11 in Chokhatauri.

Table 110: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Manufacture of bread; manufacture of fresh pastry goods and cakes	17	39	11

Source: GeoStat.

The majority of these companies are small-sized. Only one company is large.

Table 111: Distribution of number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of bread; manufacture of fresh pastry goods and cakes	67	1	0	66	1%	0%	99%	440,93

Source: GeoStat; UNIDO.

Despite a large number of companies in the sector, there is no cooperation among them.

Tea: This is the sector with clear regional concentration (it spans across all municipalities of the region). There are 13 companies operating in the sector. The majority of these companies are located in Ozurgeti, ten companies are in Lanchkhuti and two in Chokhatauri.

Table 112: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Processing of tea and coffee	2	9	2

Source: GeoStat.

All these companies are small-sized.

Table 113: Distribution of number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Processing of tea and coffee	13	0	0	13	0%	0%	100%	28,87

Source: GeoStat; UNIDO.

During the Soviet period, Guria was the biggest producer of raw tea and of processed tea products in Georgia. After independence, the majority of tea plantations were privatized and since that period has not been processing. Accordingly, many of the existing tea plantations need rehabilitation. In this respect, the Government of Georgia started the Georgian Tea Plantation Rehabilitation Program. The majority of the existing tea processing enterprises were purchased by the German company Martin Bauer. Currently, a company is operating under the name Geoplant LLC and is producing tea and tea products under the brand names of Gurieli Export and Rcheuli. Besides Geoplant LLC, up to 20 small and medium tea processing plants within the region are operating, producing black, green, white and red tea products. However, the volume of their production is too small to enter the international market. From the end of 2005, Georgia is importing more tea from abroad than it exports. Accordingly, development of this sector will facilitate import substitution and support the production of export-oriented products in the country.

Manufacture of builders' ware of plastic: Out of a total 37 companies in the manufacture of builders' ware of plastic sector in Guria, 16 companies are located in Lanchkhuti, 16 in Ozurgeti and five in Chokhatauri. All these companies are categorized as small.

Table 114: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Manufacture of builders' ware of plastic	16	16	5

Source: GeoStat.

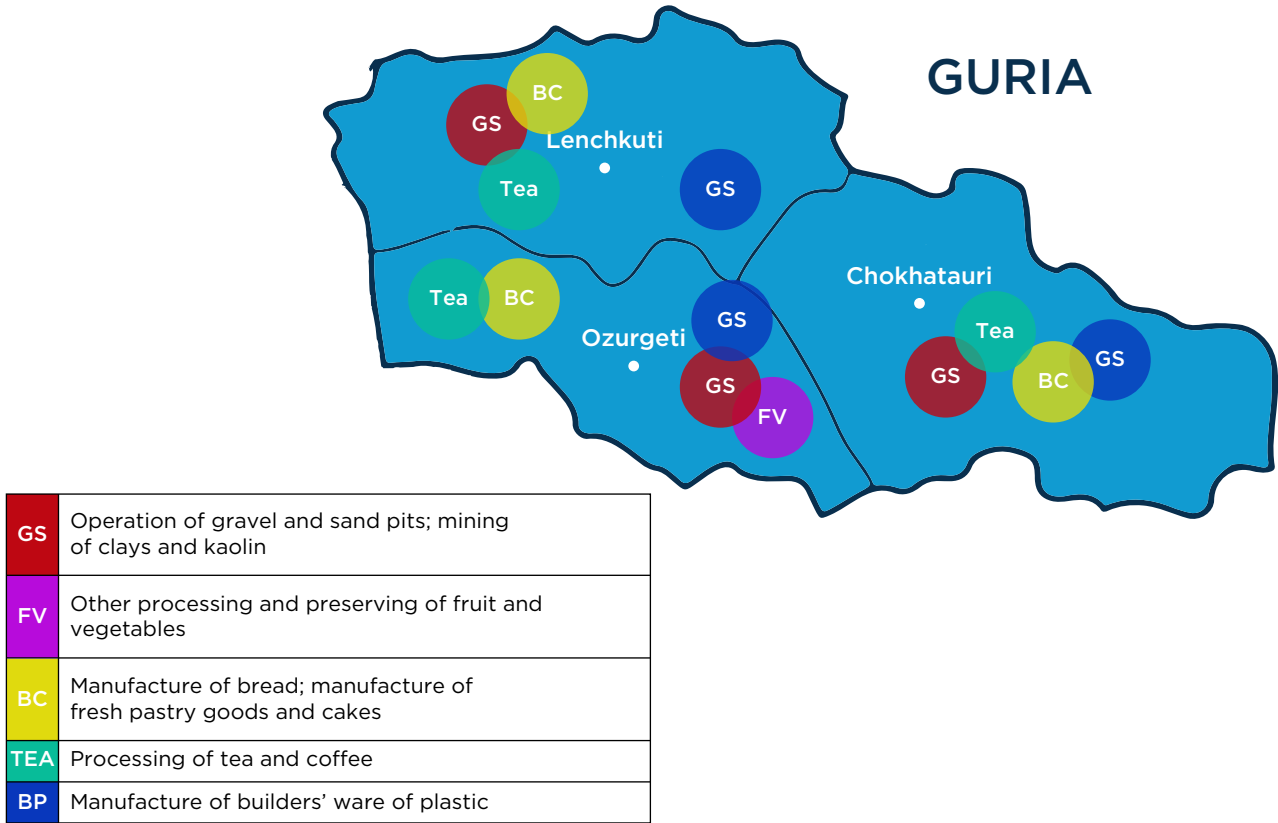
Table 115: Distribution of the number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of builders' ware of plastic	37	0	0	37	0%	0%	100%	82,17

Source: GeoStat; UNIDO.

All mentioned companies have local private ownership. No cooperation exists among these companies.

Map 26: Cluster location



Source: UNIDO

2.7.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, potato production was found to be noteworthy but did not end up in the statistical analysis due to lack of official statistics.

Hazelnut: Another important sector that is developing in Guria is hazelnut production. Hazelnut occupies a top export-oriented position among the agricultural product produced in the country. The sale of hazelnuts is one of the main sources of income for the local rural population. Most of the income generated by local farmers comes from hazelnut production and relevant processing. Currently in the region there are 26 small and medium-sized hazelnut processing enterprises. The majority of them still do not have HACCP or ISO 22000 certificates. This fact prevents them from becoming exporters. Among local companies, Global Export LLC, has the appropriate certificates and is capable of exporting processed hazelnuts.

Official statistics show only three enterprises engaged in hazelnut processing

Table 116: Distribution of number of enterprises by municipalities

Sector Name	Lanchkhuti	Ozurgeti	Chokhatauri
Hazelnut	0	3	0

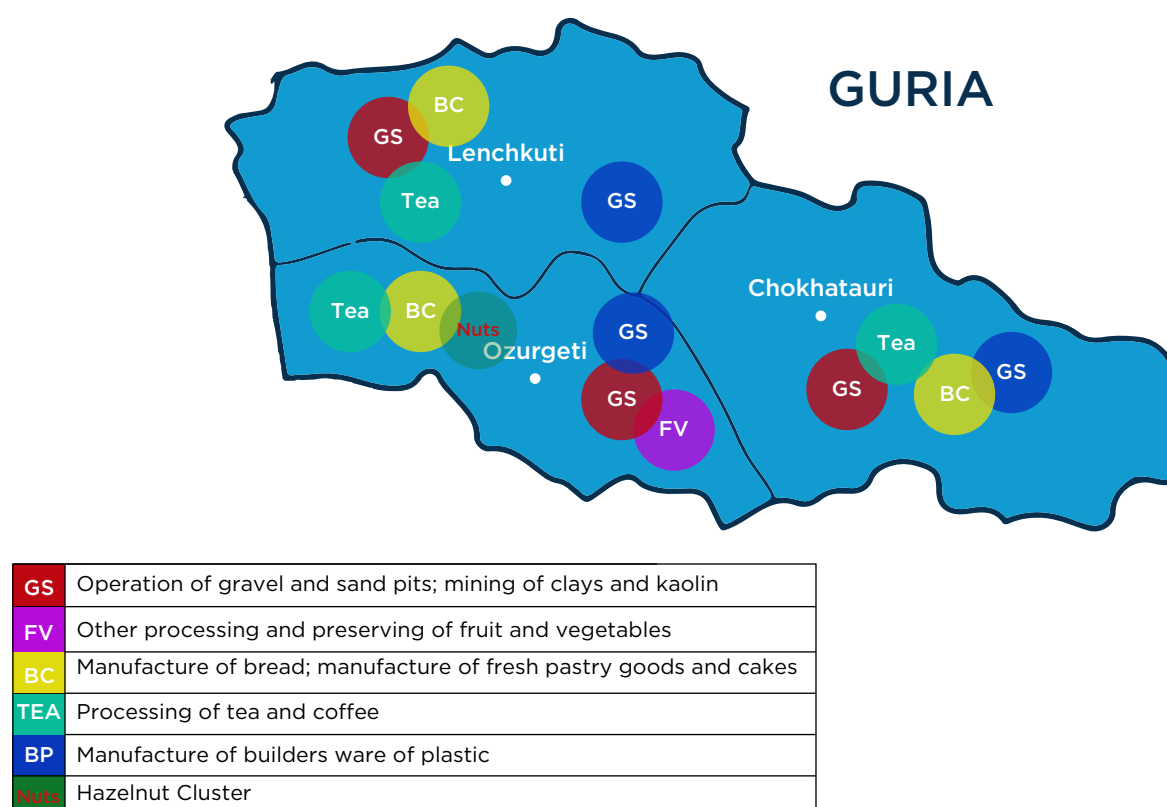
Source: GeoStat.

Table 117: Distribution of number of enterprises in Guria by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Hazelnut	3	0	0	3	0%	0%	100%	6,66

Source: GeoStat; UNIDO.

Map 27: Cluster location



Source: UNIDO.

2.8 Overview of Samegrelo – Zemo Svaneti and its clusters

2.8.1 Overview of the region and its economy

The Samegrelo-Zemo Svaneti region is in west Georgian with a total territory of 7,441 km² (10.8 per cent of Georgia's total territory). The population is 320,800 people as of 2018. About 37 per cent of the region's population resides in the Zugdidi Municipality. Samegrelo-Zemo Svaneti is bordered by the Georgian region of Abkhazia to the west, Imereti to the east, Racha-Lechkhumi and Kvemo Svaneti to the north-east, Guria to the south and to the north, the Russian Federation. The region comprises eight administrative districts including the municipalities of Zugdidi, Khobi, Abasha, Senaki, Martvili, Chkhorotsku, Tsalenjikha and Mestia as well as the self-governing town of Poti. The region includes 497 settlements, including eight towns, two townlets and 487 villages. Forty point three per cent of the population lives in the towns/townlets and 59.7 per cent live in villages. High mountain settlements (over 1,000 m) include 136 villages of the Mestia the Municipality and one village of Martvili Municipality. The population density is 64 people per km². Ninety-eight point six per cent of the population are ethnic Georgians.

The region is characterized by rich natural resources, particularly an abundance of water resources. There are 2,400 large and small rivers in the region in addition to the Black Sea coast area, 13 lakes with about 65 km² of total surface area as well as the Jvari Water Reservoir. The largest share of electricity consumed in Georgia is generated in the Samegrelo-Zemo Svaneti region. There are five working hydropower stations (including the Enguri HPP) with their aggregate output equaling to 4,350 million kwt/hr. This, along with favorable natural conditions for additional power generation capacities, determines the region's special importance for the country's economy in terms of energy security. Additionally, the region possesses high potential for alternative and renewable energy generation sources: wind, solar, geothermal water, biogas, etc. The Samegrelo -Zemo Svaneti region is characterized by an abundance of forest resources. Forests cover 41 per cent of the region's area. The total forest fund in the region comprises 276,300 hectares, 259,700 (94 per cent) of which is covered with forest. There is a wide range of mineral resources within the region including tuff (with four key deposits and additional smaller ones, non-ferrous metals – gold, silver, lead, copper, zinc, cobalt, silver. There are also facing stones, marble deposits, gravel, limestone, magmatic rock as well as gypsum, anhydrite, barite, brick clay and other resources. There are also significant reserves of mineral and thermal waters, pure potable and healing waters in the region.

Agriculture is the principal significant sector of the Samegrelo-Zemo Svaneti economy, with the majority of the region's capable population engaged in this sector; most of them being self-employed and working in their household farms. At the same time, the region is not rich with arable lands due to extremely irregular relief of agriculture lands having great height differences and deep gorges (the northern part of Samegrelo, Zemo Svaneti), and wide plains (the southern part of the region between rivers Enguri and Tskhenistskali). This, along with other factors, means that land fragmentation that significantly complicates the consolidation of farms. The total area of the region's arable lands is 268,000 ha. The majority of the rural household owns parcels smaller than 1.25 ha. The main crops produced in the region include corn (which is the main agricultural crop)/cereals, hazelnuts/nuts, vineyards, subtropical crops (persimmon, feijoa, kiwi, and medlar), fruits and legumes, citruses and tea and also potatoes and vegetables. The agriculture sector lacks modernization and remains mostly a subsistence farming with the exception of hazelnut production which is almost solely intended for export.

Samegrelo-Zemo Svaneti occupies the leading position among Georgian regions in apiculture activities and honey production, producing one-quarter of the total volume of honey in the country. In the region, there are also sub-sectors such as livestock farming (meat and dairy production), pig farming/pork production, goats farming and poultry farming.

The region possesses significant resources for the development of fishing as and fish-farming through use of the Black Sea and the numerous rivers and lakes in the region. In Poti, there are modernized fish processing factories with the ability to produce various fish products.

As for the industrial sector, it is well-developed in Samegrelo-Zemo Svaneti. Apart from Georgia's main industrial Black Sea port of Poti, the majority of the region's industrial operations are small and medium enterprises. Currently, the region's key products include processed hazelnuts and timber materials. Among the sub-sectors profiled by the particular municipalities it can be mentioned that in the Zugdidi Municipality the production profile includes hazelnut and tea processing; in Abasha, ice cream and confectionery; in Tsalenjikha, timber processing and tea production; in Martvili, tea processing and wine production; in Senaki, wine production; in Poti, fish processing plants for production of cod liver oil, fish powder, meat as well as enterprises engaged in dairy production; in Chkhorotsku, hazelnut production; and in Mestia, timber processing. Currently, In Samegrelo-Zemo Svaneti, eight hazelnut processing enterprises are operating in Zugdidi. In Tsalenjikha, there are five enterprises engaged in hazelnut and tea processing. In Martvili, one enterprise is engaged in tea processing. Hazelnut processing enterprises do eighty per cent of the region's total agricultural products processing output. The region also has ten refrigerated and nine closed warehouses: eight refrigerated warehouses and eight closed warehouses in Poti, one refrigerated warehouse in the Zugdidi Municipality and one refrigerated warehouse and one closed warehouse in the Senaki Municipality.

In terms of export, the key export products of the Samegrelo-Zemo Svaneti region include hazelnuts as well as wine, tea, persimmon and fish powder, laurel leaves and vegetable oils which are exported to EU, CIS, Asian and American markets. Export volume is mostly due to hazelnut export with the key markets including Italy (Ferrero), Germany, Azerbaijan, France, Belgium and Ukraine. Stable export goods also include the Gurieli brand of tea, packaged in Zugdidi.

The Samegrelo-Zemo Svaneti region also possesses a vast potential for diverse tourism and vacation/recreation activities. These range from holidays on the Black Sea coast in Anaklia, the varied tourist opportunities provided by the Kolkheti National Park (which enjoys the status of Ramsar Site as a wetland of international importance) and Paliastomi lake, river canyons and caves of Martvili up to the skiing activities (skiing resorts Tetnuldi and Artsvali) in the Mestia municipality in Zemo Svaneti, a world-famous place of natural beauty which in 1996 was recognized as a place of world heritage by UNESCO. The geographical characteristics and rare natural environment in the region, the abundance of historical/cultural monuments, its landscape mosaic and biological diversity, picturesque mountains and glaciers of Zemo-Svaneti, the Black Sea coastal area and developed resort zones provide unique conditions for such types of tourism as motor, horse, walks and eco-tourism; winter skiing tourism, marine navigation, river navigation/rafting, hunting, fishing, bird-watching, agri-tourism, learning tourism, pilgrimage, extreme tourism, etc.

According to statistics, in 2018 employment rate and economic activity was relatively high compared to the Georgia average.

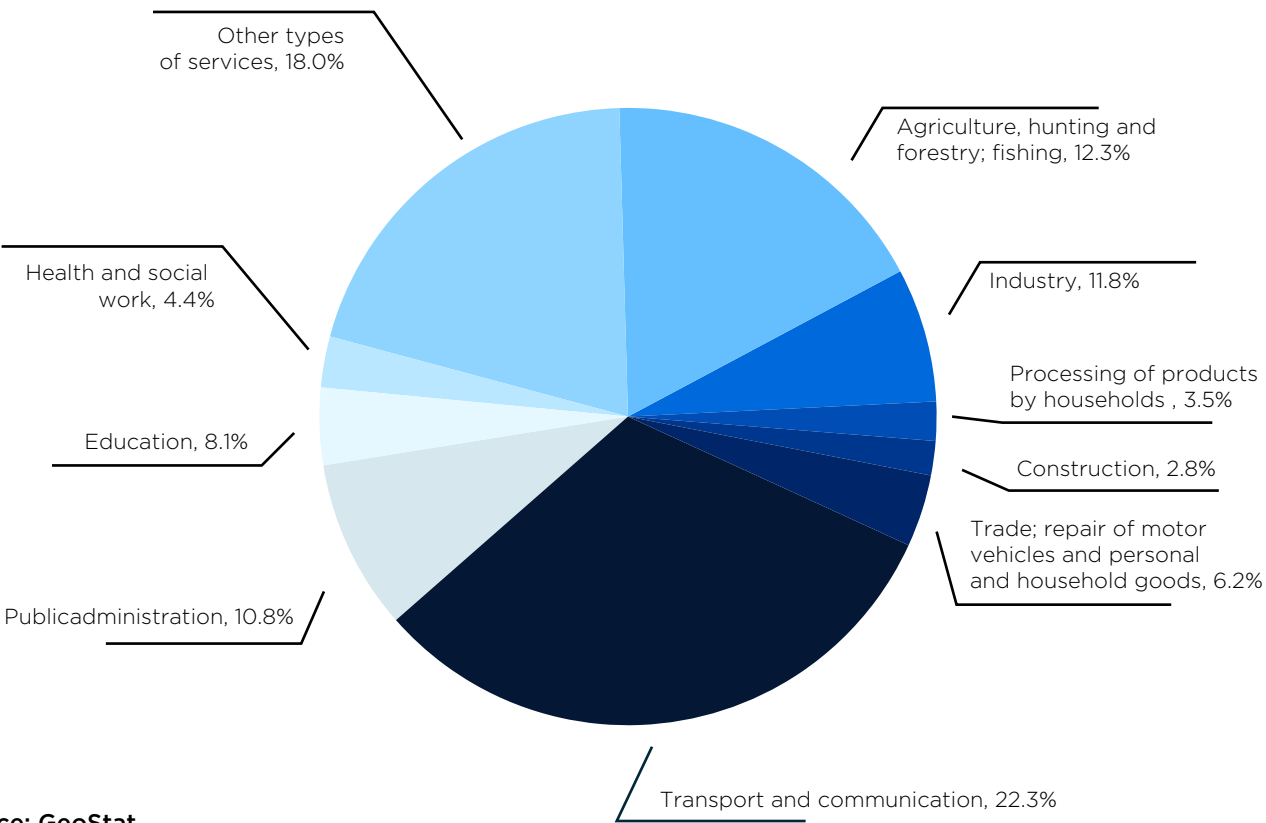
Table 118: Employment data

INDICATOR	SAMEGRELO-ZEMO SVANETI	GEORGIA
Unemployment Rate	11.9 %	12.7 %
Economic Activity Rate	65.4 %	63.9 %
Employment Rate	57.6 %	55.8 %

Source: GeoStat.

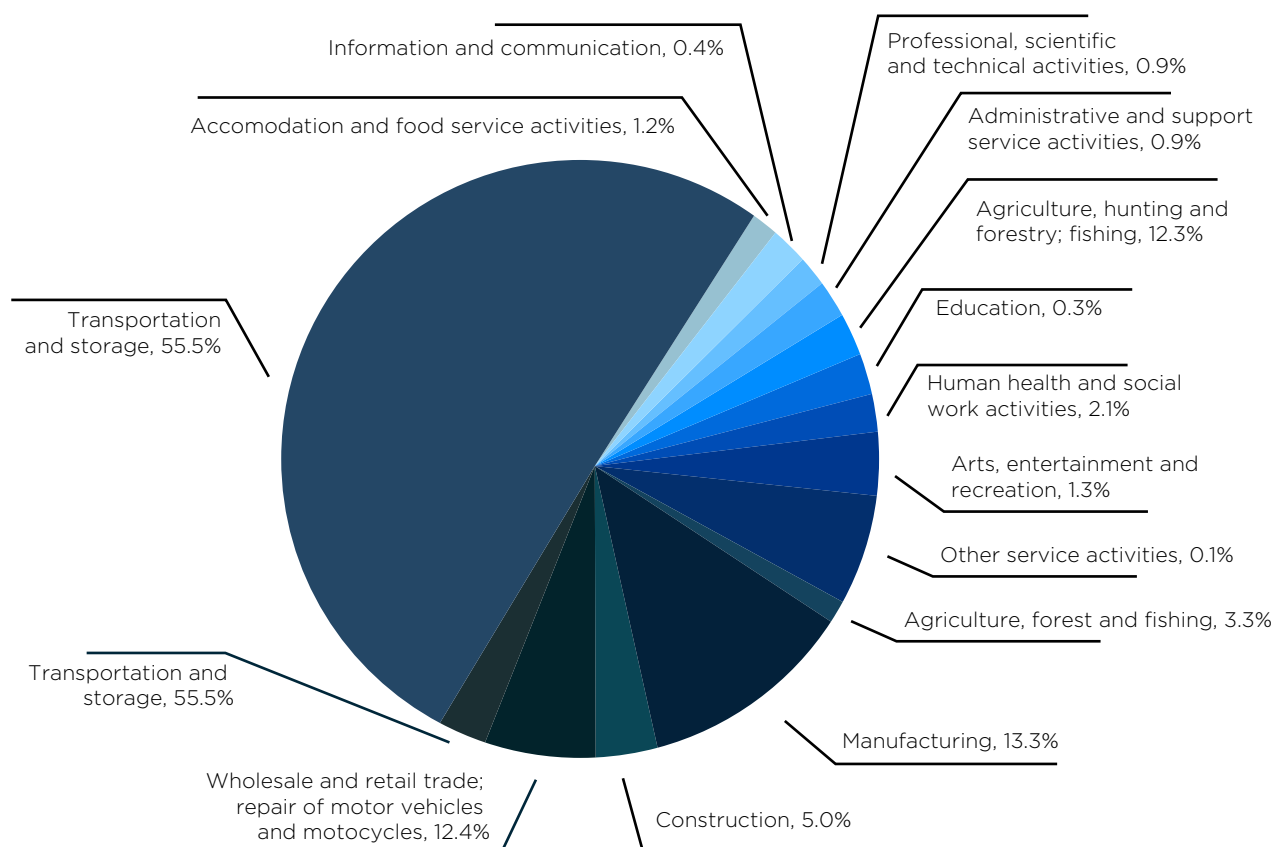
The Samegrelo-Zemo Svaneti region is an agrarian region, with the non-agrarian sector taking an insignificant share of GDP and value added. Production of agricultural products plays a significant role in the regional economy. Due to low urbanization level in the regional cities, the development of industrial sector is not expected soon.

Figure 22: Regional GDP by economic activities, 2017



Source: GeoStat.

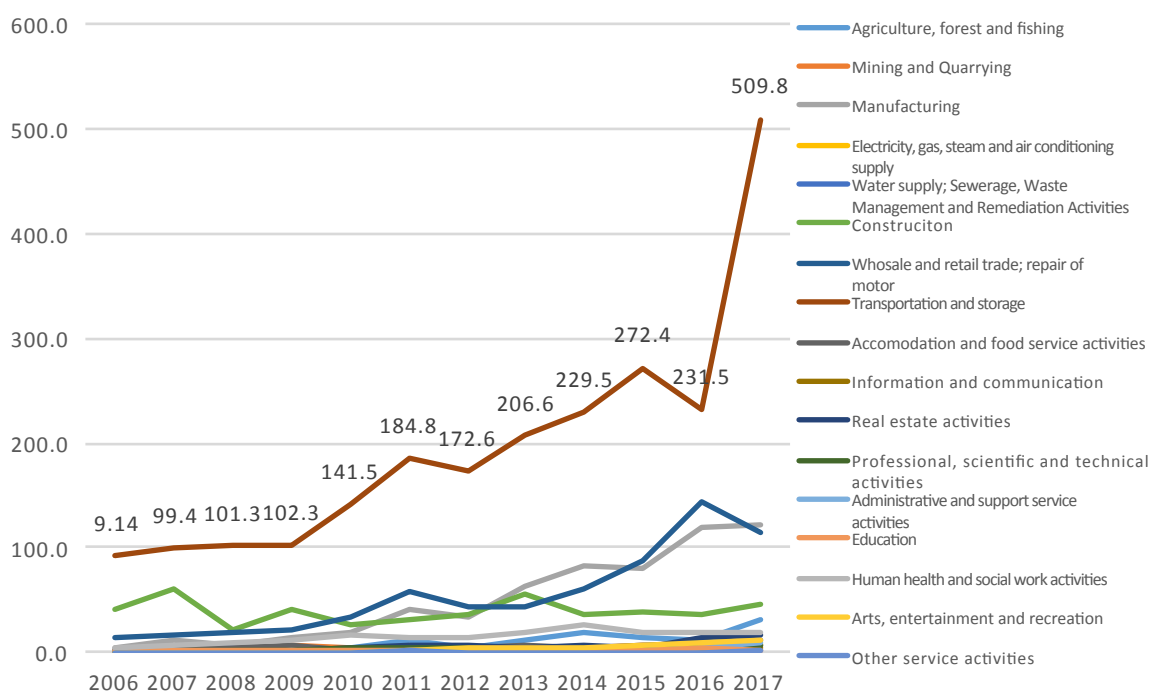
Figure 23: Regional Value Added by economic activities, 2017



Source: GeoStat.

The sector of transportation and storage increased and occupied the biggest share of the regional value added in 2017 with a total 55.5 per cent, with the manufacturing sector taking second place with a 13 per cent share and the wholesale and retail trade sector in third place with 12.4 per cent. The figure below shows the dynamics of the value added by sectors.

Figure 24: Value Added in Samegrelo-Zemo Svaneti by economic activities, 2006-2017 (Mln GEL)



Value added in transportation and storage increased from 91.4 mln GEL in 2006 to 509.8 mln GEL in 2017 (with especially drastic leap made in 2017, after the partial decline in 2016 (231.5 mln GEL) following the previous peak in 2015 (272.4 mln GEL). Manufacturing increased steadily from 0.0 mln GEL in 2006 up to 121.9 mln GEL in 2017. The wholesale and retail trade sector value added increased from 13.8 mln GEL in 2006 up to 113.9 mln GEL in 2017. However, there was a certain decline after the previous peak in 2016 with 143.5 mln. GEL. The figure below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Table 119: Recent Economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forest and fishing	488%	-6%	43%	2232%
Mining and Quarrying	46%	363%	-19%	-95%
Manufacturing	268%	80%	31%	-44%
Electricity, gas, steam and air conditioning supply	306%	-	-54%	52000%
Water supply; Sewerage, Waste Management and Remediation Activities	467%	-	230%	-100%
Construction	27%	64%	-27%	160%
Wholesale and retail trade; repair of motor vehicles and motorcycles	163%	488%	69%	-
Transportation and storage	195%	600%	25%	-66%
Accommodation and food service activities	253%	650%	106%	-100%
Information and communication	255%	-	101%	1300%
Real estate activities	136%	100%	24%	100%
Professional, scientific and technical activities	119%	100%	22%	-67%
Administrative and support service activities	361%	467%	9%	100%
Education	53%	-	14%	100%
Human health and social work activities	26%	100%	7%	120%
Arts, entertainment and recreation	216%	-	-19%	-100%
Other service activities	450%	100%	1062%	0%

Source: GeoStat.

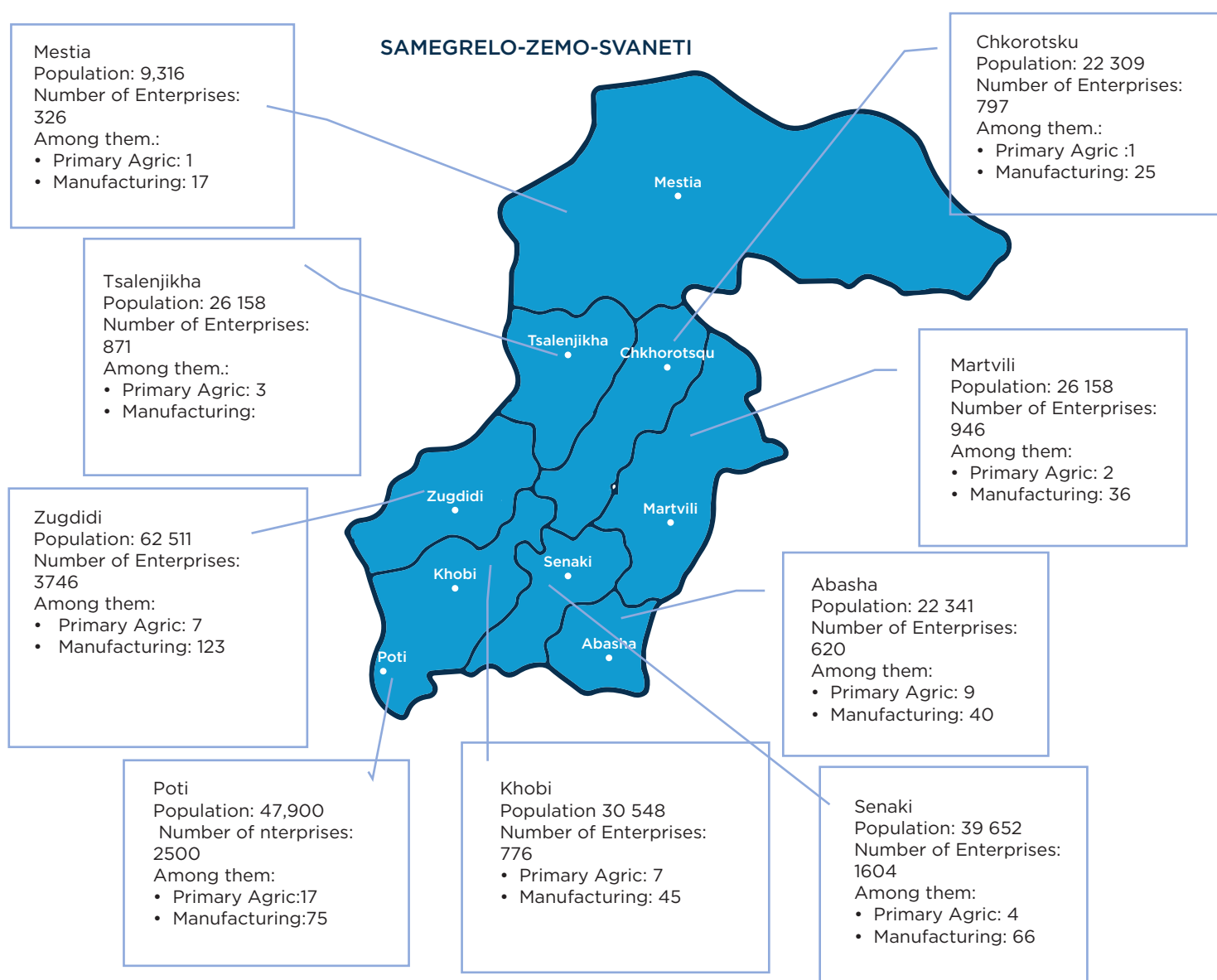
In the past five years, the industries that mostly gained momentum in terms of value added included agriculture, forest and fishing (with 488 per cent growth), water supply; sewerage, waste management and remediation activities (467 per cent growth), administrative and support service activities (361 per cent growth), electricity, gas, steam and air conditioning supply (306 per cent growth), manufacturing (268 per cent growth), information and communication (255 per cent growth), accommodation and food service activities (253) per cent) and transportation and storage (195 per cent).

In terms of output, the leading sectors were: accommodation and food service activities (650 per cent), transportation and storage (600 per cent), wholesale and retail trade/ repair of motor vehicles and motorcycles (488 per cent), administrative and support service activities (467 per cent growth) and mining and quarrying (363 per cent).

For employment, the dynamics as follows: the highest share was occupied by water supply; sewerage, waste management and remediation activities (with 230 per cent) followed by accommodation and food service activities (106 per cent) and information and communication (101 per cent).

Dynamics in investments in fixed assets are distributed between the leading sectors as follows: electricity, gas, steam and air conditioning supply sector is leading by far (with 52,000 per cent), followed next by agriculture, forest and fishing (2,232 per cent) and the third position occupied by information and communication (with 1,300 per cent). All other particular sectors stay far behind.

Map 28: Administrative map of Samegrelo-Zemo Svaneti with key figures



Source: GeoStat.

2.8.2 Past relevant studies

In the past years, there were several value-chain studies carried out in Georgia, which identified value chains (mostly agriculture) that were also developed in the Samegrelo-Zemo Svaneti region.

Table 120: The list of relevant studies

EXISTING VALUE CHAINS IN SAMEGRELO-ZEMO SVANETI	MANUFACTURING
Hazelnut	Georgian Hazelnut Value Chain and Potential for Cooperatives Zurich/mercator Fellowship Of Int. Affairs. 2015
Tea	The Georgian Tea Sector: A Value Chain Study. ISET /Agricultural Policy Research Center /CARE/ ENPARD. 2015.
Trout	The Georgian Trout Sector: A Value Chain Study. ISET /Sgricultural Policy Research Center /CARE/ ENPARD. 2016.
Honey	"Honey Value Chain" - Rural and Agricultural Policy and Development Institute/ The
Greenhouse	"Capacity Building to Agriculture-Related Education and Research Institutions" Project. /ENPARD/EU. 2015
Citrus and berry	

Source: UNIDO

Furthermore, the Samegrelo- Zemo Svaneti Development Strategy established priorities vis-à-vis the following sectors in the region for 2014 – 2021:

Table 121: The list of priority sectors identified by strategy

PRIMARY AGRICULTURE/AGRO PROCESSING	MANUFACTURING
Hazelnut Citruses Blueberry Livestock Fishing and Fish Production Cereals	High Technologies, Biotechnologies, Building Materials, Steel , Canning Industry Light Industry Non-alcoholic Beverages and Mineral Waters Energy /Renewable Energy Timber Processing

Source: Samegrelo- Zemo Svaneti Regional Development Plan 2014-2021.

2.8.3 Regional statistical analysis

Using the constructed data about employment by industry and region, LQs have been calculated for the Samegrelo-Zemo Svaneti region. Table 122 below presents information about the general characteristics of the selected sectors, such as number of employees, number of active companies and LQ itself.

Table 122: Top 20 Economic sectors by LQ in Samegrelo-Zemo Svaneti

NACE Code	Sectors	Employment	LQ	N of Enterprises
18.2	Reproduction of recorded media	5,26	23,11	2
77.34	Rental and leasing of water transport equipment	74,66	20,85	2
52.22	Service activities incidental to water transportation	95,70	16,05	10
52.10	Warehousing and storage	298,63	12,51	8
01.28	Growing of spices, aromatic, drug and pharmaceutical crops	21,04	11,40	8
03.11	Marine fishing	116,74	11,36	18
10.84	Manufacture of condiments and seasonings	103,59	9,57	13
10.20	Processing and preserving of fish, crustaceans and molluscs	162,46	9,02	9
16.22	Manufacture of assembled parquet floors	5,26	7,72	2
10.39	Other processing and preserving of fruit and vegetables	502,76	7,55	112
77.31	Rental and leasing of agricultural machinery and equipment	87,81	7,32	7
52.24	Cargo handling	952,56	7,22	21
85.20	Primary education	85,18	6,56	6
98.20	Undifferentiated service-producing activities of private households for own use	7,89	6,37	3
28.29	Manufacture of other general-purpose machinery n.e.c.	5,26	5,51	2
16.10	Sawmilling and planing of wood	143,04	-	28
84.12	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	223,97	4,66	6
25.62	Machining	28,93	4,34	11
33.15	Repair and maintenance of ships and boats	5,26	4,15	2

Source: UNIDO

It can be seen from Table 122 that the sub-sectors of the reproduction of recorded media and rental and leasing of water transport equipment have the biggest LQs, meaning that these sectors are the most concentrated in Samegrelo-Zemo Svaneti region. However, the number of companies in the mentioned sectors is not very high: only two companies are present in each sector and the total estimated employment amounts to 5.26 persons in the reproduction of recorded media and 74.66 persons in water transport equipment. The agricultural related sectors (the growing of spices, aromatic, drug and pharmaceutical crops, the manufacture of condiments and seasonings and other processing and preserving of fruit and vegetables) are in the top 20 concentrated sectors in Samegrelo-Zemo Svaneti. The sectors from manufacturing industries are also detected, such as the processing and preserving of fish, crustaceans and mollusks, the manufacture of assembled parquet floors, the manufacture of other general-purpose machinery, etc.

It should be mentioned that in the top 20 economics sectors by LQs cover not only the reproduction of recorded media and the rental and leasing of water transport equipment but other service sectors as well. However, the scope of the study does not cover the service industry, so for the detailed analysis we have excluded service sectors and also other non-relevant sectors for this study. One important issue that can be easily seen from the table is the low number of companies in the selected industries.

According to the LQ methodology applied, the intersecting sectors were selected so to ensure that the selected sectors have high LQs and at the same time cover a large number of companies. The table below summarizes the top 20 sectors by LQ and by the number of enterprises (only agriculture and manufacturing) in Samegrelo-Zemo Svaneti. It should be mentioned that no agriculture sectors are on the list. The majority of sectors are from the manufacturing industry. The LQs range between 2.55 and 11.39, higher than the predetermined of threshold 1.25. On the other hand, the number of companies is still very low. In most cases, it is easily noted that the number of companies are lower than five.

Table 123: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
18.2	Reproduction of recorded media	5,26	23,11	2	10.39	Other processing and preserving of fruit and vegetables	502,76	7,55	112
01.28	Growing of spices, aromatic, drug and pharmaceutical crops	21,04	11,40	8	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	362,39	1,00	111
03.11	Marine fishing	116,74	11,36	18	22.23	Manufacture of builders ware of plastic	186,74	1,70	71
10.84	Manufacture of condiments and seasonings	103,59	9,57	13	08.12	Operation of gravel and sand pits; mining of clays and kaolin	99,94	1,30	38
10.20	Processing and preserving of fish, crustaceans and molluscs	162,46	9,02	9	23.61	Manufacture of concrete products for construction purposes	87,84	0,93	33
16.22	Manufacture of assembled parquet floors	5,26	7,72	2	31.09	Manufacture of other furniture	82,53	0,49	31
10.39	Other processing and preserving of fruit and vegetables	502,76	7,55	112	16.10	Sawmilling and planking of wood	143,04	4,67	28
28.29	Manufacture of other general-purpose machinery n.e.c.	5,26	5,51	2	10.61	Manufacture of grain mill products	137,78	1,17	26
16.10	Sawmilling and planking of wood	143,04	4,67	28	03.11	Marine fishing	116,74	11,36	18
25.62	Machining	28,93	4,34	11	02.20	Logging	47,34	3,41	18
33.15	Repair and maintenance of ships and boats	5,26	4,15	2	16.23	Manufacture of other builders' carpentry and joinery	45,76	1,61	17
10.41	Manufacture of oils and fats	7,89	3,85	3	14.13	Manufacture of other outerwear	39,45	0,15	15
					23.70	Cutting, shaping and finishing of stone	36,82	1,10	14
					33.12	Repair of machinery	37,87	0,71	14

10.83	Processing of tea and coffee	87,81	3,64	7	10.84	Manufacture of condiments and seasonings	103,59	9,57	13
02.20	Logging	47,34	3,41	18	25.62	Machining	28,93	4,34	11
10.85	Manufacture of prepared meals and dishes	23,67	3,16	9	01.25	Growing of other tree and bush fruits and nuts	98,33	1,83	11
09.90	Support activities for other mining and quarrying	7,89	3,09	3	11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	29,98	0,22	11
25.93	Manufacture of wire products, chain and springs	13,15	2,91	5	33.14	Repair of electrical equipment	26,30	1,60	10
18.20	Reproduction of recorded media	5,26	2,85	2	01.61	Support activities for crop production	26,30	0,32	10
02.30	Gathering of wild growing non-wood products	5,26	2,73	2					

Source: UNIDO

After analyzing the table above, sectors were identified which are ranked in the top 20 by LQs and by the number of companies at the same time. These shortlisted sectors are the following table.

Table 124: Shortlisted sectors by number of enterprises in Samegrelo-Zemo Svaneti (LQs of more than 1.25, only agriculture and manufacturing)

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
03.11	Marine fishing	186,74	1,70	71
10.39	Other processing and preserving of fruit and vegetables	502,76	7,55	112
10.84	Manufacture of condiments and seasonings	103,59	9,57	13
16.10	Sawmilling and planking of wood	143,04	4,67	28

Source: UNIDO

2.8.4 Analysis of potential clusters

The results of the regional statistical analysis have revealed the list of sub-sectors which show a higher concentration and a growth in the number of enterprises in the region. After combining this statistical analysis with information presented during interviews and collected from available reports and studies, the following industries have been identified as potential clusters: 1) marine fishing, 2) other processing and preserving of fruit and vegetables 3) the manufacture of condiments and seasonings, and 4) sawmilling and planking of wood.

Marine fishing: Marine fishing has a large concentration of companies. Eighteen companies are operating in this sector. The majority of them are concentrated in Poti. Only one company is located in town Senaki and

Table 125: Distribution of number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhoro-tsku	Tsalenjikha	Khobi
Marine fishing	0	0	0	0	1	16	0	0	1

Source: GeoStat.

The majority of the companies are small and only one company is medium size.

Table 126: Distribution of number of enterprises in Samegrelo-Zemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Marine fishing	18	0	1	17	0%	6%	94%	116,74

Source: GeoStat; UNIDO.

All of these companies are related to marine fishing and marine fish processing. They mainly catch and process the Black Sea anchovy. Companies that are engaged in fishing have some experience in cooperation and joint activities, especially in the negotiation with the Government regarding the fishing licensing and fishing quotas. There are three fish enterprises in Poti which are processing Black Sea anchovy and receiving protein flour (a component for cattle feed production) and fish fat. Both products are export-oriented and the biggest part of them goes for export. It is necessary to underline that according to Deep and Comprehensive Free Trade Area (DCFTA), Black Sea anchovy and its derivative products are included in the limited number of animal products that can be exported from Georgia to European countries. Despite the good joint business development opportunities for the fish processing companies and partial start of the production of fish feed, the cooperation between these organizations is not strong.

Manufacture of condiments and seasonings: There are 13 companies in Samegrelo-Zemo Svaneti which operate in this sector: four companies are located in Khobi, four in Senaki, three in Zugdidi, one in Chkorotsku and one in Tsalenjikha.

Table 127: Distribution of the number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhoro-tsku	Tsalenjikha	Khobi
Manufacture of condiments and seasonings	0	3	0	0	4	0	1	1	4

Source: GeoStat.

Out of 13 companies in the sector, 12 are small and only one company is categorized as medium-sized.

Table 128: Distribution of the number of enterprises in Samegrelo-Zemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of condiments and seasonings	13	0	1	12	0%	8%	92%	103,59

Source: GeoStat; UNIDO.

All mentioned companies have local private ownership. There is no cooperation among these companies.

Other processing and preserving of fruit and vegetables: There are 112 companies in Samegrelo-Zemo Svaneti which operate in the sector of other processing and preserving of fruit and vegetables. The majority of them are located in Zugdidi.

Table 129: Distribution of the number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhoro-tsku	Tsalenjikha	Khobi
Other processing and preserving of fruit and vegetables	0	77	7	0	9	1	8	9	1

Source: GeoStat.

Out of 112 companies existing in the sector, 109 companies are small and only three companies are categorized as medium-sized.

Table 130: Distribution of the number of enterprises in Samegrelo-Zemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Other processing and preserving of fruit and vegetables	112	0	3	109	0%	3%	92%	502,76

Source: GeoStat; UNIDO.

All mentioned companies have local private ownership. There is no cooperation among them.

Sawmilling and planking of wood: There are 28 companies in Samegrelo-Zemo Svaneti operating in the sawmilling and planking of wood sector. The largest number (14 companies) are located in Mestia and Tsalenjikha municipalities (seven in each of these municipalities). Five companies are in Martvili, four companies are located in Senaki, two companies in Poti, one in Zugdidi, one in Abasha and one in the Tsalenjikha municipality.

Table 131: Distribution of number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhoro-tsku	Tsalenjikha	Khobi
Sawmilling and planning of wood	1	1	5	7	4	2	1	7	0

Source: GeoStat.

Out of 28 companies in the sector, 27 are small and only one company is categorized as medium size.

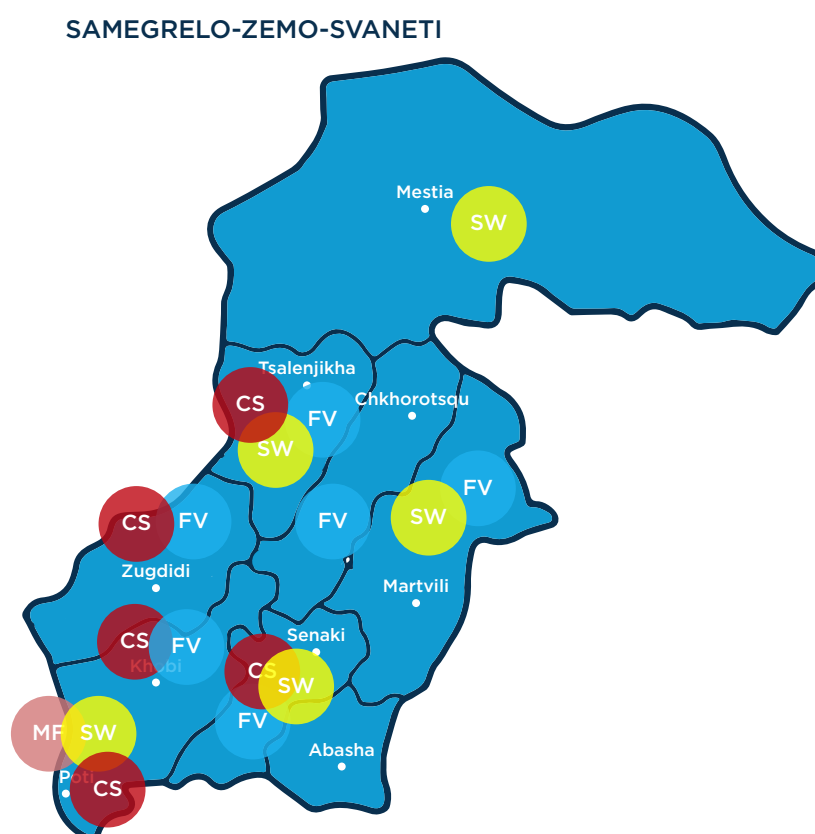
Table 132: Distribution of number of enterprises in Samegrelo-Zemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Sawmilling and planning of wood	28	0	1	27	0%	4%	96%	143,04

Source: GeoStat; UNIDO.

All mentioned above, the companies have local private ownership. They do have certain level of cooperation; they provide raw materials and ready products to partner organizations in credit. In Mestia, local companies are discussing the possibility to jointly created a wood processing enterprise that will be equipped with modern machinery and equipment and give them the opportunity to produce high-end products with a large value added.

Map 29: Cluster location



MF	Marine fishing
FV	Manufacture of condiments and seasonings of fruit and vegetables
CS	Manufacture of condiments and seasonings
SW	Sawmilling and planing of wood

Source: UNIDO.

2.8.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, hazelnut, tea and greenhouses were found to be noteworthy but did not end up in the statistical analysis (due to either lack of official statistics of the sector or relatively low employment).

Hazelnut: This is a sector with clear regional concentration (across almost all municipalities of the region, except Zemo Svaneti) with the existing cluster in the hazelnut sector:

Table 133: Distribution of number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhorotsku	Tsalenjikha	Khobi
Hazelnuts	0	5	0	1	1	1	0	3	0

Source: GeoStat.

Among a total of 11 companies in the sector, ten companies are small and only one company is categorized as medium size.

Table 134: Distribution of number of enterprises in Samegrelo-Zemo Svaneti by size.

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Hazelnuts	11	0	1	10	0%	9%	91%	98,32

Source: GeoStat; UNIDO.

This sector has a clear export orientation and is in the top export commodities among agricultural products. The biggest player in the hazelnut sector is an Italian company, Ferrero. Ferrero has its own hazelnut plantations and collects hazelnuts from the local small and medium farmers as well. Ferrero is working with local farmers through Agro-Georgia Ltd and the Georgian Hazelnut Growers Association (GHGA). Agro-Georgia Ltd deals with trade contracts and purchasing hazelnuts from the local small and medium farmers. GHGA is closely working with local hazelnut grower farmers, providing them capacity building through the training and coaching in order to increase their production capacities and the quality of hazelnuts. Also, in Zugdidi region the Anka FairTrade LTD (which owns a hazelnut processing plant) works actively with local small and medium farmers. Specifically, the company provides training, coaching and other technical assistance in organic and UTZ certification to local farmers. There are also several cooperatives in the region that are closely working with local hazelnut grower farmers to increase their capacities, providing capacity building, training and coaching as well as offering harvesting, post-harvest, warehousing services and support in exporting their product. Other hazelnut processing companies are also trying to establish long term relations with the local hazelnut farmers. The Government of Georgia is supporting the hazelnut sector through the different programs, partially through the ARDA which is implementing a program supporting the process of organic certification of orchards and other primary agriculture production, including the hazelnuts sector.

Tea production: the second sector which has a clear regional concentration covering the majority of municipalities in the region is tea production. During the Soviet period, the Samegrelo region was the second-biggest producer of raw tea and processed tea products in Georgia after Guria. After independence, the majority of tea plantations were privatized and since that period, have not been operating. Accordingly, many plantations currently need rehabilitation. To address this, the Government of Georgia started the Georgian Tea Plantation Rehabilitation Program. The majority of the existing tea processing enterprises were purchased by the German company Martin Bauer. Currently, the company is operating under the name Geoplant LLC and is producing tea and tea products under the brand names of Gurieli Export and Rcheuli. Tea processing plants produce black, green and white tea products. However, their production volume is too small to enter the international market. From the end of 2005, Georgia has been importing more tea from abroad than it exports its own products to other countries. Accordingly, development of this sector will support import substitution and production of export-oriented products in the country.

Statistically, there are seven tea production enterprises in the Samegrelo-Zemo Svaneti region which are distributed among three municipalities. Four enterprises are in Tsalenjikha municipality, two in Zugdidi and one in Khobi.

Table 135: Distribution of number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhortsku	Tslenjikha	Khobi
Tea	0	2	0	0	0	0	0	4	1

Source: GeoStat.

Among the above seven enterprises, six are of small-sized and one is categorized as a medium-sized. These enterprises do not cooperate.

Table 136: Distribution of number of enterprises in Samegrelo-Zemo Svaneti by size.

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Tea	7	0	1	6	0%	14%	86%	87,80

Source: GeoStat; UNIDO.

Greenhouses: Small greenhouses operate in all rural municipalities of the Samegrelo-Zemo Svaneti region. The largest concentration of greenhouses is in Tsaishi, where there are geothermal water springs. Mainly, these are small and medium-size greenhouses where tomatoes, cucumbers and green salads are cultivated. Some farmers also grow flowers. Unfortunately, greenhouses in Tsaishi are of the old Soviet-type with not enough necessary height and poor ventilation, etc. However, over the recent period, with support provided by different state and/or international donor programs, many farmers started building modern greenhouses with good heating and ventilation systems. So far there have not been any examples of any efforts to establish strong cooperation among the greenhouse farmers and only some of them are engaged in joint purchasing of some inputs. Also, until this time there are no modern consolidation, sorting and packing facilities in the region. Despite this, the greenhouses have some potential for further development, mainly around the Tsaishi area. Currently, Georgia imports a significant amount of vegetables during winter. Accordingly, further development of greenhouse sector would support the import substitution and potential export operations of winter vegetables.

There are four officially registered enterprises operating in the green housing sector, among which two are located in the Zugdidi municipality and two in Senaki.

Table 137: Distribution of number of enterprises by municipalities

Sector Name	Abasha	Zugdidi	Martvili	Mestia	Senaki	Poti	Chkhoro-tsku	Tsalenjikha	Khobi
Greenhouses	0	2	0	0	2	0	0	0	0

Source: GeoStat.

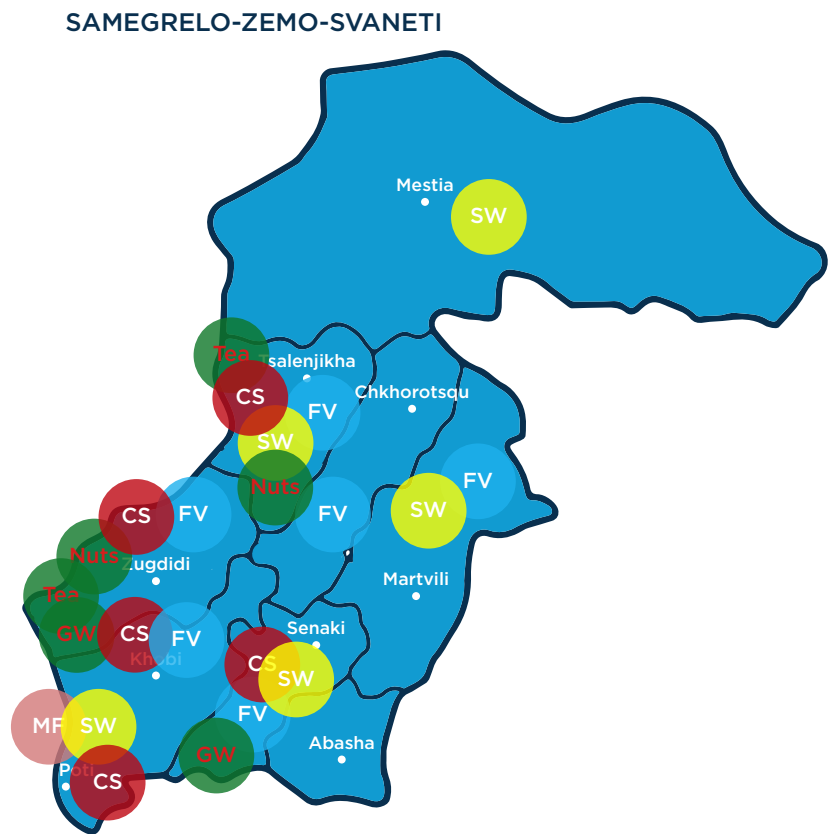
According to size, all the above four enterprises are categorized as small.

Table 138: Distribution of number of enterprises in Samegrelo-Zemo Svaneti by size.

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Greenhouses	4	0	0	4	0%	0%	86%	10,52

Source: GeoStat; UNIDO.

Map 30: Cluster location



MF	Marine fishing
FV	Manufacture of condiments and seasonings of fruit and vegetables
CS	Manufacture of condiments and seasonings
SW	Sawmilling and planking of wood
Nuts	Hazelnut
Tea	Tea production
GW	Greenhouses

Source: UNIDO.

2.9 Overview of Racha-Lechkhumi and Kvemo Svaneti and its clusters

2.9.1 Overview of the region and its economy

Racha-Lechkhumi and Kvemo Svaneti is a northern region in west Georgia covering 18 per cent of the country (4,954 km²) with population of 29,701 people as of 2019. Its population density is 6.4 km². Ninety-nine point seven per cent of the population are ethnic Georgians with the remaining small share made up of Russian, Osetian and other nationalities. The region is bordered by the Russian Federation to the north, the Samegrelo-Zemo Svaneti region to the west, the Imereti region to the south and the Tskhinvali region (South Ossetia) from the east. The region has four administrative districts: the municipalities of Ambrolauri, Oni, (both Racha sub-region), Tsageri (Lechkhumi sub-region) and Lentekhi (Kvemo Svaneti sub-region). The town of Ambrolauri is the administrative center of the region. In total there are three towns (Ambrolauri, Oni, Lentekhi) as well as three townlets/urban settlements and 251 villages within the region.

Racha-Lechkhumi and Kvemo Svaneti is an agrarian region with a non-agriculture sector making an insignificant share of GDP and value added. The region's economy is based mainly on agricultural and agriculture product processing activities, primarily the production of livestock farming products (meat, milk), the production of cereals/corn, legumes, potato and vegetables, fruits, viticulture/viniculture and apiculture production, the collection and processing medical herbs and dried fruits, fish-breeding/trout farming, nuts/hazelnuts growing, other agribusiness activities such as horse breeding, etc. The processing and manufacturing sectors are less developed. Agricultural processing mainly covers such activities as winemaking (specifically Ambrolauri and Tsageri (in Lechkhumi) municipalities and the production of smoked pork (a traditional Rachean product. Among the non-agrarian sectors should be named hydropower electricity generation (mostly in the Tsageri municipality and also in the Ambrolauri municipality), the mining industry, timber production/processing (in the Ambrolauri and Oni municipalities), the production of mineral waters, non-alcoholic beverages/bottled spring waters (Lechkhumi (Dzuguri mineral water) and Ambrolauri municipalities), sawmill operations, bakery, etc. Tourism is an important sector in Racha-Lechkhumi and Kvemo Svaneti growing from abundance of historical-cultural monuments and natural monuments and the picturesque landscapes of the Shaori reservoir. In the Oni municipality are the well-known balneo-climatic resorts Utsera (1150 m above sea) and Shovi (1520 m above sea level).

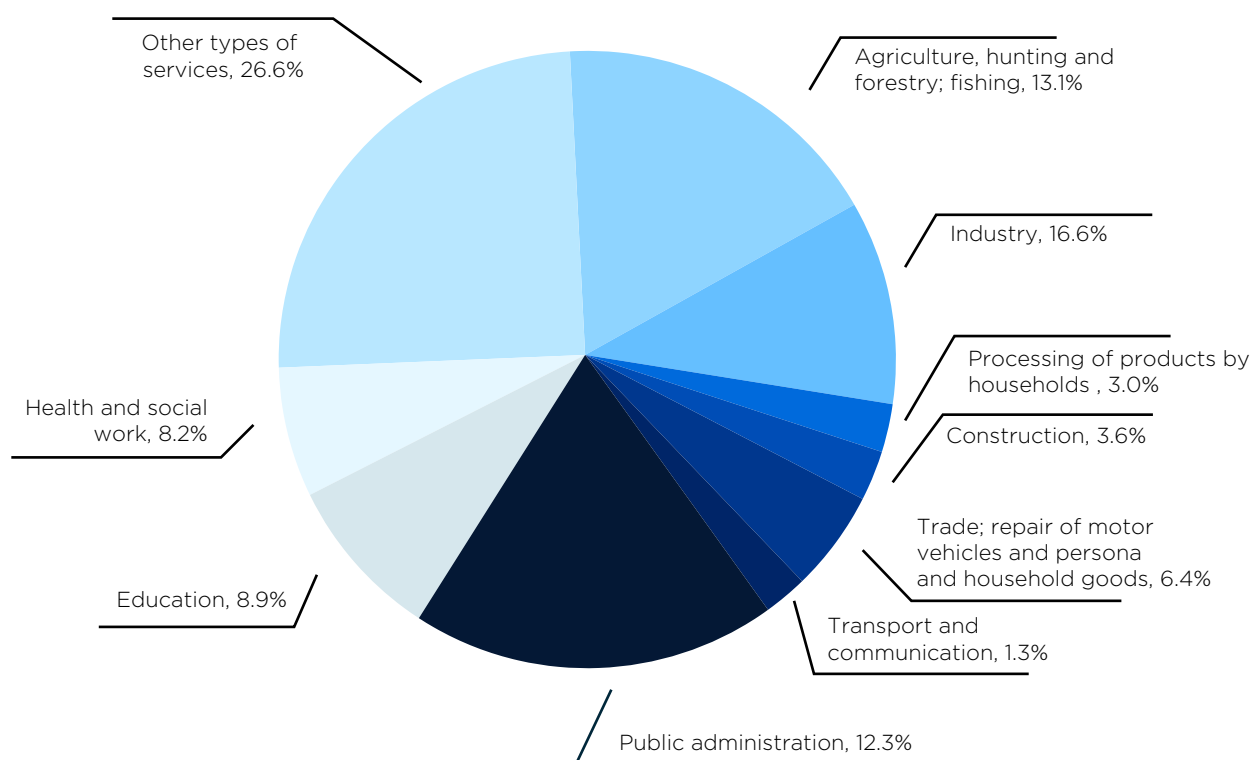
According to the statistics, in 2018 the employment and economic activity rates were relatively high compared to the Georgian average with the unemployment rate being a little less than the average.

Table 139: Employment data

	RACHA - LECHKHUMI AND KVEMO SVANETI	GEORGIA
Unemployment Rate	12.4 %	12.7 %
Economic Activity Rate	68.8 %	63.9 %
Employment Rate	60.3 %	55.8 %

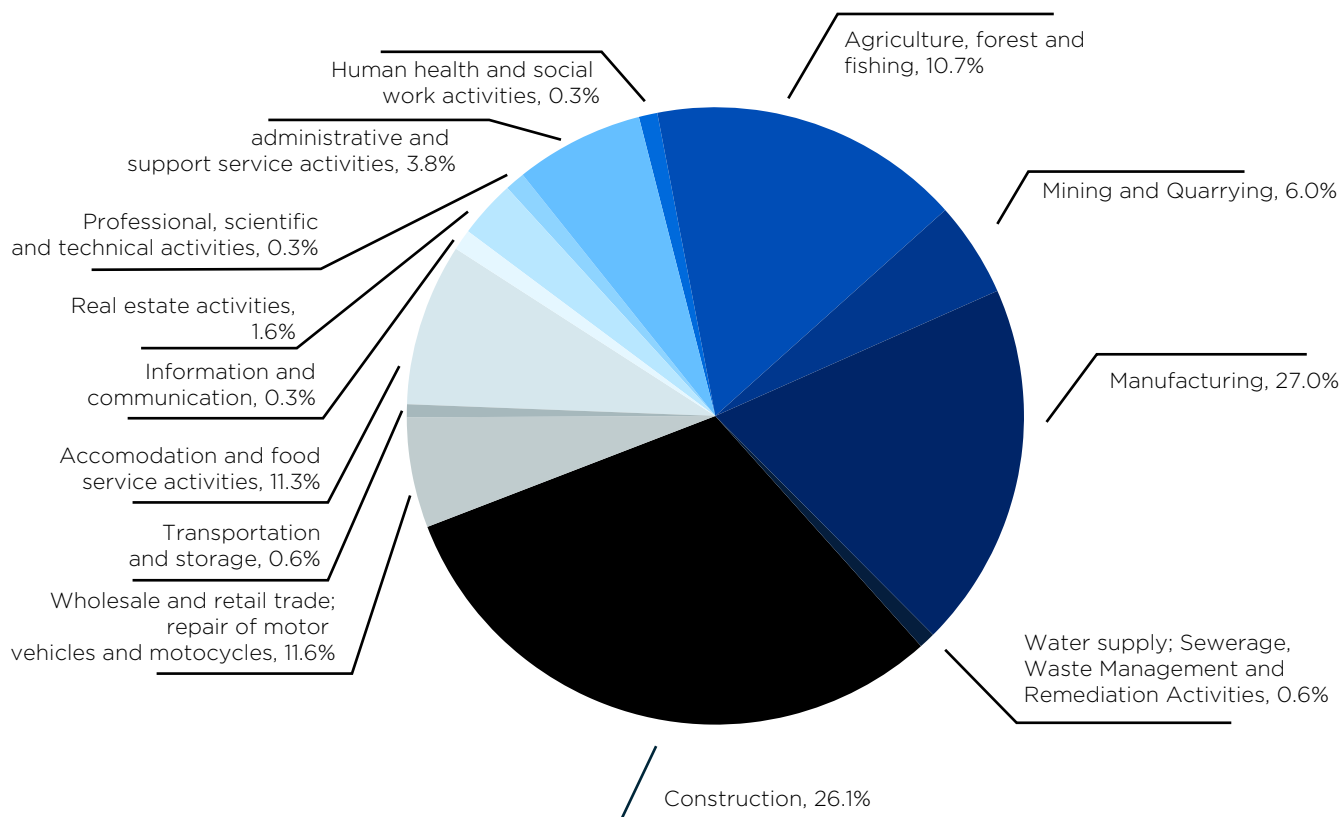
Source: GeoStat. NOTE: Including Imereti Region Data

Figure 25: Regional GDP by economic activities, 2017



Source: GeoStat. NOTE: Including Imereti Region Data

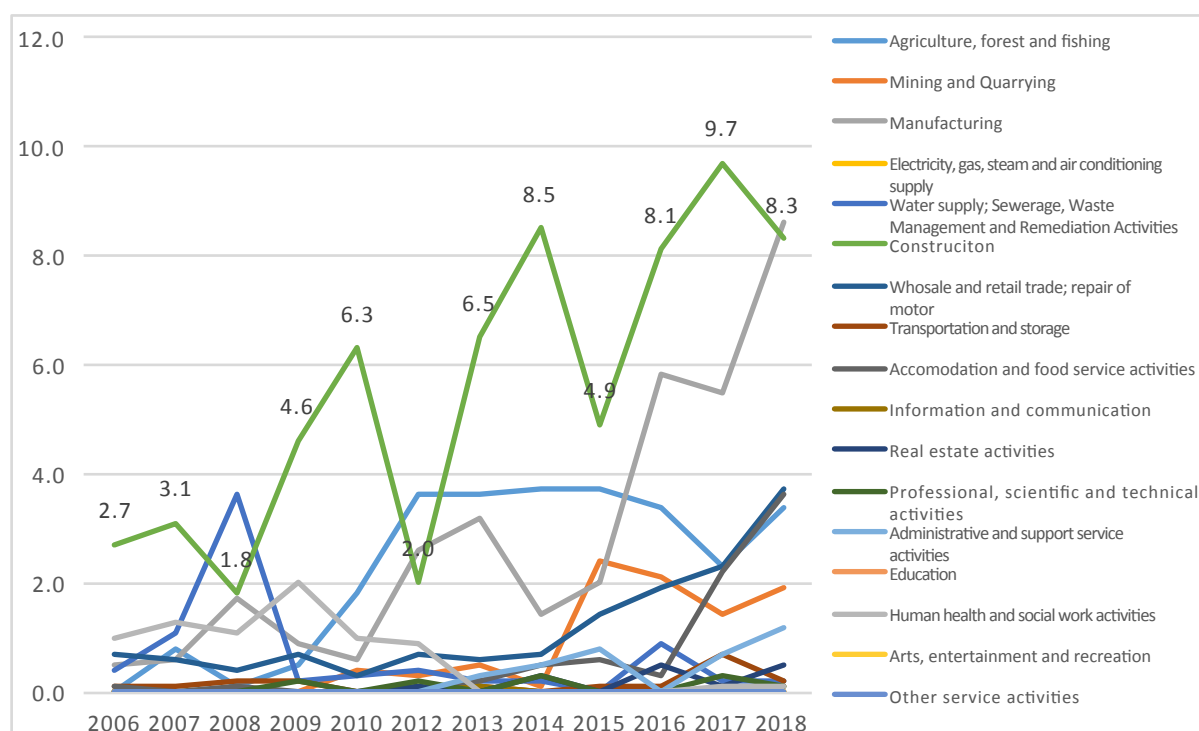
Figure 26: Regional Value Added by economic activities, 2017



Source: GeoStat.

The highest growth rate in regional value added by particular subsectors belongs to manufacturing (27 per cent) followed by construction (26.1 per cent). The third and fourth positions are occupied by wholesale and retail trade (11.6 and 11.3 per cents, respectively). Agriculture is in fifth place with 10.7 per cent. Mining and quarrying show 6.0 per cent growth. The other sectors' growth rates are insignificant.

Figure 27: Value Added in Racha-Lechkhumi and Kvemo Svaneti by economic activities, 2006-2017 (Mln GEL)



Source: GeoStat. NOTE: Including Imereti Region Data

The value added in manufacturing increased from less than 1.7 mln GEL in 2006 up to about 8.3 mln in 2017, with an especially drastic move upwards shown after 2014 (following the considerable decline in 2013) with only a small temporary decrease taking place in 2016. The construction sector is characterized with alternate turns of drastic decreases and rapid increases reaching the highest point of 9.7 mln after which it declined to 8.3 mln in 2017 as compared to the 2.7 mln it showed in 2006. Rapid growth was shown by the accommodation and food service activities which after being at the rather low point by 2015, took a drastic move upwards over the next few years, reaching 3.6 mln in 2017. Steady growth was displayed by the wholesale and retail trade and the repair of motor vehicles. Its value of 0.7 mln in 2006 gradually reached 3.7 mln in 2017. The trade sector value added increased from under 7.5 mln GEL up to. The table below ranks the sectors according to their growth of key economic indicators such as value added, output, employment and investment in fixed assets, in the period of 2012 through 2017 as a percentage of growth compared to the base period (2012).

Table 140: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forest and fishing	-6%	-6%	17%	229%
Mining and Quarrying	280%	363%	87%	-
Manufacturing	169%	80%	9%	-100%
Electricity, gas, steam and air conditioning supply	-	-	-	-
Water supply; Sewerage, Waste Management and Remediation Activities	-	-	-100%	-
Construction	28%	64%	-43%	3950%
Wholesale and retail trade; repair of motor vehicles and motorcycles	517%	488%	396%	-
Transportation and storage	100%	600%	396%	-
Accommodation and food service activities	1700%	650%	238%	-100%
Information and communication	-	-	67%	-
Real estate activities	-	100%	100%	-
Professional, scientific and technical activities	-	100%	100%	-
Administrative and support service activities	300%	467%	241%	-100%
Education	-	-	-	-
Human health and social work activities	-	100%	44%	-
Arts, entertainment and recreation	-	-	-	-
Other service activities	-	100%	100%	-

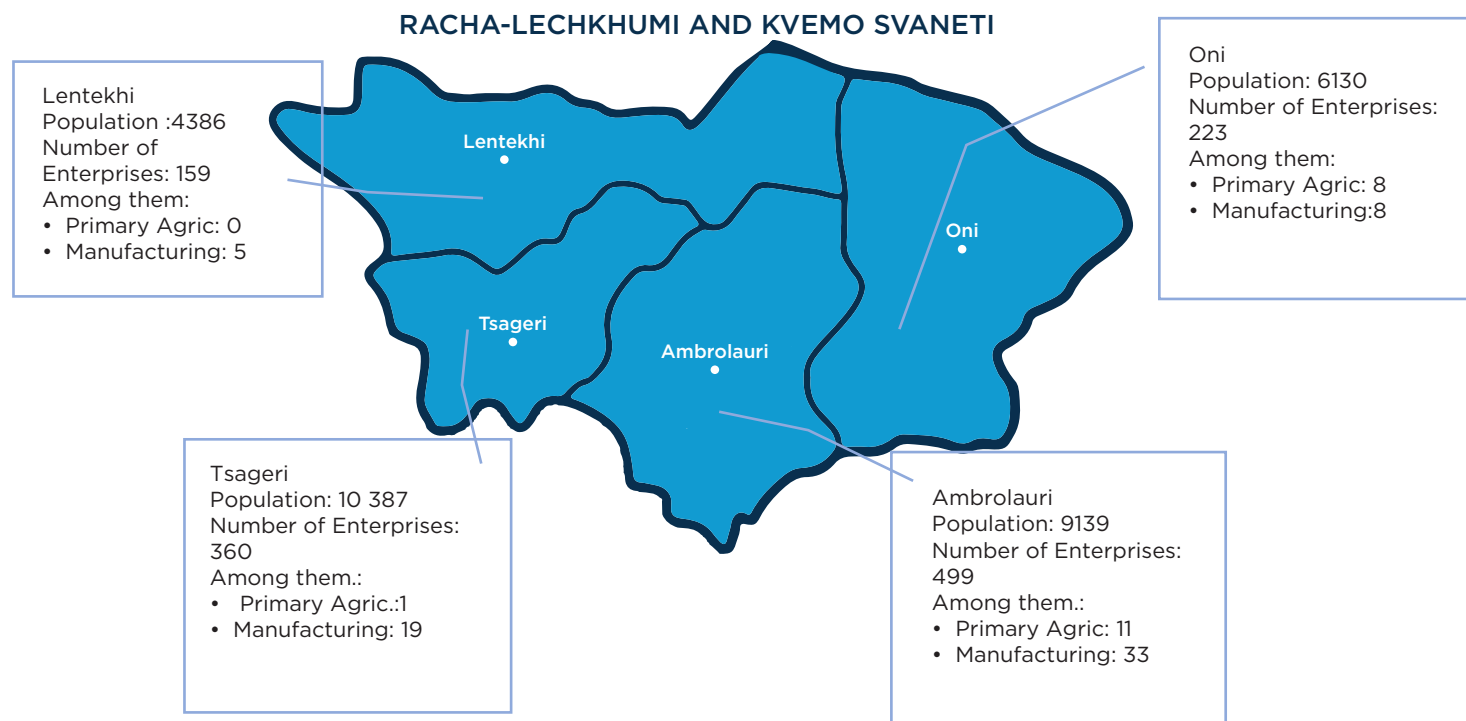
Source: GeoStat.

In the past five years, the industries which gained momentum in terms of value added were accommodation and food service activities (1,700 per cent), wholesale and retail trade; repair of motor vehicles and motorcycles (517 per cent), administrative and support service activities (300 per cent) and mining and quarrying (280 per cent). In terms of output, the sectors gaining momentum were distributed as follows: accommodation and food service activities (650 per cent), transportation and storage (600 per cent), wholesale and retail trade/ repair of motor vehicles and motorcycles (488 per cent) administrative and support service activities (467 per cent) and mining and Quarrying (363 per cent).

In terms of employment growth figures, the leading sectors include wholesale and retail trade (with 396 per cent) and accommodation and food service activities (238 per cent) followed by administrative and support service activities (241 per cent).

As for the investments in fixed assets, the construction sector is the undisputed leader (with 3,950 per cent). The second place belongs to agriculture, forestry and fishing (229 per cent). The manufacturing sector and accommodation and food service activities sector have both shown a negative growth of -100 per cent each while the wholesale and retail trade/ repair of motor vehicles and motorcycles sector, like many other sectors also, displayed a zero level of growth.

Map 31: Administrative map of Racha-Lechkhumi and Kvemo Svaneti with key figures



Source: GeoStat.

2.9.2 Past relevant studies

The several value-chain studies have been carried out in Georgia in the past which identified value chains (mostly agriculture) covering the Racha-Lechkhumi and Kvemo Svaneti region.

Table 141: The list of relevant studies

EXISTING VALUE CHAINS IN RACHA-LECHKHUMI AND KVEMO SVANETI	SOURCE
Honey	Agricultural Value Chain in Imereti and Racha Regions. Agriculture and Honey Production. Czech University Of Life Sciences Prague /People in Need/Association Of Young Economists Of Georgia. 2013
Hazelnut	Agricultural Value Chain In Imereti and Racha Regions. Hazelnuts Production. Czech University Of Life Sciences Prague /People in Need/Association Of Young Economists Of Georgia. 2014
Berries	Agricultural Value Chain In Imereti and Racha Regions. Berry Farming. Czech University of Life Sciences Prague /People in Need/Association Of Young Economists Of Georgia. 2015
Fish Farming	

Source: UNIDO

Also, the Racha-Lechkhumi and Kvemo Svaneti Development Strategy established priorities vis-à-vis the following sectors in the region for 2014-2021:

Table 142: The list of priority sectors identified by the strategy

PRIMARY AGRICULTURE/AGRO PROCESSING	SOURCE
Endemic Viticulture Milk Collection Livestock Farming Apiculture	Food Processing Bottled Ecological Mineral Waters Canning Industry (Fruit, Berry Jams/Juices) Branded Smoked Meat Wood Furniture and Construction Materials Decorative Stone Tiles Wine Production

Source: Racha-Lechkhumi and Kvemo Svaneti Regional Development Plan 2014-2021.

2.9.3 Regional statistical analysis

Using data about employment by industry and region, LQs were calculated for Racha-Lechkhumi and Kvemo Svaneti region. The table below provides information about the general characteristics of the selected sectors, such as number of employees, number of active companies and their LQs.

Table 143: Top 20 Economic Sectors by LQ in Racha Lechkhumi and Kvemo Svaneti

NACE Code	Sectors	Employment	LQ	N of Enterprises
01.42	Raising of other cattle and buffaloes	50,67	64,38	6
02.30	Gathering of wild growing non-wood products	8,91	47,82	3
02.20	Logging	32,68	24,35	11
09.90	Support activities for other mining and quarrying	5,94	24,05	2
23.20	Manufacture of refractory products	5,94	17,13	2
77.11	Rental and leasing of cars and light motor vehicles	38,79	14,98	2
16.10	Sawmilling and planing of wood	39,09	13,20	13
55.10	Hotels and similar accommodation	8,91	13,10	3
01.49	Raising of other animals	5,94	7,75	2
01.50	Mixed farming	8,91	7,24	3
85.20	Primary education	8,91	7,10	3
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	8,91	5,87	3
01.21	Growing of grapes	8,91	4,42	3
47.29	Other retail sale of food in specialized stores	8,91	4,25	3
90.04	Operation of arts facilities	50,67	4,23	6
94.99	Activities of other membership organizations n.e.c.	41,76	3,58	3
42.11	Construction of roads and motorways	145,90	3,50	27
96.04	Physical well-being activities	8,91	3,26	3
16.23	Manufacture of other builders' carpentry and joinery	8,91	3,24	3
95.11	Repair of computers and peripheral equipment	5,94	3,19	2

Source: UNIDO

It can be seen from the table, the raising of other cattle and buffaloes and the gathering of wild growing non-wood products has the largest LQs, meaning that this sub-sector mostly concentrates in Racha-Lechkhumi and Kvemo Svaneti region. However, the number of companies involved in the raising of other cattle and buffaloes (six) and the gathering of wild growing non-wood products (three) is not very high in Racha-Lechkhumi and Kvemo Svaneti and neither is the total estimated employment numbers. Such agriculture-related sectors as the raising of other animals, mixed farming and the growing of grapes sectors are within the top 20 concentrated sectors in Racha-Lechkhumi and Kvemo Svaneti. The sectors from manufacturing industries were also detected, such as the manufacture of refractory products,

sawmilling and planking of wood and the manufacture of other builders' carpentry and joinery. It is also notable that the top 20 economics sectors by LQs covers not only the manufacturing industry but service sectors as well. However, the scope of the study does not cover service sectors, so we excluded them from further consideration.

One important issue that can be easily noticed from the table is the low number of companies in the selected industries. This indicates that even though the sectors have high LQs the number of companies still can be low. Thus, a small number of companies might limit the possibility of cluster formation. For instance, in the sub-sector of raising of other cattle and buffaloes and the gathering of wild growing non-wood products, LQ indicators are above 64 and 47, which is associated with the high concentration of these sectors in Racha Lechkhumi and Kvemo Svaneti region, but the limited number of companies in these sectors (six and three, respectively) makes it difficult to think about cluster formation in these sectors.

According to the LQ methodology applied, the intersecting sectors were selected so to ensure that they have high LQs and at the same time cover large a number of companies. The table below summarizes the top 20 sectors by LQ and by the number of enterprises in Racha Lechkhumi and Kvemo Svaneti. The majority of sectors are from the manufacturing industry. The LQs range between 1.68 and 64.38 which is higher than the predetermined threshold of 1.25. On the other hand, the number of companies is still very low. In most cases it is easily observed that the number of companies is lower than three. The highest number of companies is present in the sawmilling and planking of wood, logging and manufacture of wine from grape sectors.

Table 144: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
01.42	Raising of other cattle and buffaloes	50,67	64,38	6	16.10	Sawmilling and planking of wood	39,09	13,20	13
02.30	Gathering of wild growing non-wood products	8,91	47,82	3	02.20	Logging	32,68	24,35	11
02.20	Logging	32,68	24,35	11	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	32,68	0,94	11
09.90	Support activities for other mining and quarrying	5,94	24,05	2	11.02	Manufacture of wine from grape	62,55	2,39	10
23.20	Manufacture of refractory products	5,94	17,13	2	01.42	Raising of other cattle and buffaloes	50,67	64,38	6
16.10	Sawmilling and planing of wood	39,09	13,20	13	22.23	Manufacture of builders ware of plastic	17,83	1,68	6
01.49	Raising of other animals	5,94	7,75	2	08.12	Operation of gravel and sand pits; mining of clays and kaolin	14,85	2,00	5
01.50	Mixed farming	8,91	7,24	3	11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	11,88	0,90	4
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	8,91	5,87	3	31.09	Manufacture of other furniture	11,88	0,74	4
01.21	Growing of grapes	8,91	4,42	3	02.30	Gathering of wild growing non-wood products	8,91	47,82	3
16.23	Manufacture of other builders' carpentry and joinery	8,91	3,24	3	01.50	Mixed farming	8,91	7,24	3

31.01	Manufacture of office and shop furniture	5,94	2,97	2	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	8,91	5,87	3
25.99	Manufacture of other fabricated metal products n.e.c.	5,94	2,95	2	01.21	Growing of grapes	8,91	4,42	3
11.02	Manufacture of wine from grape	62,55	2,39	10	16.23	Manufacture of other builders' carpentry and joinery	8,91	3,24	3
08.12	Operation of gravel and sand pits; mining of clays and kaolin	14,85	2,00	5	10.13	Production of meat and poultry meat products	8,91	0,49	3
22.23	Manufacture of builders' ware of plastic	17,83	1,68	6	09.90	Support activities for other mining and quarrying	5,94	24,05	2
10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	32,68	0,94	11	23.20	Manufacture of refractory products	5,94	17,13	2
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	11,88	0,90	4	01.49	Raising of other animals	5,94	7,75	2
23.63	Manufacture of ready-mixed concrete	5,94	0,78	2	31.01	Manufacture of office and shop furniture	5,94	2,97	2
31.09	Manufacture of other furniture	11,88	0,74	4	25.99	Manufacture of other fabricated metal products n.e.c.	5,94	2,95	2

Source: UNIDO

Table 144 above provided information about top sectors according to LQ and the top 20 sectors by the number of companies. The leading positions are occupied by subsectors of sawmilling and planking of wood, logging, the manufacture of bread, the manufacture of fresh pastry goods and cakes, the manufacture of wine from grape and the raising of other cattle and buffaloes sectors.

After analyzing the above table, the sectors which are ranked in the top 20 by LQs and by the number of companies were identified. These sectors are the following:

Table 145: Shortlisted sectors by number of enterprises in Racha – Lechkhumi and Kvemo Svaneti (LQ more than 1.25, only in agriculture and manufacturing)

NACE Code	Economic Sector	Employment	LQ	N of Enterprises
01.21	Growing of grapes	8,91	4,42	3
11.02	Manufacture of wine from grape	62,55	2,39	10
16.10	Sawmilling and planking of wood	39,09	13,20	13

Source: UNIDO

2.9.4 Analysis of potential clusters

The results of the regional statistical analysis have revealed the list of sub-sectors which show a higher concentration and a growth in the number of enterprises in the region. After combining this statistical analysis with information presented during interviews and collected from available reports and studies, the following industries have been identified as potential clusters in Racha-Lechkhumi and Kvemo Svaneti: 1) wine production, and 2) sawmilling and planking of wood.

Wine: Racha-Lechkhumi region possesses unique varieties of grapes. Alexandrouli, Mujuretuli, Ojaleshi, Tvishi, Dzvelshavi are outstanding varieties and grow in the micro-zones of Racha-Lechkhumi and Kvemo Svaneti. This region produces such unique wines as Khvanchkara, Tvishi, Aleksanrouli, Mujuretuli, Usakhelouri, etc. However, local farmers and wine producers do not demonstrate a lot of cooperation within the sector and therefore chances for the formation of a cluster are not so high. The wine cluster under consideration encompasses the statistical sub-sectors of the growing of grapes and the manufacture of wine from grapes.

Growing of grapes: The majority of local grape producer in Racha Lechkhumi and Kvemo Svaneti region are farmers are non-registered household level farmers. There are a total three registered companies in the growing of grapes sector; among which two companies are located in Ambrolauri municipality and one in Tsageri, two principal grape and wine production municipalities in the region.

Table 146: Distribution of number of enterprises by municipalities

Sector Name	Ambrolauri	Lentekhi	Oni	Tsager
Growing of grapes	2	0	0	1

Source: GeoStat.

According to the size category, all three of the companies operating in the growing of grapes sector are small-sized.

Table 147: Distribution of number of enterprises in Racha-Lechkhumi and Kvemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Growing of grapes	3	0	0	3	0%	0%	100%	8,91

Source: GeoStat; UNIDO.

Manufacture of wine from grape: There are a total of ten companies in the sector of the manufacture of wine from grape operating in the region, eight of which are located in the Ambrolauri municipality and two in Tsageri.

Table 148: Distribution of number of enterprises by municipalities

Sector Name	Ambrolauri	Lentekhi	Oni	Tsageri
Manufacture of wine from grape	8	0	0	2

Source: GeoStat.

Among the above ten companies manufacturing wine from grape, nine are small and one company is of medium size

Table 149: Distribution of number of enterprises in Racha-Lechkhumi and Kvemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of wine from grape	10	0	1	9	0%	10%	90%	62,55

Source: GeoStat; UNIDO.

Sawmilling and planking of wood: There are 13 companies in Racha-Lechkhumi and Kvemo Svaneti, which are operating in the sector of sawmilling and planking of wood: five companies are located in Ambrolauri, four in Lentekhi, three in Tsageri and one in the Oni municipality.

Table 150: Distribution of number of enterprises by municipalities

Sector Name	Ambrolauri	Lentekhi	Oni	Tsageri
Sawmilling and planning of wood	5	4	1	3

Source: GeoStat.

All 13 companies in the sector are of a small size.

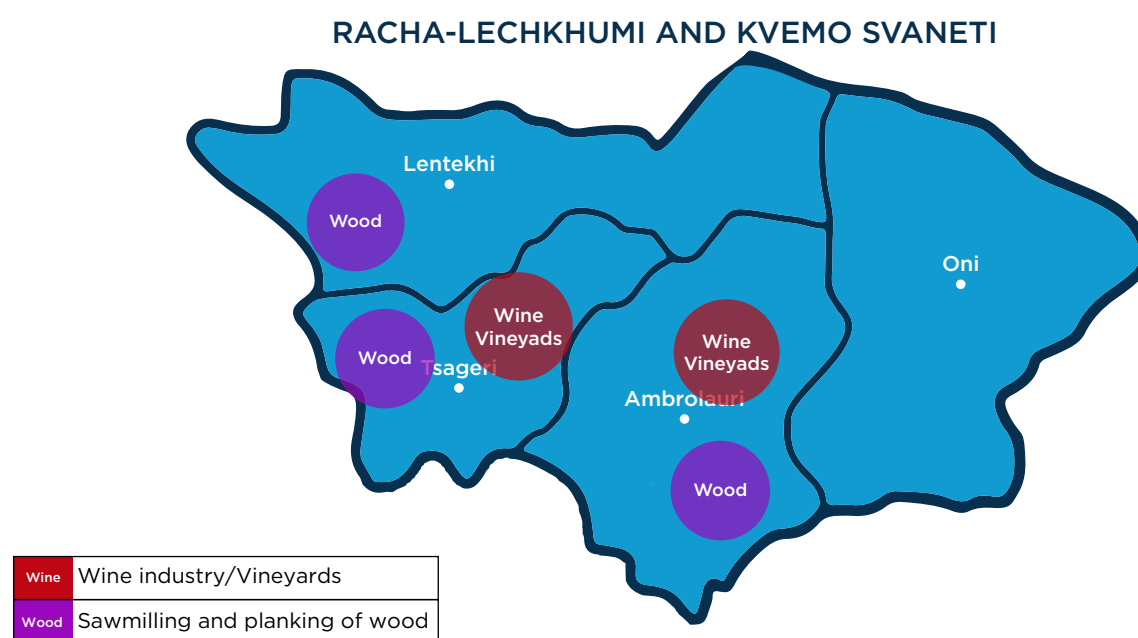
Table 151: Distribution of the number of enterprises in Racha-Lechkhumi and Kvemo Svaneti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Sawmilling and planking of wood	13	0	0	13	0%	0%	100%	39,09

Source: GeoStat; UNIDO.

All the above-mentioned companies have local private ownership. There is certain level of cooperation among them; specifically, they provide raw materials and ready products to partner organizations in credit.

Map 32: Cluster location



Source: UNIDO

2.10 Overview of Autonomous Republic of Adjara and its clusters

2.10.1 Overview of the region and economy

The Autonomous Republic of Adjara (Adjara AR, Adjara) is a south-western Georgian region covering 4 per cent of the country's territory (total area: 2,899 km²). The region is bordered by the Black Sea to the west, by Turkey to the South, by Guria to the north and by the Samtskhe-Javakheti region to the east. Adjara AR comprises five administrative districts: Kobuleti, Khelvachauri, Keda, Shuakhevi and Khulo municipalities and the city of Batumi. Batumi is the capital of the Adjara AR and its population is about 350,000. It is the second-largest city in Georgia after the capital Tbilisi. In Adjara, there are two cities/towns (Batumi and Kobuleti), five townlets (Chakvi, Ockhamuri, Keda, Shuakhevi, Khulo) and 333 villages. The population of Adjara is 349,028 as of 2019. The population density indicator is 135.32/ km². By ethnic content, the population of Adjara consists of 93.4 per cent Georgians (Ajarian sub-group), 2.4 per cent Russians, 2.4 per cent Armenians, 0.6 per cent Greeks, 0.4 per cent Abkhazians and .09 per cent and other ethnicities. According to 2014 data, 70 per cent of the local Georgian population are Orthodox Christians by confession and 30 per cent are Sunni Muslims, especially the elderly population of the higher mountainous municipalities of Shuakhevi and Khulo. Other local religious/cultural groups include Armenian Gregorian Christians (0.3 per cent) other groups (0.3 per cent).

In terms of mineral resources, there are ores of peat, clay, magnetic sand, building stone, sand and gravel, sulfur, copper, gold, iron and zinc in Adjara. The region is rich with water resources (rivers, springs, lakes, mineral and thermal waters). About 94 per cent of surface water in the region is mostly used for hydro energy, 4 per cent for drinking purposes, 1.6 per cent for industrial purposes, and the rest is used for irrigation. The region possesses good potential alternative energy production such as wind, solar and biomass energy. As for forest resources, Adjara's forest area covers 153.4 thousand ha, which makes up to 53 per cent of the entire territory of the region. The largest area of forests is occupied by beech, chestnut, spruce and fir.

The land area in the region is small, with difficult terrain and high fragmentation of households-owned agricultural lands. The main fields of agriculture in Adjara are citrus (mostly tangerines) and nuts, corn and potato production and livestock. Other traditional sub-sectors include viticulture, aquaculture and apiculture as well as tea, walnut, tobacco, berries and medicinal plants production. Regarding the manufacture industries, processing enterprises in Adjara are operating mainly in such sectors as tea leaf production, citrus and fruit processing/canning production, nut processing, production of berries, vegetable oil, wheat processing, the production of bread and bakery products, milk and dairy products, meat and meat products, poultry, mineral waters, beer, tobacco products, mushroom production, wine production and greenhouse production, tourism-related products/souvenirs, toys production, rootstocks and seed production, the production of medicinal herbs; crafts, toys production. The Batumi Oil Processing Plant should be named among the major enterprises in Adjara.

Since Adjara AR is the principal area of Georgia's seaside tourism and vacationing, production and services related to tourism play an important role in the economics of the region. The active tourism zone in Adjara covers all the region including the Black Sea coastal resorts and the highest located mountainous district of Khulo and includes the national parks and protected natural reserve territories (Mtirala, Machakhela, Kintrishi). As for the industrial sector, several enterprises engaged in the wide production areas ranging from small and medium enterprises processing agricultural products to the Batumi oil processing plant operate in Adjara. Batumi is also a major seaport of Georgia next to the port of Poti.

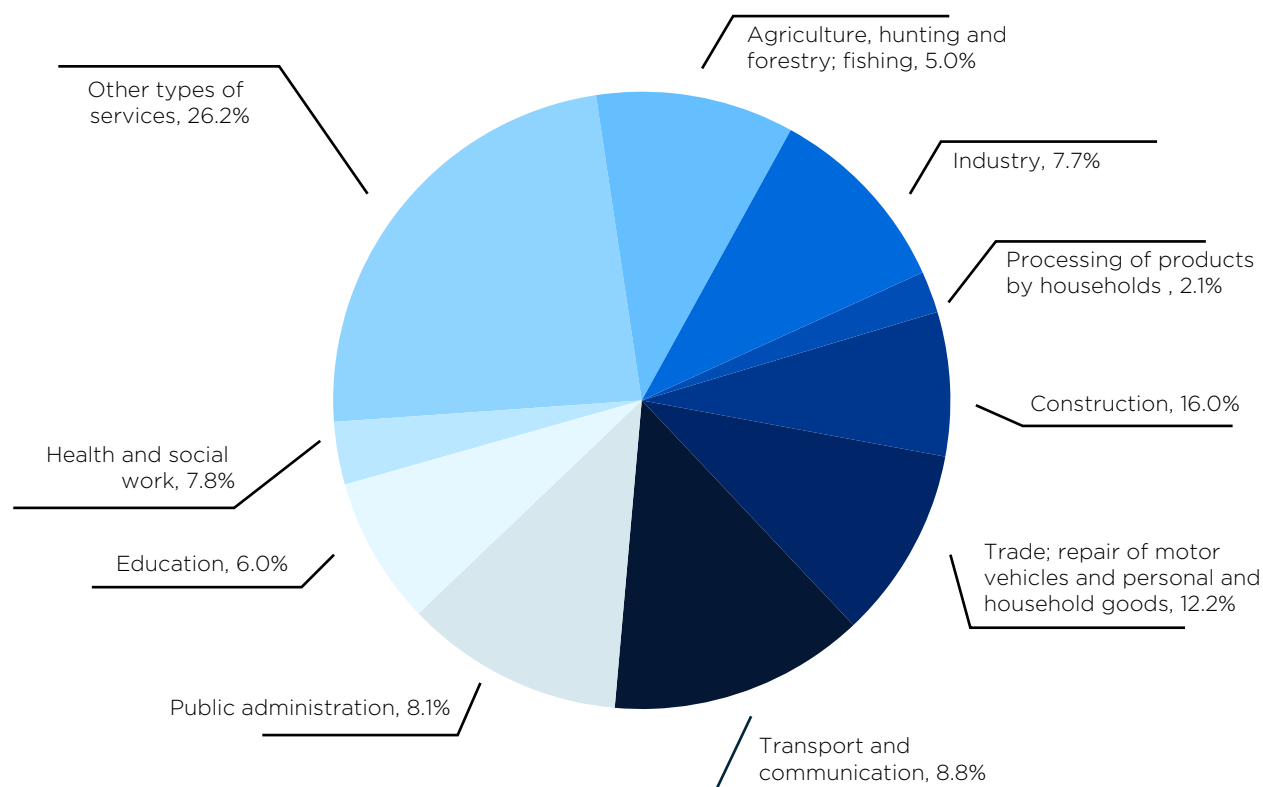
According to statistics, in 2018 employment rate and economic activity was relatively higher as compared to average indicators of Georgia and the unemployment rate was below the average Georgian indicator.

Table 152: Employment data

	ADJARA A.R.	GEORGIA
Unemployment Rate	9.1 %	12.7 %
Economic Activity Rate	68.2 %	63.9 %
Employment Rate	62.1 %	55.8 %

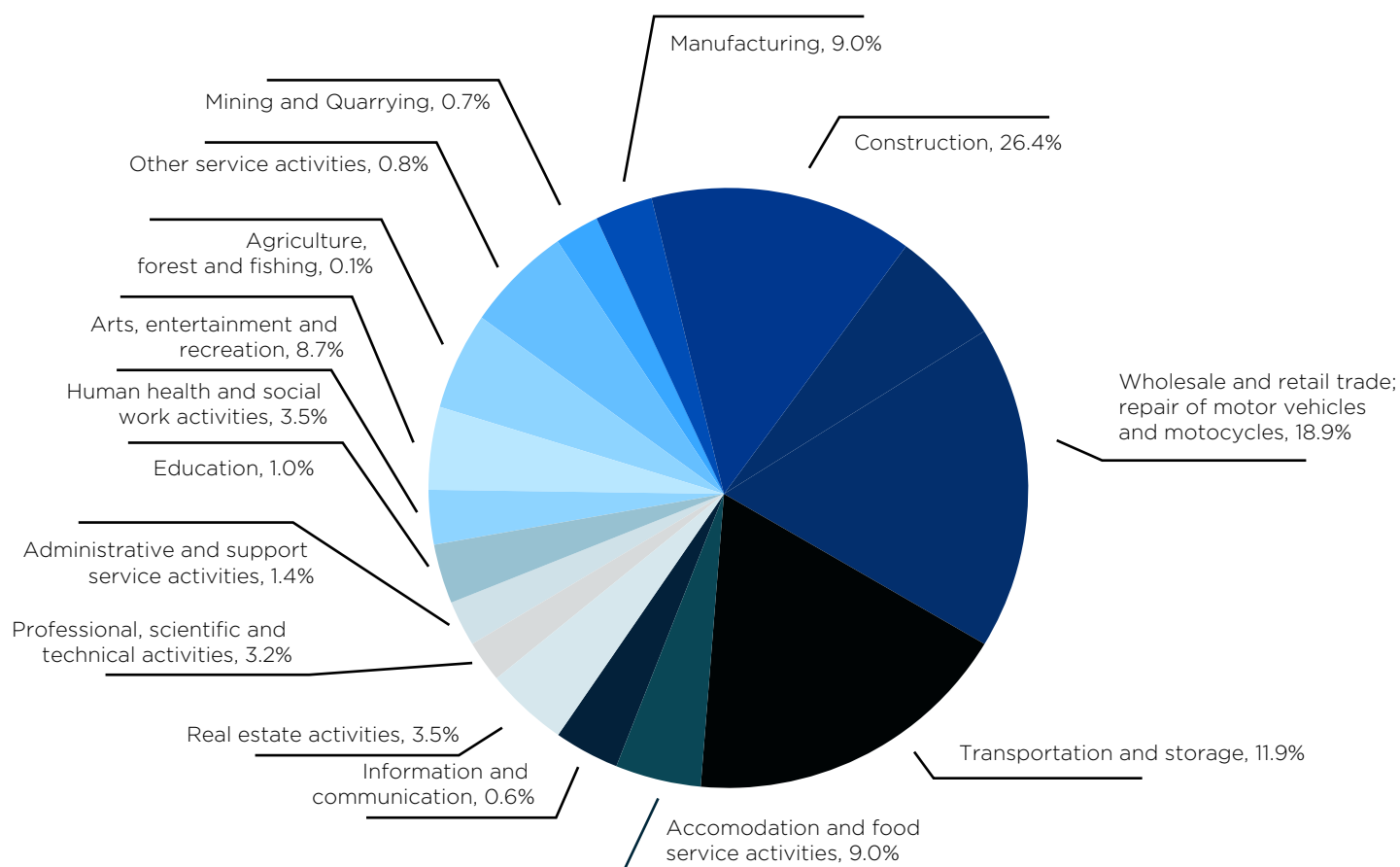
Source: GeoStat.

Figure 28: Regional GDP by economic activities, 2017



Source: GeoStat.

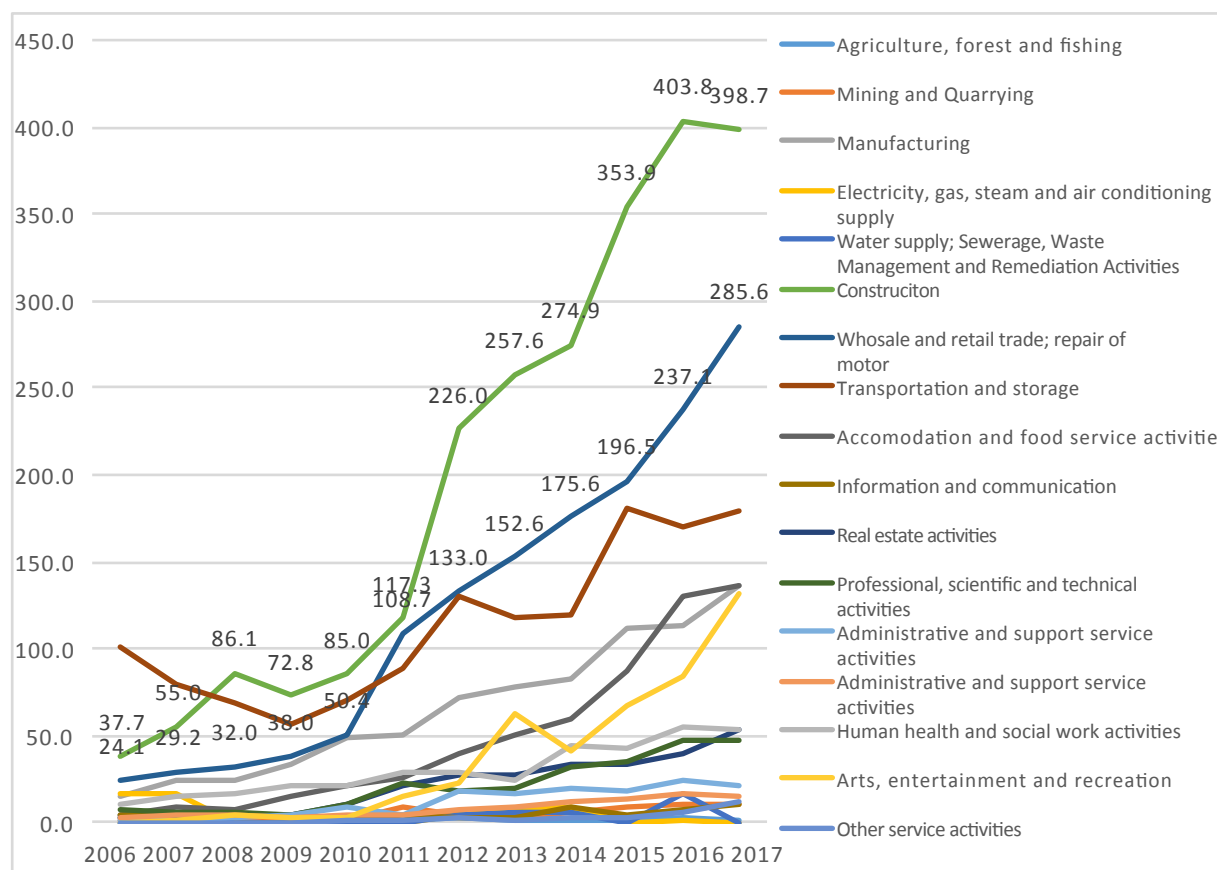
Figure 29: Regional Value Added by economic activities, 2017



Source: GeoStat.

The growth of the value added of the main sectors of the economy was quite significant during the last few years. The key sectors in Adjara such as construction, wholesale and retail trade, accommodation and food service activities, manufacturing, transportation and storage and arts entertainment and recreation all showed growth. The figure below shows the dynamics of the value added by sectors in Adjara.

Figure 30: Value Added in Adjara A.R. by economic activities, 2006-2017 (Mln GEL)



The value added in construction has been steadily increasing from 24.1 mln in 2006 to 398.7 mln in 2017, peaking at 403.8 mln in 2016. In the second place, the wholesale and retail trade/repair of motor vehicles has increased from 29.2 mln in 2006 to 285.6 mln in 2017. Transportation and storage reached 179.6 mln in 2017 from an initial 100.8 mln in 2006, having passed through a relative decline by 2006 and subsequent upheaval. Manufacturing has been steadily increasing from 9.9 mln in 2006 to 135.8 in 2017. The accommodation and food service activities have increased to 135.6 mln in 2017 from 0.5 mln in 2006.

Table 153: Recent economic dynamics of the region, 2012-2017

Sectors (2012 - 2017)	Value Added	Output	Employment	Investment
Agriculture, forest and fishing	-30%	-35%	-3%	-99%
Mining and Quarrying	118%	155%	41%	-31%
Manufacturing	88%	89%	30%	-4%
Electricity, gas, steam and air conditioning supply	-100%	-100%	-100%	-100%
Water supply; Sewerage, Waste Management and Remediation Activities	-100%	-100%	-100%	714%
Construction	76%	97%	19%	408%
Wholesale and retail trade; repair of motor vehicles and motorcycles	115%	125%	75%	206%
Transportation and storage	38%	46%	104%	4%
Accommodation and food service activities	240%	149%	78%	2078%
Information and communication	263%	224%	96%	0%
Real estate activities	97%	92%	13%	1044%
Professional, scientific and technical activities	161%	200%	101%	-20%
Administrative and support service activities	20%	42%	-28%	-73%
Education	107%	93%	23%	50%
Human health and social work activities	87%	136%	79%	145%
Arts, entertainment and recreation	482%	388%	176%	22%
Other service activities	495%	373%	211%	-14%

Source: GeoStat.

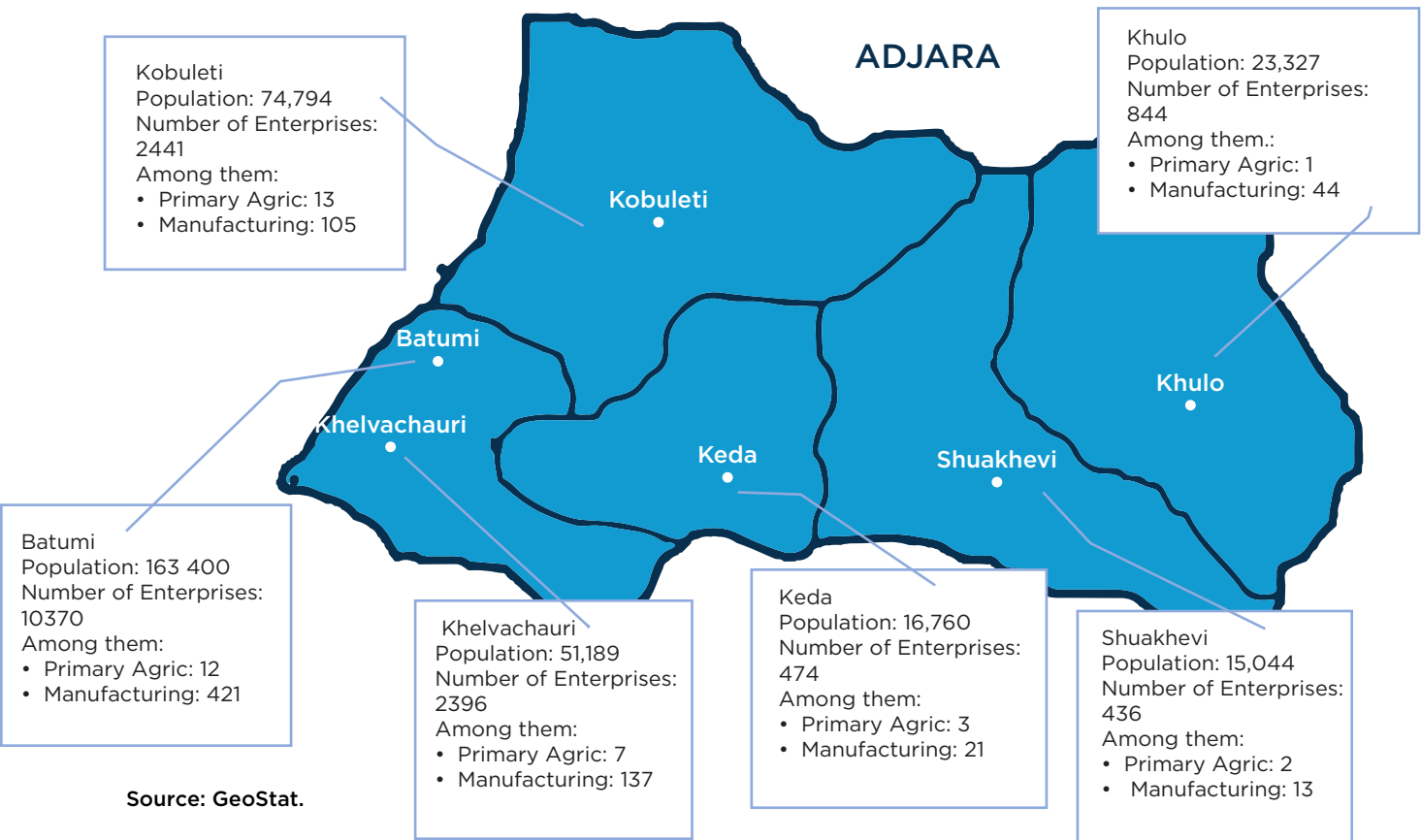
In the past five years, the industries which gained the most momentum in terms of value added were arts, entertainment and recreation (with 482 per cent), information and communication (263 per cent) and accommodation and food service. Manufacturing only accounted to only 88 per cent and the agriculture, forest and fishing had a negative movement (-30 per cent).

The industries which gained momentum in terms of output included arts, entertainment and recreation (388 per cent), information and communication (224 per cent), professional, scientific and technical activities (200 per cent), mining and Quarrying (155 per cent) and accommodation and food service activities (149 per cent). Manufacturing got only 89 per cent and agriculture, forest and fishing showed negative movement (-35 per cent).

In terms of employment growth figures, the leading sectors are arts, entertainment and recreation (with 176 per cent growth) and transportation and storage (with 104 per cent). Manufacturing received only 30 per cent growth and agriculture, forestry and fishing had negative indicator (-3 per cent).

The most dynamic sector in terms of investments in fixed assets turned out to be accommodation and food service activities (with 2,078 per cent growth), followed by the real estate activities (1,044 per cent growth). Manufacturing was on the negative side with -0.4 per cent and agriculture, forestry and fishing accounted for -99 per cent.

Map 33: Administrative map of Adjara AR with key figures



2.10.2 Past relevant studies

There have been several value-chain studies carried out in Georgia which identified value chains (mostly agriculture) in the Adjara region.

Table 154: The list of relevant studies

EXISTING VALUE CHAINS IN ADJARA	SOURCE
Blueberry/ Hazelnuts/ Fresh Fruit / Fruit Juice / Fresh Vegetable/ Processed Vegetable/ Root Vegetables/ Wine	Blueberry Value Chain Assessment; Hazelnuts Value Chain Assessment; Fresh Fruit Value Chain Assessment; Fruit Juice Value Chain Assessment; Fresh Vegetable Value Chain Assessment; Processed Vegetable Value Chain Assessment; Root Vegetables Value Chain Assessment; Wine Value Chain Assessment. Report By Economic Prosperity Initiative (EPI). Prepared by Deloitte Consulting LIC For USAID. 2011
Walnut	Walnut Value Chain Analysis in Adjara Region of Georgia . (GRDD Of GIPA,CENN) and PMC Research Center And Funded by European Union for Georgia ENPARD: Support to Agriculture and Rural Development. 2016
Honey	Honey Value Chain Rural and Agricultural Policy and Development Institute (Expert Irakli Javakhishvili) for the “Capacity Building to Agriculture-related Education and Research Institutions” Project/ENPARD/EU. The Characteristics of Beekeeping in Adjara Region. Alliances Lesser Caucasus Programme (ALCP) Mercy Corps / (SDC). 2015.
Trout	The Georgian Trout Sector: A Regional Value Chain Study. Care And ISET in Scope of the ENPARD. Funding From Austrian Development Cooperation 2016.
Tea	The Georgia’s Tea Sector: A Value Chain Study. CARE / ISET / (ENPARD) 2015

Source: UNIDO

In addition, the Adjara Development Strategy established priorities vis-à-vis the following sectors in the region for 2016-2021:

Table 155: The list of priority sectors identified by the strategy

PRIMARY AGRICULTURE/AGRO PROCESSING	MANUFACTURING
Distribution of High Productive And Resistant Crop Varieties Livestock Farming Organic Farming	Energy Sector : Development of Small Hydro Power Plants; Development of Renewable Energy Sources (BIOMASS) Tourism Sector And Tourism-related Production

Source: Adjara Regional Development Plan 2014-2021.

2.10.3 Regional statistical analysis

Using data about employment by industry and region, LQs were calculated for the Adjara AR region. The table below provides information about the general characteristics of the selected sectors, such as the number of employees, the number of active companies and their LQs.

Table 156: Top 20 Economic Sectors by LQ in Adjara AR

NACE Code	Sectors	Employment	LQ	N of Enterprises
50.20	Sea and coastal freight water transport	105,48	10,22	4
50.10	Sea and coastal passenger water transport	10,22	9,11	6
16.21	Manufacture of veneer sheets and wood-based panels	108,55	8,81	5
90	Creative arts and entertainment activities	195,66	8,28	3
87.30	Residential care activities for the elderly and disable	102,42	7,89	3
33.15	Repair and maintenance of ships and boats	18,37	6,58	6
14.31	Manufacture of knitted and crocheted hosiery	6,12	5,83	2
02.40	Support services to forestry	111,61	5,63	6
91.04	Botanical and zoological gardens and nature reserves activities	99,36	5,19	2
46.19	Agents involved in the sale of a variety of goods	122,97	4,90	9
14.13	Manufacture of other outerwear	2669,88	4,66	34
94.91	Activities of religious organizations	105,48	4,59	4
66.30	Fund management activities	12,25	4,54	4
46.31	Wholesale of fruit and vegetables	1051,81	4,53	115
01.27	Growing of beverage crops	12,25	4,17	4
46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	12,25	4,15	4
52.24	Cargo handling	1140,97	3,93	7
88.91	Child day-care activities	99,36	3,80	2
42.99	Construction of other civil engineering projects n.e.c.	630,89	3,79	8
20.41	Manufacture of soap and detergents, cleaning and polishing preparations	26,67	3,71	8

Source: UNIDO

It can be seen from Table 156 that sea and coastal freight water transport and sea and coastal passenger water transport has the largest LQs, meaning that this sector mostly concentrates in Batumi. However, the number of companies in the sectors mentioned is not very high, four and six companies respectively. Total estimated employment amounts to 10,548 and 1,837 people. One sector (the growing of beverage crops) related to agriculture sectors is in the top 20 concentrated sectors in Adjara. Sectors from manufacturing industries are also detected, such as the manufacture of veneer sheets, the manufacture of knitted and crocheted hosiery and wood-based panels, the manufacture of other outerwear and the manufacture of soap and detergents, cleaning and polishing preparations. It should be mentioned as well that the top 20 economics sectors by LQs cover not only mining and manufacturing industry but service sectors as well. However, since the scope of the study does not cover service sectors, we excluded them from further consideration, along with other non-relevant sub-sectors.

One important issue that can be easily noted from the table is the low number of companies in selected industries. The idea behind this is the following; even though the sectors have high LQs, the number of companies still can be low. Thus, the small number of companies might limit the possibility of cluster formation. For instance, in the manufacture of knitted and crocheted hosiery sector, the LQ indicators is above five which is associated with the high concentration of this sector in the Adjara region. But the number of companies in this industry is only two, which makes it difficult to think about cluster formation.

According to the LQ methodology applied, the intersecting sectors were selected to ensure that the selected sectors have high LQs and at the same time cover a large number of companies.

The table below summarizes the top 20 sectors by LQ by the number of enterprises (only agriculture and manufacturing) in Adjara. It should be mentioned that only one (the growing of beverage crops) agriculture-related sectors is noted in the list. The majority of sectors are from manufacturing industry. The LQs range between 1.51 and 8.81 which is higher than the predetermined threshold of 1.25.

Table 157: Top 20 relevant sectors by LQ and by number of enterprises (only agriculture and manufacturing)

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
16.21	Manufacture of veneer sheets and wood-based panels	108,55	8,81	5	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	811,68	1,02	173
33.15	Repair and maintenance of ships and boats	18,37	6,58	6	22.23	Manufacture of builders ware of plastic	379,75	1,57	124
14.31	Manufacture of knitted and crocheted hosiery	6,12	5,83	2	31.09	Manufacture of other furniture	498,84	1,36	102
02.40	Support services to forestry	111,61	5,63	6	08.12	Operation of gravel and sand pits; mining of clays and kaolin	252,48	1,49	52
14.13	Manufacture of other outerwear	2669,88	4,66	34	23.61	Manufacture of concrete products for construction purposes	237,17	1,14	47
01.27	Growing of beverage crops	12,25	4,17	4	23.70	Cutting, shaping and finishing of stone	137,81	1,88	45
20.41	Manufacture of soap and detergents, cleaning and polishing preparations	26,67	3,71	8	14.13	Manufacture of other outerwear	2669,88	4,66	34
23.62	Manufacture of plaster products for construction purposes	6,12	3,39	2	10.83	Processing of tea and coffee	100,17	1,89	32

22.21	Manufacture of plastic plates, sheets, tubes and profiles	114,67	3,35	7	23.63	Manufacture of ready-mixed concrete	541,84	3,13	24
23.63	Manufacture of ready-mixed concrete	541,84	3,13	24	16.10	Sawmilling and planing of wood	72,61	1,08	23
25.94	Manufacture of fasteners and screw machine products	6,12	2,54	2	25.12	Manufacture of doors and windows of metal	162,78	2,38	22
25.12	Manufacture of doors and windows of metal	162,78	2,38	22	10.72	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	61,65	0,43	20
23.31	Manufacture of ceramic tiles and flags	9,19	2,28	3	10.13	Production of meat and poultry meat products	58,19	0,14	19
17.23	Manufacture of paper stationery	6,12	2,10	2	16.23	Manufacture of other builders' carpentry and joinery	52,06	0,83	17
25.62	Machining	30,62	2,08	10	31.01	Manufacture of office and shop furniture	39,81	0,87	13
24.41	Precious metals production	9,19	1,90	3	10.61	Manufacture of grain mill products	129,98	0,50	12
10.83	Processing of tea and coffee	100,17	1,89	32	25.62	Machining	30,62	2,08	10
23.70	Cutting, shaping and finishing of stone	137,81	1,88	45	10.73	Manufacture of macaroni, noodles, couscous and similar farinaceous products	30,62	1,51	10
22.23	Manufacture of builders' ware of plastic	379,75	1,57	124	13.92	Manufacture of made-up textile articles, except apparel	30,62	1,17	10
10.73	Manufacture of macaroni, noodles, couscous and similar farinaceous products	30,62	1,51	10	22.22	Manufacture of plastic packing goods	30,62	0,26	10

Source: UNIDO

Table 157 provides information about top sectors by LQ, and the top 20 sectors by a number of companies. After analyzing the above tables, the sectors were identified which are ranked in top 20 by LQ and by the number of companies at the same time. These sectors are the following:

Table 158: Shortlisted sectors by number of enterprises in Adjara (LQ more than 1,25) (Only Agriculture and Manufacturing)

NACE Code	Sector	Employment	LQ	N of Enterprises
25.12	Manufacture of doors and windows of metal	162,78	2,38	22
23.70	Cutting, shaping and finishing of stone	137,81	1,88	45
23.63	Manufacture of ready-mixed concrete	541,84	3,13	24
22.23	Manufacture of builders' ware of plastic	379,75	1,57	124
14.13	Manufacture of other outerwear	2669,88	4,66	34
10.83	Processing of tea and coffee	100,17	1,89	32

Source: UNIDO

2.10.4 Analysis of potential clusters

Based on the research and analysis presented above, the following industry in multiple municipalities has been identified as potential clusters: 1) manufacture of doors and windows of metal, 2) cutting, shaping and finishing of stone, 3) manufacture of ready-mixed concrete, 4) manufacture of builders' ware of plastic, 5) manufacture of other outerwear, and 6) tea production

Manufacture of doors and windows of metal. A total of 22 companies are represented in the cluster are present in the four municipalities of Adjara. The biggest share comes to Batumi where 14 companies operate. Four companies are located in Khelvachauri, three in Kobuleti and one in Keda.

Table 159: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Manufacture of doors and windows of metal	14	1	3	0	4	0

Source: GeoStat.

In terms of size, 21 companies out of the total 22 are small enterprises and only one is medium-sized.

Table 160: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of doors and windows of metal	22	0	1	21	0%	5%	95%	162,78

Source: GeoStat; UNIDO

Cutting, shaping and finishing of stone. There are a total of 45 companies existing in the sector and represented in all municipalities. The vast majority of companies (33) are located in Batumi, four are in Khelvachauri, three in both Kobuleti and Shuakhevi and one in both the Keda and Khulo municipalities.

Table 161: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Cutting, shaping and finishing of stone	33	1	3	3	4	1

Source: GeoStat.

All 45 enterprises operating in the cutting, shaping and finishing of stone sector of Adjara are small companies.

Table 162: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Cutting, shaping and finishing of stone	45	0	0	45	0%	0%	100%	137,81

Source: GeoStat; UNIDO

Manufacture of ready-mixed concrete. This sector counts a total of 24 companies represented in all municipalities except Keda. Twelve companies are located in Batumi, four in both Kobuleti and Khelvachauri and two in both the Shuakhevi and Khulo municipalities.

Table 163: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Manufacture of ready-mixed concrete	12	0	4	2	4	2

Source: GeoStat.

Nineteen companies among the total 24 operating in the manufacture of the ready-mixed concrete sector are small and five are of medium size.

Table 164: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of ready-mixed concrete	24	0	5	19	0%	21%	79%	541,84

Source: GeoStat; UNIDO

Manufacture of builders' ware of plastic. In this cluster, there are a total of 124 enterprises. Among these the largest number (68 companies) is located in Batumi. Twenty-four companies are in Khelvachauri, 23 in Kobuleti, five in Keda, four in Khulo and one in Shuakhevi.

Table 165: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Manufacture of builders' ware of plastic	68	5	23	1	24	3

Source: GeoStat.

All among the above 124 companies operating within the sector the manufacture of the ready-mixed concrete sector are of a small size category.

Table 166: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of builders' ware of plastic	124	0	0	124	0%	0%	100%	379,75

Source: GeoStat; UNIDO

Manufacture of other outerwear. In this sector, there is a total 34 of companies, the vast majority of which (28) are located in Batumi. This sector is also represented Khelvachauri (four companies), Kobuleti and Khulo, one company each.

Table 167: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Manufacture of other outerwear	28	0	1	0	4	1

Source: GeoStat.

Among the 34 companies in the manufacture of other outerwear sector of Adjara, 29 are small enterprises and five belong to large companies.

Table 168: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of other outerwear	34	5	0	29	15%	0%	85%	2669,88

Source: GeoStat; UNIDO

Processing of tea and coffee. This sector counts the total number of 32 companies distributed in four municipalities. The largest number among them are located in Batumi: 19.

There are also seven enterprises located in Kobuleti, four in Khelvachauri and two in Keda.

Table 169: Distribution of number of enterprises by municipalities

Sector Name	Batumi	Keda	Kobuleti	Shuakhevi	Khelvach-auri	Khulo
Processing of tea and coffee	19	2	7	0	4	0

Source: GeoStat.

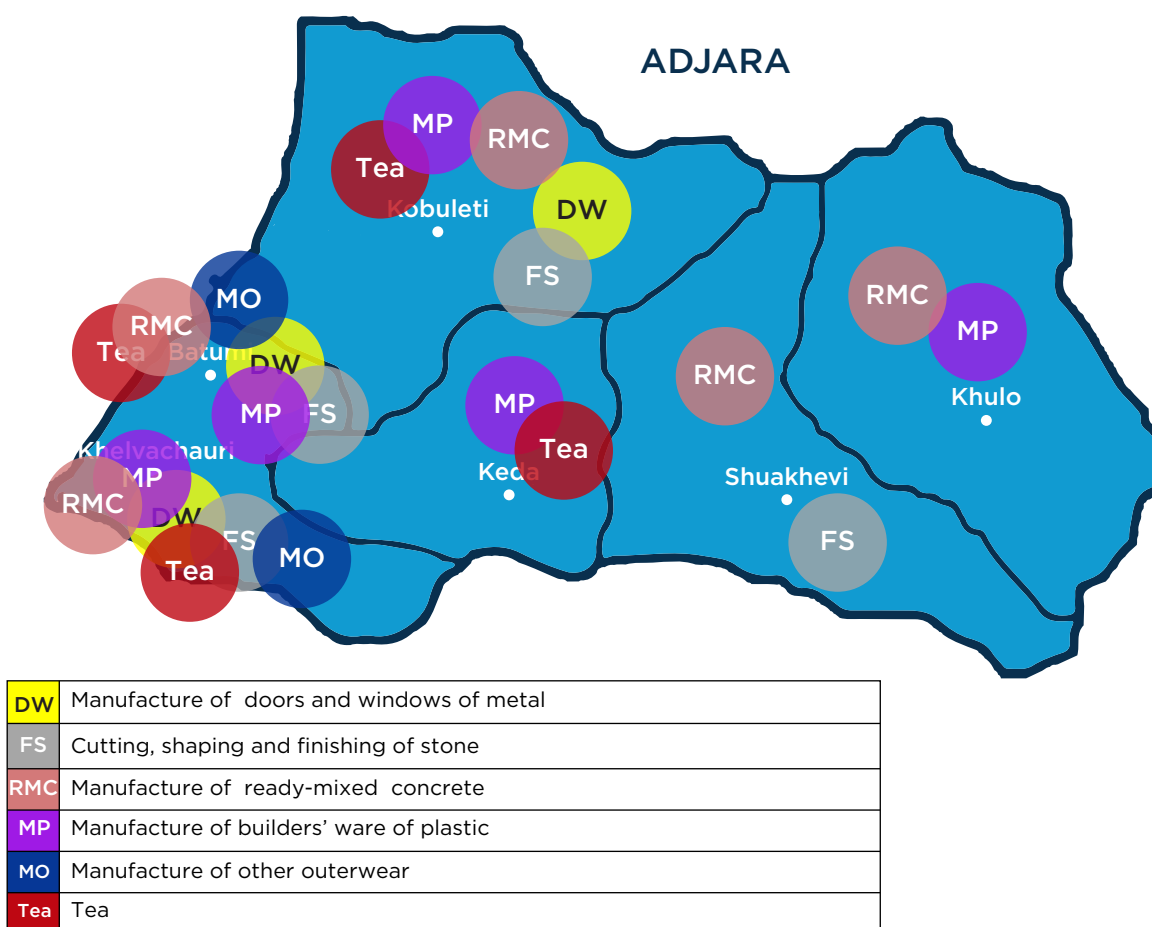
All 32 among the above companies from the processing of tea and coffee cluster are small.

Table 170: Distribution of number of enterprises in Adjara by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Processing of tea and coffee	32	0	0	32	0%	0%	100%	100,17

Source: GeoStat; UNIDO

Map 34: Cluster location



Source: UNIDO.

2.11 Overview of Imereti and its clusters

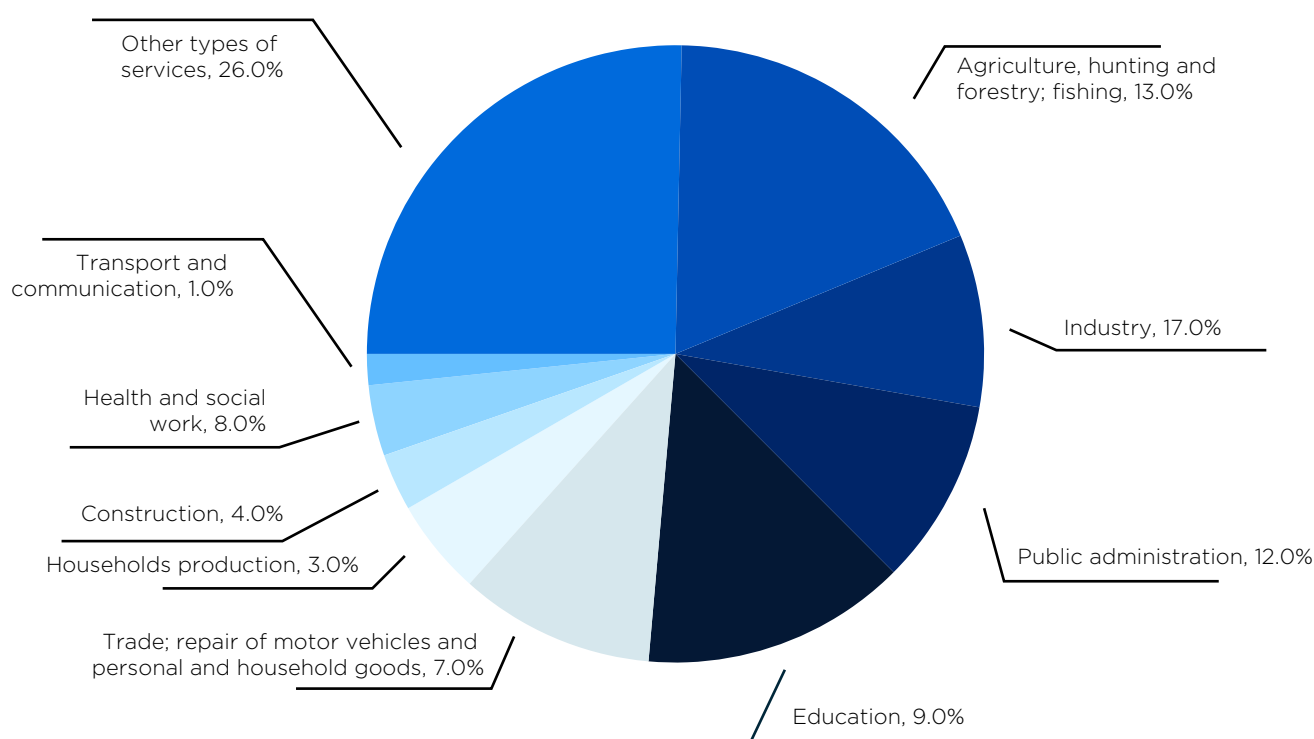
2.11.1 Overview of the region and its economy

The region of Imereti is located along the middle and upper end of the Rioni River. Imereti is divided into two parts: Upper and Lower Imereti. Imereti region includes the following self-governing entities: Kutaisi (the largest city of the region), Tkibuli, Tskaltubo, Chiatura, Baghdati, Vani, Zestaponi, Terjola, Samtredia, Sachkhere, Kharagauli, Khoni. Ten cities and 529 villages are located in the region. The overall area of the region is 6,552 km².

In terms of population, Imereti amounts to 14 per cent of the country's population (536,052 people) with a density of 81.8 people per km². Up to 28 per cent of the region's population lives in Kutaisi, while 25 per cent lives in mountainous areas of regions.

With regards to economic performance of the region, Imereti generates around 10 per cent of the country's GDP. If we compare the structure of GDP for Imereti and Georgia overall, a significant difference can be observed. Specifically, while industry and agriculture are the top-performing sectors for Imereti region, creating 30 per cent of the total value added of the region, in Georgia the trade sector has the largest share (17.1 per cent) followed by industry (16.8 per cent).

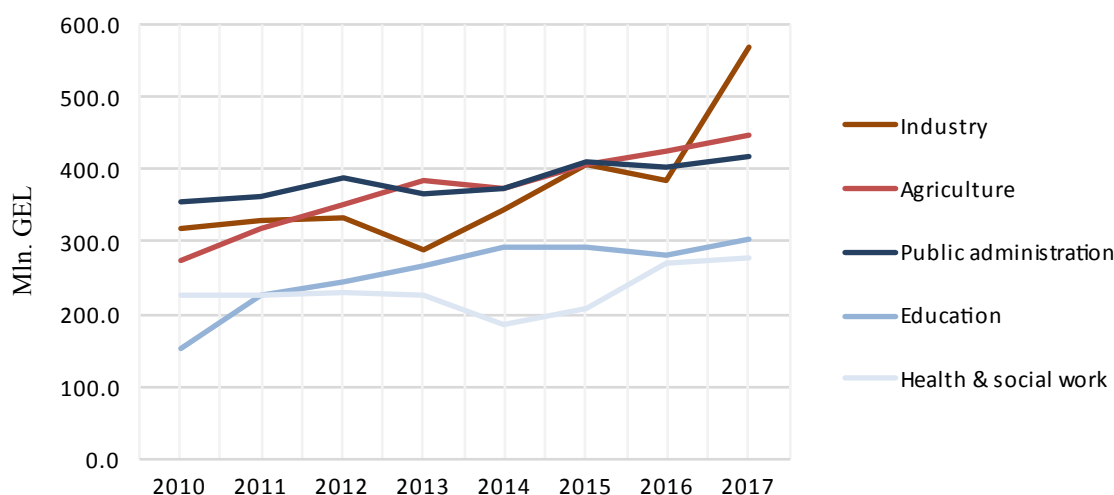
Figure 31. Regional GDP by economic activity, 2017



Source: GeoStat.

The year 2017 was the first time that the industry sector became the largest sector of the Imereti region. This was mostly because of a dramatic jump in value added in 2017 compared to 2016. The growth accounted to 47.7 per cent. A similar growth in industry sector was observed in 2013-15 period as well. While industry sector experienced such substantial growth during the last decade, the agriculture sector was less volatile with an overall increasing trend. In other sectors such as public administration, education and health & social work positive trend are also detected.

Figure 32. Dynamics of GDP in top five sectors in Imereti



Source: GeoStat.

According to the latest data from the business registry, around 23,000 active companies are located in the Imereti region. Twenty-nine of them are categorized as large enterprises, while 213 are of medium size and 22,575 are small. The largest portion of the companies are found in Kutaisi (9,165 or 39.8 per cent), followed by Zestaphoni with 2,769 enterprises. Over 1,000 active companies are also based in Samtredia (1,754), Sachkhere (1,682), Tskaltubo (1,583), Chiatura (1,361) and Terjola (1,199). The lowest number of companies is in Kharagauli (573).

Data on business demographics shows that in Imereti the birth rate of companies was 19.5 per cent in 2017, which is just under the country average (19.7 per cent)²¹. The significant difference was only observed in 2015 when the birth rate in Imereti accounted to 41.1 per cent while in Georgia this indicator was far lower at 33.4 per cent.

In terms of enterprise death, the data for Imereti and Georgia is more or less similar. For instance, in 2017 the death rate of the companies was 14.6 per cent for Imereti while it was 15.6 per cent for Georgia. Thus, the analysis based on the business demographics data shows that there is no systematic difference between the overall trend and Imereti region.

When it comes to employment, in Imereti the rate of unemployment is just under the country average at 12.4 per cent. Interestingly, employment and economic activity rates in Imereti are much higher than for Georgia overall.

²¹ Birth of enterprise defined as a creation a new company of re-active a company which was not operating during the last 2 years.

Table 171: Employment data

INDICATOR	IMERETI	GEORGIA
UNEMPLOYMENT RATE	12.4%	12.7 %
ECONOMIC ACTIVITY RATE	68.8%	63.9 %
EMPLOYMENT RATE	60.3%	55.8 %

Source: GeoStat.

Business sector statistics gives an opportunity to analyze employment by economic sector. First, the share of Imereti in total business sector employment is about 7.3 per cent. Manufacturing is the sector with the highest employment in Imereti, with around 25 per cent of business sector employment. The second largest sector in terms of employment is retail trade with 23 per cent, followed by health & social care at 14 per cent. Interestingly in the agriculture sector only one per cent of total business sector employment in the Imereti region.

In addition, the largest increases in employment were recorded in the arts, entertainment & the recreation and information & communication sectors, 38.5 per cent and 29.7 per cent, respectively. It should be mentioned as well that even though the share of agriculture in regional employment is very modest, the sector experienced double-digit growth (11.1 per cent) during 2012-17, on average. Similarly, positive growth is observed in mining & quarrying and manufacturing, but in manufacturing the growth rate was much lower, 1.1 per cent, than in mining & quarrying at 6.5 per cent.

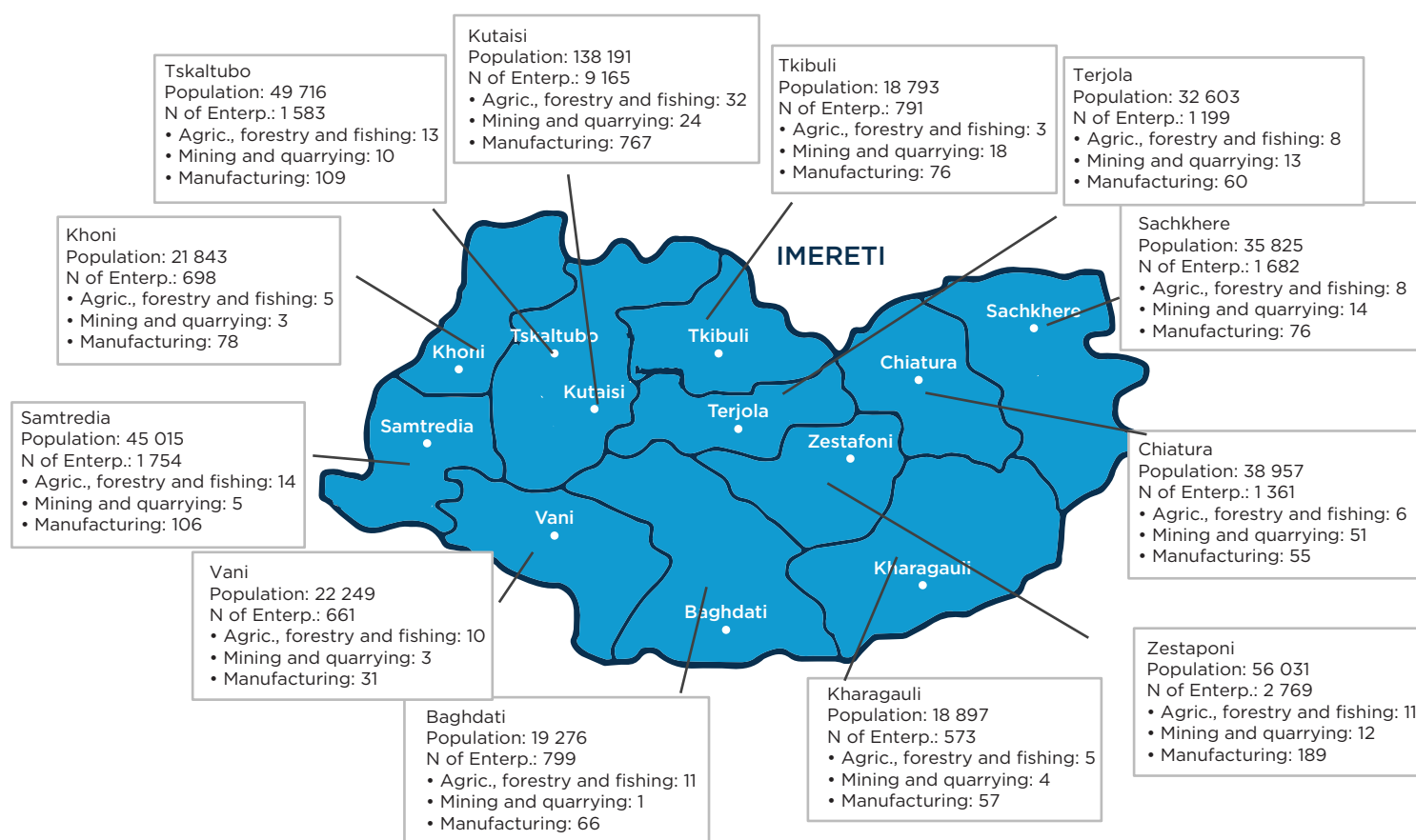
Table 172: Labor productivity (production value over number of employees), 2012-2017

INDICATOR	2012	2013	2014	2015	2016	2017
IMERETI	27.1	26.3	28.7	31.9	33.2	43.6
GEORGIA	43.2	42.8	44.0	47.9	51.2	54.0

Source: GeoStat.

While the share of Imereti region in total business sector employment is 7.3 percent, the share of turnover and productive value is much lower; 4.9 per cent and 5.9 per cent accordingly. This means that compared to country average the labor productivity in Imereti is lower. As it is observed from the Table 172, the productivity gap between Imereti and Georgia is still noticeable, but it has reduced significantly during the last decade.

Map 35: Administrative map of Imereti with key figures



Source: GeoStat.

2.11.2 Past relevant studies

A study done by World Bank in 2014 highlights tourism and agriculture, together with trade as the main sectors for the Imereti region. According to the study, the industrial enterprises functioning in Imereti until the 1990s were a manganese plant in Chiatura, coal mines in Tkibuli, ferro-alloy plant in Zestafoni, an electric elements plant in Shorapani, an automotive plant, lithopone plant, tractor plant, electromechanical plant, bottle plant in Kutaisi, etc. Out of these the only ones currently operating are the Georgian Manganese Ltd's Tkibuli mines and the manganese enrichment plants in Chiatura. In addition, there are small washing enterprises, ferroalloy enterprises in Nakhshirghele and Zestafoni, lime manufacturers, asphalt and cement plants, sawmills, metallurgical plants and small mining and processing enterprises. Sairme, Zvare, Leghva mineral waters are bottled in the region.

A value chain analysis of tomato production in the Imereti region (PMC, 2018) underlines the importance of the sector in the region. The product for the study was chosen by local stakeholders as they considered the tomato an important product for peoples' livelihood in the region. It is important to note that out of the 64 per cent of self-employed people in the region most of them are involved in agriculture, and particularly in tomato production. The sector is characterized by low productivity level, poor quality of technology, poor quality of the irrigation systems and very low off season production level. Furthermore, the linkages between the main value chain actors are weak.

The economic level of the development of the Imereti region is greatly determined by small farms, namely, greenhouses (in Tskaltubo farm households grow up to 25,000 tonnes of greens). The region's greenhouses, with a total area of 462 ha account for two-thirds of all greenhouses in the country. Furthermore, recently the Government of Georgia announced that it is going to contribute to the establishment of a greenery cluster. The cluster should cover 120 hectares of state-owned territory. Private parties can join the cluster, too. The government plans to spend roughly 100 million Lari on the project, which will involve the development of modern-standard hothouses, warehouse and packaging services and a storage facility near the Kopitnari airport as the greens have already proven their export value, but the potential is even bigger.²²

With the support of People in Need (PIN), in 2013-2015 eleven value chain studies were conducted in the Imereti and Racha regions (PIN, 2013-2015). The goal of the studies was to obtain basic information and data on the growth of small farmers' cooperation and productivity. The following value chain studies were conducted: berry production, corn production, fishing, fruit production, hazelnut production, meat production, production of milk and milk products, greenhouse production, honey production, poultry and egg production, viticulture and winemaking.

2.11.3 Regional statistical analysis

Using the data about employment by industry and region, LQs for Imereti region were calculated. The table below provides information about the general characteristics of the selected sectors, such as the number of employees, the number of active companies and their LQs.

²² CBW, Government to Arrange Greenery Cluster in Imereti Region
<https://old.cbw.ge/economy/government-to-arrange-greenery-cluster-in-imereti-region/>

Table 173: Top 20 Sectors by number of enterprises in Shida Kartli (LQ more than 1,25)

NACE Code	Sectors	Employment	LQ	N of Enterprises
05.10	Mining of hard coal	870	11.39	12
24.51	Casting of iron	91	10.86	4
14.14	Manufacture of underwear	169	9.94	2
27.51	Manufacture of electric domestic appliances	86	9.26	2
10.12	Processing and preserving of poultry meat	6	8.00	3
27.33	Manufacture of wiring devices	4	7.55	2
08.91	Mining of chemical and fertilizer minerals	6	6.31	3
47.63	Retail sale of music and video recordings	4	5.16	2
46.50	Wholesale of information & communication equipment	6	5.08	3
35.30	Steam and air conditioning supply	6	4.95	3
22.19	Manufacture of other rubber products	13	4.92	6
93.19	Other sports activities	853	4.57	4
79.90	Other reservation service and related activities	97	4.33	7
62.03	Computer facilities management activities	95	4.27	6
18.11	Printing of newspapers	8	3.88	4
58.20	Software publishing	4	3.85	2
25.94	Manufacture of fasteners and screw machine products	8	3.83	4
23.20	Manufacture of refractory products	27	3.80	13
25.50	Forging, pressing, stamping and roll-forming of metal	25	3.62	12
81.29	Other cleaning activities	440	3.47	14

Source: UNIDO

It can be seen from Table 173 that the mining of hard coal has the largest LQs, meaning that this sector mostly concentrates in the Imereti region. However, the number of companies in coal mining industry is not very high. Only 12 companies are found in Imereti and the total employment amounts to 870 people. Interestingly, no agriculture sectors are in the top 20 concentrated sectors in Imereti. Two sectors in mining and quarrying, namely the mining of hard coal and the mining of chemical and fertilizer minerals can be observed. The sectors from manufacturing industries are also detected, such as the manufacture of underwear, the manufacture of electric domestic appliances, the processing and preserving of poultry meat, the manufacture of wiring devices, the manufacture of other rubber products, the printing of newspapers, the manufacture of fasteners and screw machine products, the manufacture of refractory products and the forging, pressing, stamping and roll-forming of metal. It should be noted as well that in the top 20 economic sectors by LQs covers not only mining and manufacturing industry but service sectors as well. However, the scope of the study does not cover service industry. So, for detailed analysis service sectors are excluded. One important issue that can be easily noted from the table is the low number of companies in selected industries. The idea behind it is the following; even though the sectors have high LQs, the number of companies still can be low. Thus, a small number of compa-

For instance, in the manufacture of underwear and electric domestic appliances LQ indicators are above nine in both cases. This is related to the high concentration of these sector in the Imereti region; however, the number of companies in these industries are only two which makes it difficult to consider cluster formation in these sectors.

It is worth mentioning that no agriculture sectors are detected in the list. The majority of sectors are from the manufacturing industry. The LQs range between 2.55 and 11.39 which is higher than the predetermined threshold 1.25. On the other hand, the number of companies are still very low. In most cases the number of companies is lower than five. The highest number of companies are presented in the cutting, shaping and finishing of stone followed by the manufacture of footwear and the manufacture of other builders' carpentry and joinery.

Table 174: Top 20 relevant sectors by LQ and by number of enterprises

Top 20 Relevant Sectors By LQ					Top 20 Relevant Sectors By Number Of Enterprises				
NACE Code	Sectors	Employment	LQ	N of Enterprises	NACE Code	Sectors	Employment	LQ	N of Enterprises
05.10	Mining of hard coal	870	11.39	12	10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes	853	1.18	327
24.51	Casting of iron	91	10.86	4	31.09	Manufacture of other furniture	315	0.94	150
14.14	Manufacture of underwear	169	9.94	2	22.23	Manufacture of builders' ware of plastic	304	1.38	144
27.51	Manufacture of electric domestic appliances	86	9.26	2	23.70	Cutting, shaping and finishing of stone	180	2.69	85
10.12	Processing and preserving of poultry meat	6	8.00	3	08.12	Operation of gravel and sand pits; mining of clays	203	1.32	57
27.33	Manufacture of wiring devices	4	7.55	2	23.61	Manufacture of concrete products for construction	196	1.04	54
08.91	Mining of chemical and fertilizer minerals	6	6.31	3	14.13	Manufacture of other outerwear	1112	2.13	49
22.19	Manufacture of other rubber products	13	4.92	6	07.29	Mining of other non-ferrous metal ores	183	1.34	48
18.11	Printing of newspapers	8	3.88	4	15.20	Manufacture of footwear	95	3.38	45
25.94	Manufacture of fasteners and screw machine products	8	3.83	4	16.23	Manufacture of other builders' carpentry and joinery	160	2.81	37
23.20	Manufacture of refractory products	27	3.80	13	11.07	Manufacture of soft drinks; production of mineral waters	158	0.58	36
25.50	Forging, pressing, stamping and roll-forming of metal	25	3.62	12	08.11	Quarrying of ornamental and building stone	74	2.35	34
24.10	Manufacture of basic iron and steel and of Ferro-alloys	954	3.38	12	10.72	Manufacture of rusks and biscuits	67	0.52	32
15.20	Manufacture of footwear	95	3.38	45	31.01	Manufacture of office and shop furniture	62	1.50	29
28.41	Manufacture of metal forming machinery	4	3.18	2					

01.28	Growing of spices, aromatic, drug and pharmaceutical crops	11	2.84	5	11.02	Manufacture of wine from grape	62	0.11	29
16.23	Manufacture of other builders' carpentry and joinery	160	2.81	37	16.10	Sawmilling and planing of wood	133	2.16	24
23.19	Manufacture and processing of other glass	4	2.78	2	10.61	Manufacture of grain mill products	133	0.56	24
23.70	Cutting, shaping and finishing of stone	180	2.69	85	25.12	Manufacture of doors and windows of metal	131	2.10	23
23.69	Manufacture of other articles of concrete, plaster and cement	8	2.55	4	25.99	Manufacture of other fabricated metal products n.e.c.	48	1.16	23
					01.47	Raising of poultry	48	0.25	23

Source: UNIDO

As for the top 20 sectors by the number of companies, the manufacture of bread and the manufacture of fresh pastry goods is the sector with the highest number of companies, followed by the manufacture of other furniture and the manufacture of builders' ware of plastic. However, the LQs in these sectors are quite modest if we compare the corresponding indicator for the cutting, shaping and finishing of stone, the manufacture of footwear and the manufacture of other builders' carpentry and joinery sectors.

Cross matching the two lists, three sectors emerge which are ranked in the top 20 by LQs and by number of companies at the same time. These sectors are the following:

- Cutting, shaping and finishing of stone
- Manufacture of footwear
- Manufacture of other builders' carpentry and joinery

2.11.4 Analysis of potential clusters

Cutting, shaping and finishing of stone: In general, the Imereti region is rich in stone resources. There are two largest stone mines: Eklari and Gelati. Because of the availability of stone resources, the stone cutting, shaping and finishing sector is developed in the region. Currently, out of 294 active companies in this sector 85 of them are operating in Imereti. Among them, 84 companies are categorized as small and in one case the size is not defined.

Table 175: Distribution of number of enterprises in Imereti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Cutting, shaping and finishing of stone	85	0	0	84	0%	0%	99%	180

Source: GeoStat; UNIDO.

Interestingly, the companies in this sector are situated in all municipalities of the Imereti region. While the largest number of companies are found in Tkibuli and Kutaisi. Only one company is in each Vani and Sachkhere.

Table 176: Distribution of number of enterprises by municipalities

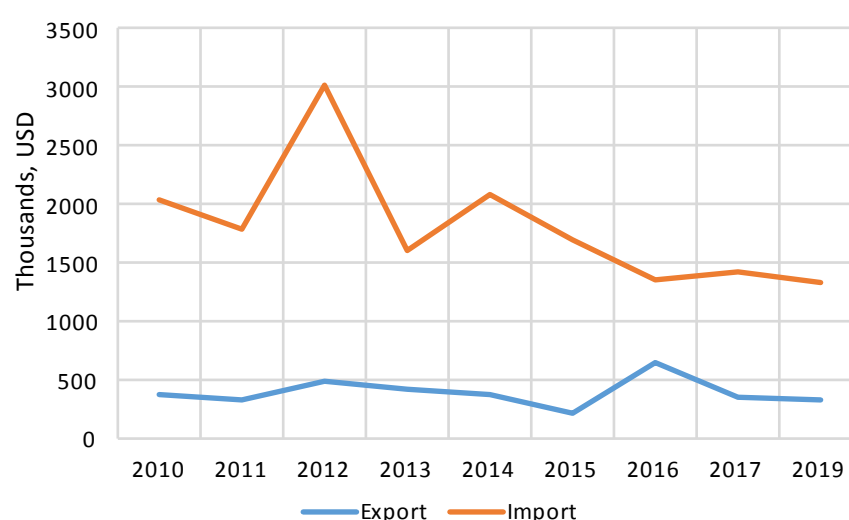
Sector Name	Tkibuli	Kutaisi	Terjola	Zestaphoni	Tskaltubo	Samtredia	Khoni	Chiatura	Vani	Sachkhere	Khargauli
Cutting, shaping and finishing of stone	29	23	8	6	6	3	3	2	1	1	3

Source: GeoStat.

According to business registry data, the majority of companies are operating either as individual merchants or limited liability companies. All active companies in this sector have local private ownership. No foreign-owned or state-owned companies were detected. In terms of survival rate, about 45 per cent of companies which were registered in this sector in the Imereti region are still active.

Stones products has export potential as well. The figure below shows the dynamics of export and import of stone products during 2010-18²³. As it is clearly seen from the figure, the import volume is always higher than export, but fortunately the trade gap has been decreasing in the last few years. While the import experienced an overall decreasing trend, export remained more or less the same. One significant jump is observed in 2016, but then the volume started declining.

Figure 33. Export and Import of Different Stone Products, 2010-18



Source: GeoStat.

²³ In the calculations stone product covers the following export and import categories: Marble, tufa, ecaussine and other calcareous monumental or building, alabaster; Granite, basalt and other monumental or building stone; Pebbles, gravel, crushed stone, shingle and flint, macadam of slag, dross; Dolomite, roughly trimmed or merely cut or agglomerated.

The export markets are also worth mentioning. Specifically, about 45 per cent of stone product exports go to Armenia. The second-largest trade partner is Russia with about 21 per cent. More than 10 per cent of exports go to Germany and Azerbaijan as well, 17 per cent and 13 per cent, respectively. Kuwait, Turkey, Italy, USA and Belarus are also presented on the trade map.

Case study of Gazco:

An interview with the Gazco founder and manager revealed that the company has been exclusively extracting and processing limestone and dolomite from the Gelati stone quarry since 2018. They have been licensed for ten years.

According to the respondents, stone extracted from Gelati quarry is unique due to its characteristics namely its endurance, low absorption of water, less fragility, etc. The company has sent stone samples to a testing lab and is waiting for the results to acquire an international certificate.

Due to the worldwide demand for high-quality Georgian stones, Gazco often attends international exhibitions to discover exporting opportunities. Georgian stones can be competitive on the global market quality-wise and also price-wise, especially on European markets. Gazco manages two processes: stone extraction and its processing. For extraction, the company employs modern technology, while the technology for processing is outdated and needs updating.

As for cooperation with other companies, it occurs more in terms of information sharing. Gazco is open to cooperate on big orders when it is not able to handle it just by themselves.

The market is represented by companies ranging from small to large in size. While small companies are occupied with just extraction, medium and large companies add value by processing the stone. Large companies have updated technology and are able to secure government tenders. Small companies have outdated machinery and therefore have difficulties selling what they extract.

Manufacture of footwear: Shoe production has a long history in the Imereti region. Back in the Soviet era, the largest shoe factory in Kutaisi. Nowadays, this industry is still active in the Imereti region. Out of 127 active companies in this sector, 45 of them are operating in Imereti. All of the shoe factories in the Imereti region are categorized as small and most of footwear is leather-made. Leather is either domestically produced or imported, mostly from Turkey.

An advantage that Georgia offers in the manufacturing of footwear is proximity to strategic markets and possibility to save up to 12-30 per cent duty with free trade agreements. Footwear can have zero import tax to the EU, Turkey and CIS countries.

Table 177: Distribution of number of enterprises in Imereti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of footwear	45	0	0	45	0%	0%	100%	95

Source: GeoStat; UNIDO.

The companies in this sector are mostly located in Kutaisi, Tskaltubo, Sachkhere and Zestaphoni municipalities also host a limited number of companies.

Table 178: Distribution of number of enterprises by municipalities

Sector Name	Kutaisi	Zestaphoni	Tskaltubo	Sachkhere
Manufacture of footwear	36	3	5	1

Source: GeoStat.

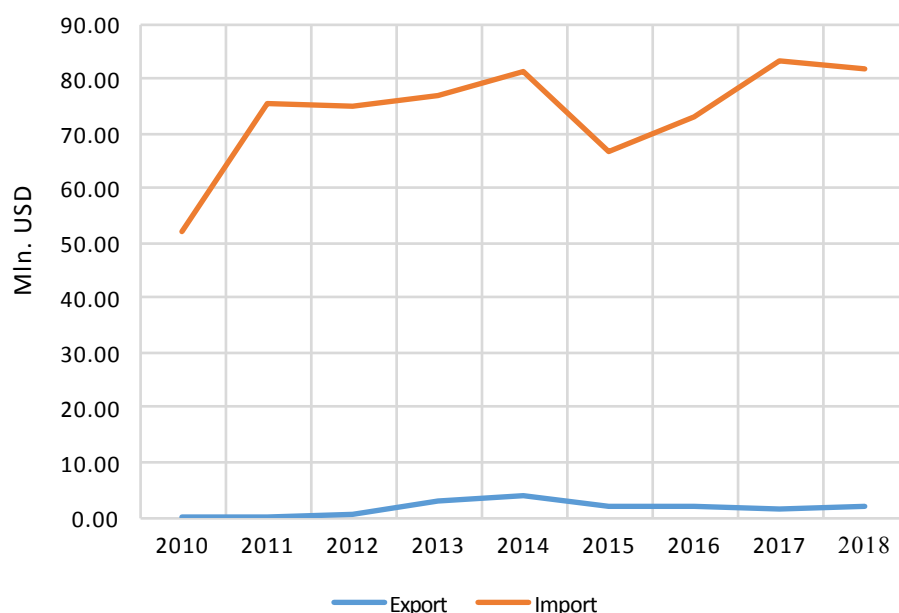
As the data from the business registry shows, the majority of companies (about 65 per cent) operate as individual merchants while the remaining 35 per cent are limited liability companies. Almost all of the active companies in this sector have local private ownership, while only one company is foreign owned. In terms of survival rate, about 31 per cent of companies which were registered in this sector in the Imereti region are still active.

It should be mentioned as well that the export of shoe products has increased significantly since 2010²⁴. For instance, in 2010 the export of shoes was 0.2 mln USD. At the end of 2018 the export volume amounted to 2.2 mln USD. Interestingly, the largest shoe exports recorded in 2014 was about 4.0 mln USD.

In terms of import, a significant trade imbalance is observed. The volume of import is about 37 times higher than export. Overall, the import experienced an increasing trend with a significant reduction in 2015, but its recovery was relatively fast.

²⁴ Shoe product covers the following export and import categories: Waterproof footwear with outer soles and uppers of rubber or of plastics, Other footwear with outer soles and uppers of rubber or plastics, Footwear with outer soles of rubber, plastics, leather and uppers of leather, Footwear with outer soles of rubber or leather and uppers of textile materials, Other footwear, Parts of footwear, gaiters, leggings and similar articles, and parts thereof.

Figure 34. Export and Import of Shoe Products, 2010-18



Source: GeoStat.

Interestingly, in 2018 almost 65 per cent of shoe exports went to Armenia, followed by Ukraine (9.9 per cent), Kazakhstan (8.9 per cent) and Iraq (6.1 per cent). In total, Georgian shoes are exported to 27 countries including the USA, Italy, Germany and the UK.

The shoe producing sector attracted the attention not only from private companies but also from government entities. Specifically, Enterprise Georgia works actively with companies in this industry to promote export and give opportunities to attend international fairs, namely MICAM²⁵. The Export Development department under Enterprise Georgia finances 80 per cent of the participation fees and provides a list of possible large buyers and promotes B2B meetings. According to an interview, next year Georgian shoe producers can participate in the MICAM exhibition. Besides the participation in international exhibitions, Enterprise Georgia delivers workshops and masterclasses for shoe producers to provide information and to identify active export-oriented companies.

After analyzing the shoe market in Georgia and conducting interviews with key informants, the largest producers in Imereti were identified and interviewed.

²⁵ Micam the leading international exhibition of the footwear industry. It is a unique event of its kind with footwear collections at each edition, successfully merging business and fashion. It confirms its role as a privileged stage for the promotion of new collections and, at the same time, a decisive business opportunity to start contacts concrete trade

Case study of the company Levanto:

According to the respondent, Levanto is the biggest producer in Kutaisi, while the rest of the market is represented by small companies producing rather low-quality shoes. Those producers do not have upgraded equipment and skills and they lack capital to be able to launch their own selling points or outlets. Instead, they deliver production to so-called bazaars and sell on consignment which often becomes quite problematic, e.g. vendors in the bazaar might break deals by not paying on time or at all. For that reason, Levanto opted for having its own selling points. Currently, the company has several shops in Kutaisi and Tbilisi. Sales are limited to these two cities. They do not export or sell online.

The company's main material in the production is leather. Even though there is a leather processing factory in Rustavi, Levanto imports it from Turkey and Spain as they are not satisfied with the domestic quality. Of course, it would reduce the costs if there were quality materials made in Georgia. During the last 15 years Levanto until recently was mostly concentrated on building up (strengthening) its production processes, while marketing has been the least taken care of. The company has bought modern equipment of high capacity. When fully utilized, it can produce 200-300 pairs of shoes daily.

Since Levanto's factory is not utilized fully due to insufficient demand for their shoes in the Georgian market, it found the way to fill this void by providing service of producing shoes for the famous company Crosty. Crosty designs the shoes and orders gives Levanto to produce them. Levanto and Crosty are not competitors as Crosty is working on different segment; they are oriented on exporting shoes to the USA.

Case study of the company Crosty:

Crosty was founded by two young brothers in 2016. The brothers are oriented to branding and thus invest heavily in brand building and promotion. The production is export-oriented, sold online in almost 20 countries around the world. Moreover, the company displays its products in outlets in three countries. Currently, they are trying strongly to position on the US market. Crosty produces around 1,200 pairs yearly one pair sells for around \$385.

Crosty has strong ties with Levanto as all its shoes are sewed there. However, manufacturing is not fully outsourced as Crosty manages and monitors the manufacturing process; the brothers have hired a quality control specialist who operates onsite in Levanto. Crosty plans to invite an Italian designer who will observe production process in Levanto and help Crosty develop strategies to speed it up (e.g. specialization level might need to be increased) so that the plant production goes up to 12,000 pairs yearly. The respondent thinks that designers in Georgia who produce in very small quantities do not have skills and knowledge of how to commercialize their products. When the Crosty founders started, they soon realized the need to outsource production if they wanted to turn shoemaking into a business. Selling and manufacturing are totally different business processes. Thus, this can be an interesting and feasible business model for all designers in Georgia to outsource their production and this way be able to fully concentrate on design and branding. Crosty acknowledges the benefits of Enterprise Georgia's initiative in co-financing Georgian designers to attend international exhibitions, however they think that designers often go without proper preparation since they do not have the information what is needed for winning negotiations with international buyers there. Thus, the respondent encourages Enterprise Georgia to organize workshops and trainings to better prepare local shoemakers for international exhibitions.

Case study of the company Cortex: Cortex is based in Tbilisi. The reason we interviewed this company is that it also has conducted negotiations with Levanto, though with no result so far. Cortex was founded in 2018 and currently has the capacity to produce 90 pairs of shoes monthly. The company sells their products in several outlets in Tbilisi and online. Currently, the production process is labor-intensive, but the plan is to automate it, which requires solid investment in machinery. If Cortex had 3D printers as Levanto does, productivity would be much higher, lowering their labor costs. The materials the company uses are imported from Turkey.

One of the main problems in the business Cortex mentioned is the supply of leather materials as (1) imported leather for small companies like Cortex is expensive and (2) the quality of local production is low.

Large companies like Levanto can make direct orders to import intermediaries and buy leather in bulk quantities which reduces the price substantially, whereas Cortex needs to buy from the local wholesalers at considerably higher prices.

Local leather processing companies mostly use the leather of Georgian origin. Due to the technology not being advanced enough, the quality of locally processed leather is quite low, which eventually reflects in uneven colors. The only colors that can withstand the low quality of leather are black and brown. So, small shoemaking companies that use Georgian processed leather have to limit their production to those colors. The poor assortment in turn makes it difficult to sell the product.

According to the respondent, the problem in shoemaking is that business is still mostly led by representatives of older generations. The majority of those people have hard time to learn the rules of the capitalist and globalized world of the 21st century. For them, the main priority remains the same from the Soviet times and still is the durability of the shoe but not its design. They mostly focus on production part but not on marketing. "Today the competition has become so fierce that, the details that matter the most." The Cortex manager thinks that apart from local shoemakers participating in international exhibitions, organizing local exhibitions should be also actively pursued where international buyers would be invited.

Manufacture of other Builders' Carpentry and Joinery: The manufacture of other builders' carpentry and joinery is the subsector of the larger category of the manufacture of products of wood, cork, straw and plaiting materials. In total, there are 45 companies and approximately 177 employees in this sector. The manufacture of other builders' carpentry and joinery has a dominant position, both in the number of companies and LQ.

Table 179: The structure of Manufacture of products of wood, cork, straw and plaiting materials industry

NACE Code	Economic Sector	N of Enterprises	LQ	Employment
16.23	Manufacture of other builders' carpentry and joinery	37	2.81	160
16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	6	0.78	13
16.21	Manufacture of veneer sheets and wood-based panels	2	0.38	4

Source: UNIDO

Out of 189 active companies in this sector, 37 of them are operating in Imereti. Thirty-six companies are small-sized while only one is medium-sized.

Table 180: Distribution of number of enterprises in Imereti by size

sector	Total N of enterprises	Size (Values)			Size (Share)			Estimated Employment
		Large	Medium	Small	Large	Medium	Small	
Manufacture of other builders' carpentry and joinery	37	0	1	36	0%	2.7%	97.3%	160

Source: GeoStat; UNIDO.

Companies in this sector are located in most municipalities of Imereti. The majority of companies are Kutaisi based, followed by Zestaphoni.

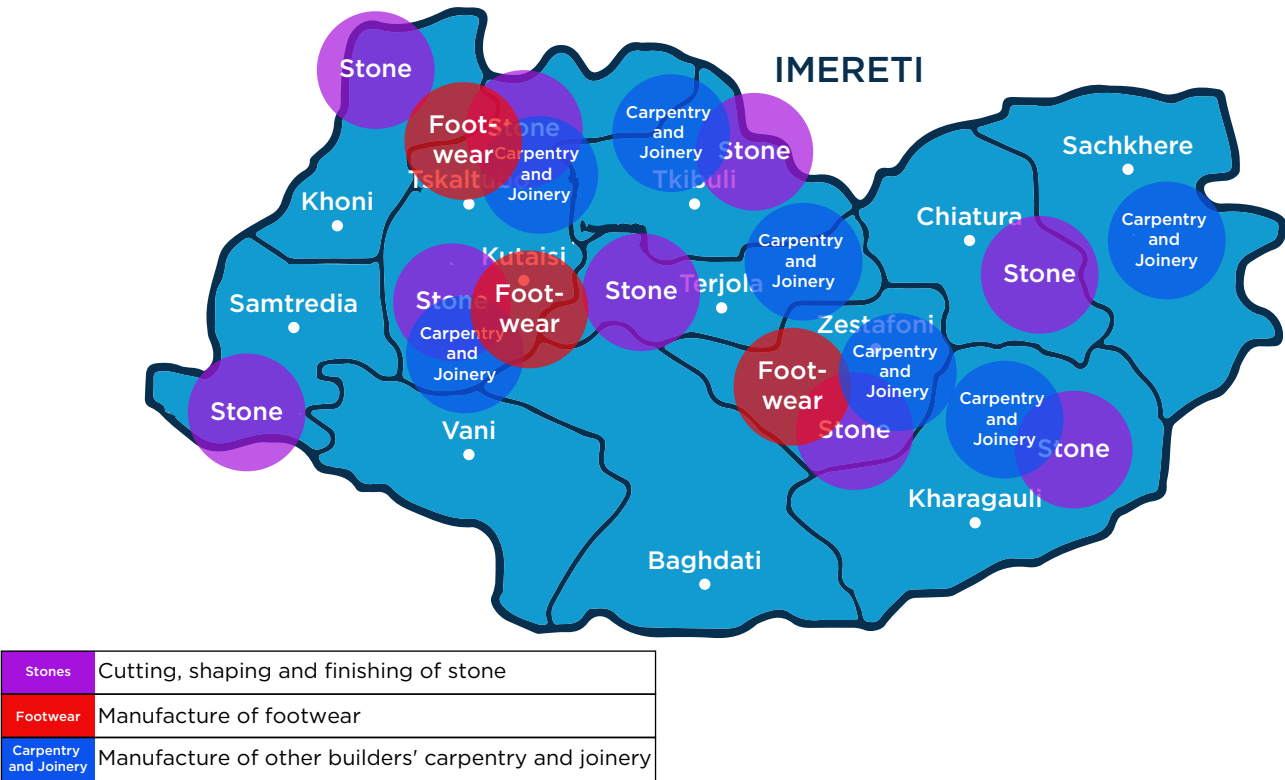
Table 181: Distribution of number of enterprises by municipalities

Sector Name	Tkibuli	Kutaisi	Terjola	Zestaphoni	Tskaltubo	Baghdati	Chiatura	Vani	Sachkhere	Kharagauli
Manufacture of other builders' carpentry and joinery	3	14	2	7	2	1	1	1	3	3

Source: GeoStat.

As the data from the business registry shows, the majority of companies are operating as individual merchants. All active companies in this sector have local private ownership. In terms of survival rate, about 28 per cent of companies which were registered in this sector in the Imereti region are still active.

Map 36: Cluster location



Source: GeoStat; UNIDO.

2.11.5 Analysis of potential clusters identified through information gathered from different stakeholders

During desk research and interviews, greenhouses and beekeeping were found to be noteworthy but did not end up in the statistical analysis (due to either lack of official statistics of the sector or relatively low employment).

Greenhouse (*Tskaltubo*). According to an interview with the founder of Herbia, there are 5,000 small farmers who have the capacity to produce 10,000 tonnes of herbs in the Tskaltubo municipality and its surroundings. Around 70-80 per cent of the herbs produced in the municipality was exported to Russia until the embargo of 2006. Since then, Herbia took the lead and tried to consolidate farmers to export to Europe. However, exporting to Europe did not turn out to be easy as all farmers needed to adopt international certifications. Herbia made an individual effort to help farmers meet international standards; however, the company was not able to solve issues related to a lack of human and financial resources. Instead, Herbia decided to concentrate on the local market where there was no need for international certification and be first to offer packaged herbs and vegetables without pesticides. Currently, Herbia supplies the local market with its own herbs and vegetables as well as consolidates the production of 500 local farmers, all of which is sold under Herbia brand. Herbia supplies those farmers with homogenous herb seeds, advises and instructs them and conducts quality checks to ensure homogenous production. Herbs and vegetables under Herbia brand are sold almost in every supermarket in Tbilisi.

By 2019, a greenhouse zone of 125 hectares is planned to be built in Maghlaki village, the Tskaltubo municipality, where the production of herbs and vegetables would begin. The author of this initiative is the Ministry of Environmental Protection and Agriculture. It aims to stimulate the production of vegetables and greens in the country to be able to diversify export markets. EU and Persian Gulf countries were considered as priority export markets of products. Currently, the future of this project is unclear.

According to the plan, greenhouses were to be built on 80 ha, each greenhouse starting from 2,000 square meters up to 5 hectares. In addition to greenhouses, the complex would include warehousing, processing and other logistics infrastructure.

The state has already allocated 125 hectares of land to develop the zone, and it also plans to cover the costs of fencing, road, water, gas, electricity or wastewater infrastructure. To build greenhouses, farmers would be given land free of charge, and a new special financial component of the project for smallholder farmers would be launched to help them build greenhouses and adopt international certificates to be able to produce homogeneous goods. Moreover, a special terminal was planned to be set up at Kutaisi International Airport to facilitate exports to European and Asian markets.

There are currently seven formal enterprises registered in the Imereti region, six of which are small size enterprises located in Kutaisi (two), the Tskaltubo municipality (one), the Baghdati municipality (one), the Zestaponi municipality (one) and the Samtredia municipality (one). There is also one medium-size enterprise located in the Samtredia municipality. The overall LQ quotient for this sector in the Imereti municipality is 0.98, well below the threshold level of 1.25; however, according to agricultural census of 2014, 64 per cent of the greenhouses are located in Imereti, 78 per cent of them in the Tskaltubo municipality.

Beekeeping: The research team interviewed the founder of Association of Professional Beekeeper. One of the achievements of the association, which was established in 1995, is to advocate for the development of instructions on how to apply insecticides so not to threaten the life of bees. Also, on behalf of the association, the founder from time to time conducts trainings for local beekeepers.

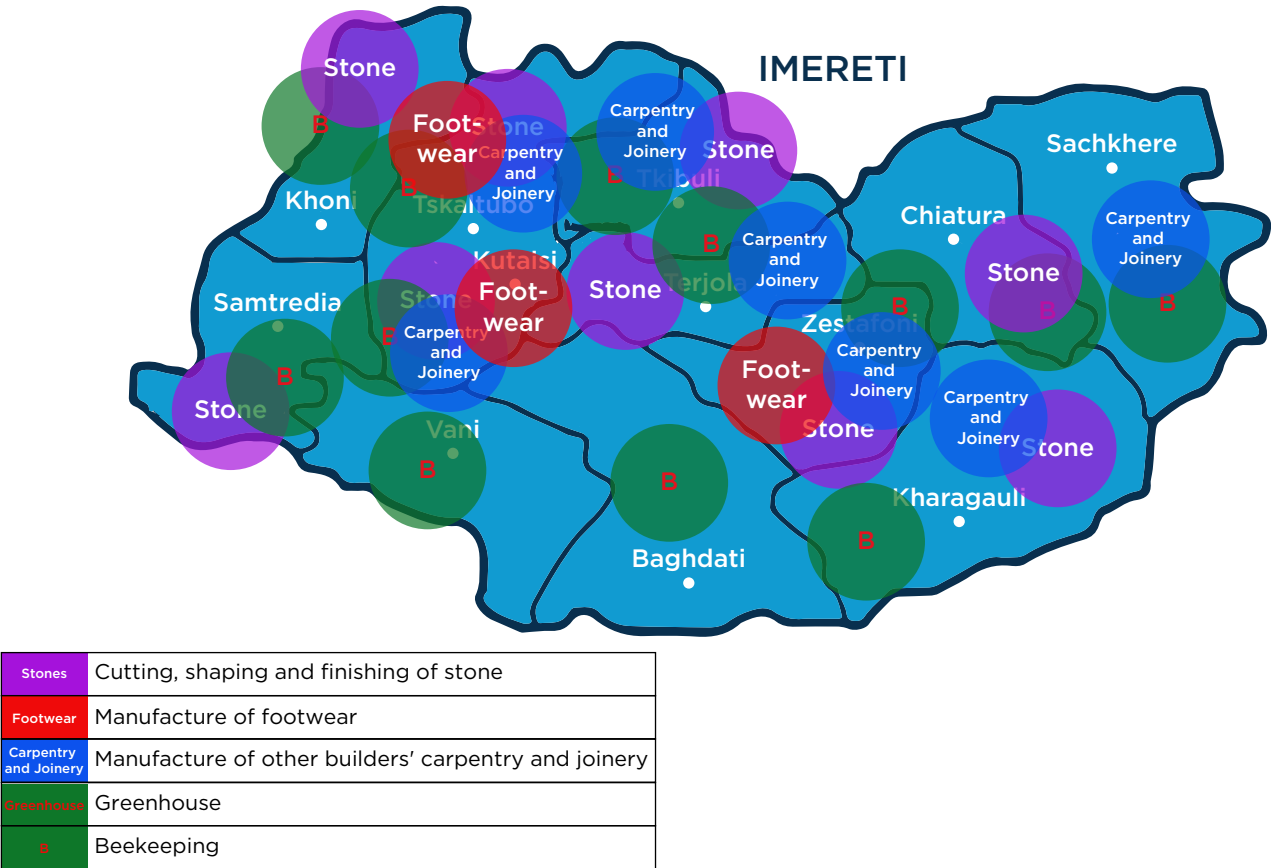
There are two main problems when it comes to exporting honey. Firstly, due to small-scale beekeeping, the amount of homogenous honey is limited. A factory for honey processing was built in Gori recently and aims to go begin operation in the upcoming years. According to the respondent, the founder of Professional Beekeepers Association, the capacity of the factory is low, having 2-3 honey homogenizer mixing machines of only one tonne each, while Europe asks for 10-20 tons of homogenized honey on a monthly basis.

Secondly, some beekeepers use antibiotics to treat their bees. The extensive use of antibiotics leads to an accumulation of antibiotic residues in honey, decreasing its quality. When such honey is mixed with the another, the quality of it also goes down. There is no laboratory in Georgia which can check for the antibiotic residues in honey. Having a laboratory is an essential condition for exporting honey to the European market.

According to the respondent, Georgia has an excessive domestic supply of honey nowadays. Therefore, quite a large amount of it is stored across Georgia. Before (several years ago) the bulk of produced honey was exported to Turkey. This situation now has changed dramatically due to sharp depreciations of the Turkish Lira and protectionist politics undertaken by Turkey. Now, new markets have to be identified and someone has to lead in that.

The respondent is ready to take the lead in finding trading partners abroad (he already has negotiations with partners from Arab countries) and as soon as he is able to do so, he plans to build a honey processing factory of much higher capacity than the one built in Gori. As soon as an export market is set and he has guarantees to sell honey of a certain amount, he will take the risk to invest in the factory. Moreover, the founder of the association plans to train beekeepers from whom he will gather honey, process it and export.

Map 37: Cluster location



Source: UNIDO.

Chapter III: Country level priority cluster selection

3.1 Set of criteria and methodology

The cluster selection matrix is divided into two parts. The first part covers the quantitative indicators and common framework is used to attribute scores to the indicators. Since the matrix is used to assess clusters in relative terms, the grading of the cluster on a scale of one through seven is also done in relative terms. A score of four is assigned to the sector closest to the mean value of the variable in the total sample while the rest of the scores are assigned as below:

- 1-Below 1.5 standard deviation below the mean
- 2-Between 1 and 1.5 standard deviation below the mean
- 3-Between 0.5 and 1 standard deviation below the mean
- 4-Within 0.5 standard deviation around the mean
- 5-Between 0.5 and 1 standard deviation above the mean
- 6-Between 1 and 1.5 standard deviation above the mean
- 7-Above 1.5 standard deviation above the mean

Unless otherwise stated, values for indicators are taken at a nation-wide level under the assumption that if on the nation level the sector is performing well and this sector is also concentrated at a particular geographic location then the nation-wide performance should be a good proxy for the location performance.

Detailed Methodology:

- 1) Pool statistics on all clusters in one dataset.
- 2) Calculate the following statistics for all variables separately: 1st quartile of variable distribution, 3rd quartile of variable distribution, interquartile range.
- 3) Define as an upper limit: 3rd quartile + 1.5 Interquartile range and as a lower limit: 1st quartile-1.5 interquartile range. Treat any observations below and above these limits as outliers.
- 4) Calculate mean and standard deviation of each variable excluding outliers.
- 5) Assign scores 1 through 7 as indicated above including to outliers.

Mean and standard deviation used for each variable is displayed below.

Scales of qualitative indicators, in the second part of the matrix is done individually and is explained below.

I. Export Competitiveness of the sector - Quantitative

This indicator measures sector competitiveness by comparing growth of the exports of Georgia in this sector against growth of the exports in this sector worldwide. Since there is no direct correspondence between HS codes (through which trade is reported) and NACE rev. 2 codes used in this study, the numbers have been approximated by transforming HS codes to SITC 3 codes (correspondence tables available by the World Integrated Trade Solutions) and then to NACE 1 codes, and finally matched with NACE rev 2. codes. More precisely the indicator is calculated as a difference between growth of country exports and growth of world growth export in the particular sector. For approximation, related industry exports are also included.

2. Current Export level per Company - Quantitative

This indicator measures current export level of the sector nation-wide divided by the total number of firms in this sector and is another proxy for sector export competitiveness. The lowest export level sectors are assigned lower scores since export diversification and expansion is also one of the key priorities of current economic policy.

3. Employment - Quantitative

This indicator measures approximate employment level of the sector in a particular region. Sectors that generate more employment are given higher scores due to the high priority of this factor in economic policy making in Georgia.

4. Value-added per employee - Quantitative

This indicator is a proxy for the responsiveness of the sector towards innovation and/or value addition. Sectors that add more value per employee generate more welfare hence higher values are associated with higher scores.

5. Regional competitiveness of the sector (Shift-Share Analysis) - Quantitative

This indicator determines what portions of regional growth or decline in the number of enterprises can be attributed to national, industry, and regional factors. The analysis helps identify sectors where a regional economy has competitive advantages over the larger economy. Growth in the number of enterprises over two periods ($t=2015$ and $t+n=2019$) in a region i is decomposed into three components: national growth effect, sector mix effect and local share effect. The indicator looks at the local share effect

$$e_i^{t+n} - e_i^t = \text{NGE} + \text{IME} + \text{CE}$$
$$\text{NGE (national growth effect)} = e_i^t \left(\frac{E^{t+n}}{E^t} - 1 \right)$$
$$\text{IME (sector mix effect)} = e_i^t \left(\frac{E_i^{t+n}}{E_i^t} - 1 \frac{E^{t+n}}{E^t} \right)$$
$$\text{CE (local share effect)} = e_i^t \left(\frac{e_i^{t+n}}{e_i^t} - 1 \frac{E_i^{t+n}}{E_i^t} \right)$$

6. Number of companies in the cluster. - Quantitative

Number of companies in a cluster compared to total companies in the region. This indicator is measured on a regional level. A high number of companies will get high marks from seven (high) to one (low).

7. Environmental impact - Quantitative

This indicator measures sector's environmental impact through greenhouse gas emission (CO₂, N₂O in CO₂ equivalent, CH₄ in CO₂ equivalent). However, at the NACE Rev. 2 activity level this indicator is not available for Georgia; therefore, it is proxied by average greenhouse emissions in the EU 28 countries. Lower values will correspond to higher scores.

8. Competitive advantage nationally- Qualitative

This indicator assesses whether the cluster possess any competitive edge (like raw material resources or unique technology, or special skills of human resources, etc.) that provides the cluster some kind of advantage.

- 7 – Has unique raw material resources, technology or special skills world-wide which cannot be replicated in the short-run.
- 6 – Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short-run.
- 5 – Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run.
- 4 – Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run
- 3 – Has unique raw materials resources, technology or special skills but is exhaustive in the short run.
- 2 – Has a potential for unique raw materials resources, technology or special skills but needs significant investment.
- 1 – Does not have any unique raw materials resources, technology or special skills.

9. Investment capacity and willingness - Qualitative

- 7 – Cluster members have a history of past successful cooperation and are willing to scale up their cooperation.
- 6 – Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation.
- 5 – Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation.
- 4 – Cluster members have not cooperated before but are willing to invest in cooperation.
- 3 – Cluster members have not cooperated before and are skeptical about cooperation.
- 2 – Cluster members have not cooperated before and are not willing to cooperate.
- 1 – Cluster members have a history of past failed cooperation and they are not willing to cooperate.

10. Any structure existing to support functioning of the cluster - Qualitative

- 7 – Powerful business support institutions exist that have a history of successful advocacy and cooperation campaigns.
- 6 – Powerful business association exists but the rest of the structure is relatively weak.
- 5 – Number of sustainable business support institutions are available.
- 4 – There are a number of business support institutions but lack sustainability.
- 3 – No business support institutions exist but there is a concrete plan to develop one.
- 2 – No business support institutions exist but there is an interest to have one.
- 1 – No structure exists to support functioning and there is no interest to have one.

Table 182: Set of criteria, assigned weights and descriptive statistics

Criteria	Mean	Standard Deviation	weight %
Export competitiveness	0.55	1.2	10
Current export value per firm	435	503	10
Total number of employment	105	88	20
Value added per employee	23192	13156	10
Regional competitiveness of the sector (Shift-Share Analysis)	0.12	0.23	15
Number of companies	44	46	5
Environmental impact of the sector	0.001	0.001	5
Competitive advantage Nationally	3.6	2.0	5
Investment capacity and willingness	4.6	1.4	10
Any structure existing to support functioning of the cluster	3.6	1.8	10
TOTAL			100

3.2 Raw values of indicators on a cluster level

Indicator statistics of the shortlisted potential clusters in Georgia is given in the tables below.

Table 183: Indicator statistics of the shortlisted sectors in Tbilisi

NACE	14	21	32.40	17	32,12; 32,13;	31	22
Criteria/Cluster	Apparel	Pharmac- eutical	Toys	Paper	Jewelry	Furniture	Plastic Products
EXPORT COMPETITIVENESS	32%	152%	234%	-46%	189%	-3%	95%
CURRENT EXPORT VALUE (THOUSANDS USD)	15	142	2	3	1	6	8275
TOTAL NUMBER OF EMPLOYMENT	3417	1841	61	1012	323	3084	1636
VALUE ADDED PER EMPLOYEE (IN GEL)	8587	47770	10879	30217	10879	7819	18860
SHIFT-SHARE	23%	4%	47%	11%	14%	14%	17%
NUMBER OF COMPANIES	372	75	22	84	59	59	361
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	318	174	251	1531	251	171	7381
COMPETITIVE ADVANTAGE NATIONALLY	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	7 Has unique raw material resources, technology or special skills world-wide which cannot be replicated in the short run.	1 Does not have any unique raw materials resources, technology or special skills	1 Does not have any unique raw materials resources, technology or special skills	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short run.	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	1 Does not have any unique raw materials resources, technology or special skills
INVESTMENT CAPACITY AND WILLINGNESS	4 Cluster members have not cooperated before but are willing to invest in cooperation	7 Cluster members have a history of past successful cooperation and are willing to scale up their cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	4 Cluster members have not cooperated before but are willing to invest in cooperation	7 Cluster members have a history of past successful cooperation and are willing to scale up their cooperation	1 Cluster members have a history of past failed cooperation and they are not willing to cooperate
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	5 Number of sustainable business support institutions are available	7 Powerful business support institutions exist that have a history of successful advocacy and cooperation campaigns	6 Powerful business association exists but the rest of the structure is relatively weak	4 There are number of business support institutions but lack sustainability	2 No business support institutions exist but there is an interest to have one	7 Powerful business support institutions exist that have a history of successful advocacy and cooperation campaigns	1 No structure exists to support functioning and there is no interest to have one

Source: UNIDO

Table 184: Indicator statistics of the shortlisted clusters in Kakheti

NACE	11.02	01.24	01.24
Criteria/Cluster	Beverages (wine)	Perennial crops (nuts)	Perennial crops (peaches)
EXPORT COMPETITIVENESS	46%	-71%	678%
CURRENT EXPORT VALUE (THOUSANDS USD)	74198	5747	607
TOTAL NUMBER OF EMPLOYMENT	3285	19	5
VALUE ADDED PER EMPLOYEE (IN GEL)	48867	8689	8689
SHIFT-SHARE	24%	56%	56%
NUMBER OF COMPANIES	162	8	8
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	2000	18186	18186
COMPETITIVE ADVANTAGE NATIONALLY	7 Has unique raw material resources, technology or special skills world-wide which cannot be replicated in the short-run	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run
INVESTMENT CAPACITY AND WILLINGNESS	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	4 Cluster members have not cooperated before but are willing to invest in cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	7 Powerful business support institutions exist that have a history of successful advocacy and cooperation campaigns	3 Cluster members have not cooperated before and are skeptical about cooperation	2 No business support institutions exist but there is an interest to have one

Source: UNIDO

Table 185: Indicator statistics of the shortlisted clusters in Kvemo Kartli

NACE	23.70	01.47; 10.12	11.02
Criteria/Cluster	Stone processing	Poultry	Beverages (wine)
EXPORT COMPETITIVENESS	-20%	981%	46%
CURRENT EXPORT VALUE (THOUSANDS USD)	85	10323	5496
TOTAL NUMBER OF EMPLOYMENT	185	277	34
VALUE ADDED PER EMPLOYEE (IN GEL)	12797	19209	48867
SHIFT-SHARE	2%	7%	4%
NUMBER OF COMPANIES	64	155	12
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	7381	18186	2000
COMPETITIVE ADVANTAGE NATIONALLY	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run.	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	7 Has unique raw material resources, technology or special skills world-wide which cannot be replicated in the short-run
INVESTMENT CAPACITY AND WILLINGNESS	4 Cluster members have not cooperated before but are willing to invest in cooperation	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation	7 Cluster members have a history of past successful cooperation and are willing to scale up their cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	2 No business support institutions exist but there is an interest to have one	6 Powerful business association exists but the rest of the structure is relatively weak	6 Powerful business association exists but the rest of the structure is relatively weak

Source: UNIDO

Table 186: Indicator statistics of the shortlisted clusters in Samtskhe-Javakheti

NACE	01.13, 10.31	01.41, 10.51	03.22	11.07	16.10	16.23	22.23	23.70
Criteria/Cluster	Potato	Dairy	Fish	Manufacture of soft drinks; production of mineral waters and other bottled waters	Sawmilling and planing of wood	Manufacture of other builders' carpentry and joinery	Manufacture of builders' ware of plastic	Cutting, shaping and finishing of stone
EXPORT COMPETITIVENESS	38%	-39%	0	-12%	13%	280%	19%	-20%
CURRENT EXPORT VALUE (THOUSANDS USD)	504	4637	0	12258	2017	61	20	15
TOTAL NUMBER OF EMPLOYMENT	25	72	32	628	160	29	93	35
VALUE ADDED PER EMPLOYEE (IN GEL)	14933	25099	38776	91081	16278	26347	12925	13375
SHIFT-SHARE	-87%	-13%	37%	0%	-4%	16%	-27%	-2%
NUMBER OF COMPANIES	9	27	12	13	25	11	35	13
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	18,186	18,186	271	2000	1531	1531	398	2844
COMPETITIVE ADVANTAGE NATIONALLY	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short-run	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	1 Does not have any unique raw materials resources, technology or special skills	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run
INVESTMENT CAPACITY AND WILLINGNESS	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	6 Powerful business association exists but the rest of the structure is relatively weak	4 There are a number of business support institutions but lack sustainability	4 There are a number of business support institutions but lack sustainability	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one

Source: UNIDO

Table 187: Indicator statistics of the shortlisted clusters in Guria

NACE	01.25	08.12	10.39	10.71	10.83	22.23
Criteria/Cluster	Nuts	Operation of gravel and sand pits; mining of clays and kaolin	Other processing and preserving of fruit and vegetables	Manufacture of bread; manufacture of fresh pastry goods and cakes	Processing of tea and coffee	Manufacture of builders' ware of plastic
EXPORT COMPETITIVENESS	-71%	-66%	160%	-12%	61%	19%
CURRENT EXPORT VALUE (THOUSANDS USD)	1259	52	2462	45	379	21
TOTAL NUMBER OF EMPLOYMENT	7	159	148	411	29	82
VALUE ADDED PER EMPLOYEE (IN GEL)	9951	26962	18052	9456	13263	12925
SHIFT-SHARE	-31%	13%	26%	-1%	-3%	-17%
NUMBER OF COMPANIES	3	25	20	67	13	37
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	18186	7184	18186	18186	18186	398
COMPETITIVE ADVANTAGE NATIONALLY	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short-run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	1 Does not have any unique raw materials resources, technology or special skills	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short-run	1 Does not have any unique raw materials resources, technology or special skills
INVESTMENT CAPACITY AND WILLINGNESS	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	6 Powerful business association exists but the rest of the structure is relatively weak	3 No business support institutions exist but there is a concrete plan to develop one	3 No business support institutions exist but there is a concrete plan to develop one	3 No business support institutions exist but there is a concrete plan to develop one	6 Powerful business association exists but the rest of the structure is relatively weak	3 No business support institutions exist but there is a concrete plan to develop one

Source: UNIDO

Table 188: Indicator statistics of the shortlisted clusters in Samegrelo-Zemo Svaneti

NACE	01.25	10.83	01.13	03.11	10.39	10.84	16.10
Criteria/Cluster	Nuts	Tea	Greenhouse (tomato, cucumber, salads)	Marine fishing	Other processing and preserving of fruit and vegetables	Manufacture of condiments and seasonings	Sawmilling and planking of wood
EXPORT COMPETITIVENESS	-71%	61%	521%	81%	160%	-13%	13%
CURRENT EXPORT VALUE (THOUSANDS USD)	7902	204	256	36006	13789	1527	2259
TOTAL NUMBER OF EMPLOYMENT	98	88	11	187	503	104	143
VALUE ADDED PER EMPLOYEE (IN GEL)	9951	13263	9691	38776	18052	11665	16278
SHIFT-SHARE	-90%	53%	55%	-3%	-17%	27%	16%
NUMBER OF COMPANIES	11	7	4	71	112	13	28
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	18186	18186	18186	272	18186	1 186	1 531
COMPETITIVE ADVANTAGE NATIONALLY	6 Has unique raw materials resources, technology or special skills world-wide which can be replicated in the short-run	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run	4 Has unique raw materials resources, technology or special skills nation-wide but can be replicated in the short run
INVESTMENT CAPACITY AND WILLINGNESS	7 Cluster members have a history of past successful cooperation and are willing to scale up their cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	4 Cluster members have not cooperated before but are willing to invest in cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	4 Cluster members have not cooperated before but are willing to invest in cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	7 Powerful business support institutions exist that have a history of successful advocacy and cooperation campaigns	4 There are a number of business support institutions but lack sustainability	1 No structure exists to support functioning and there is no interest to have one	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one

Source: UNIDO

Table 189: Indicator statistics of the shortlisted clusters in Racha-Lechkhumi and Kvemo Svaneti

NACE	01.21;11.02	16.10
Criteria/Cluster	Wine	Sawmilling and planking of wood
EXPORT COMPETITIVENESS	46%	13%
CURRENT EXPORT VALUE (THOUSANDS USD)	5040	2259
TOTAL NUMBER OF EMPLOYMENT	71	39
VALUE ADDED PER EMPLOYEE (IN GEL)	16.10	16278
SHIFT-SHARE	77%	-6%
NUMBER OF COMPANIES	13	13
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	2000	1531
COMPETITIVE ADVANTAGE NATIONALLY	7 Has unique raw material resources, technology or special skills world-wide which cannot be replicated in the short-run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run
INVESTMENT CAPACITY AND WILLINGNESS	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	5 Number of sustainable business support institutions are available	3 No business support institutions exist but there is a concrete plan to develop one

Source: UNIDO

Table 190: Indicator statistics of the shortlisted clusters in Adjara AR

NACE	25.12	23.70	23.63	22.23	14.13	10.83
Criteria/Cluster	Manufacture of doors and windows of metal	Cutting, shaping and finishing of stone	Manufacture of ready-mixed concrete	Manufacture of builders' ware of plastic	Manufacture of other outerwear	Processing of tea and coffee
EXPORT COMPETITIVENESS	458%	-20%	-81%	19%	74%	61%
CURRENT EXPORT VALUE (THOUSANDS USD)	840	52	125	71	3	932
TOTAL NUMBER OF EMPLOYMENT	163	138	572	380	2670	100
VALUE ADDED PER EMPLOYEE (IN GEL)	20289	13375	32979	12925	9624	13263
SHIFT-SHARE	0%	67%	-1%	13%	24%	16%
NUMBER OF COMPANIES	22	45	24	1124	34	32
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	30229	2844	30229	398	318	18186
COMPETITIVE ADVANTAGE NATIONALLY	1 Does not have any unique raw materials resources, technology or special skills	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	1 Does not have any unique raw materials resources, technology or special skills	1 Does not have any unique raw materials resources, technology or special skills	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run
INVESTMENT CAPACITY AND WILLINGNESS	2 Cluster members have not cooperated before and are not willing to cooperate	2 Cluster members have not cooperated before and are not willing to cooperate	2 Cluster members have not cooperated before and are not willing to cooperate	2 Cluster members have not cooperated before and are not willing to cooperate	2 Cluster members have not cooperated before and are not willing to cooperate	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	3 No business support institutions exist but there is a concrete plan to develop one

Source: UNIDO

Table 191: Indicator statistics of the shortlisted clusters in Imereti

NACE	23.70	15.20	16.23	1.13	1.49
Criteria/Cluster	Stone Processing	Footwear	Carpentry	Growing of Vegetables	Raising of other animals
EXPORT COMPETITIVENESS	-15.40%	-43.6%	280.4%	22.7%	-40%
CURRENT EXPORT VALUE (THOUSANDS USD)	94.0	763.6	206.5	1318.4	12.0
TOTAL NUMBER OF EMPLOYMENT	180	95	160	97	25
VALUE ADDED PER EMPLOYEE (IN GEL)	13375	7713	26347	9691	22876
SHIFT-SHARE	-14%	-4%	-15%	90%	43%
NUMBER OF COMPANIES	85	45	37	7	12
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	7184	318	1530	18186	18186
COMPETITIVE ADVANTAGE NATIONALLY	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run	1 Does not have any unique raw materials resources, technology or special skills	1 Does not have any unique raw materials resources, technology or special skills	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run
INVESTMENT CAPACITY AND WILLINGNESS	4 Cluster members have not cooperated before but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	2 Cluster members have not cooperated before and are not willing to cooperate	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one	2 No business support institutions exist but there is an interest to have one	5 Number of sustainable business support institutions are available

Source: UNIDO

Table 192: Indicator statistics of the shortlisted clusters in Shida Kartli

NACE	22.23	03.22	10.11	01.13	10.39	11.02
Criteria/Cluster	Plastic	Aquaculture	Meat Processing	Vegetable Growing	Fruit Processing	Manufacture of wine from grape
EXPORT COMPETITIVENESS	18.6%	28%	2805.6%	22.7%	384.3%	54%
CURRENT EXPORT VALUE (THOUSANDS USD)	34.3	656.1	9641.9	1695.1	769.0	8244.3
TOTAL NUMBER OF EMPLOYMENT	146	34	34	109	106	45
VALUE ADDED PER EMPLOYEE (IN GEL)	12925	38776	32968	9691	18052	44059
SHIFT-SHARE	26%	3%	-6%	53%	-1%	-15%
NUMBER OF COMPANIES	60	14	14	9	8	18
ENVIRONMENTAL IMPACT (THOUSAND TONNE)	7581	271	2000	18186	2000	2000
COMPETITIVE ADVANTAGE NATIONALLY	1 Does not have any unique raw materials resources, technology or special skills	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	1 Does not have any unique raw materials resources, technology or special skills	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	3 Has unique raw materials resources, technology or special skills but is exhaustive in the short run	5 Has unique raw materials resources, technology or special skills nation-wide which cannot be replicated in the short run
INVESTMENT CAPACITY AND WILLINGNESS	3 Cluster members have not cooperated before and are skeptical about cooperation	4 Cluster members have not cooperated before but are willing to invest in cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	3 Cluster members have not cooperated before and are skeptical about cooperation	5 Cluster members have tried to cooperate however it did not go through but are willing to invest in cooperation	6 Cluster members have a history of minimal successful cooperation but are willing to invest in cooperation
ANY STRUCTURE EXISTING TO SUPPORT FUNCTIONING OF THE CLUSTER	1 No structure exists to support functioning and there is no interest to have one	3 No business support institutions exist but there is a concrete plan to develop one	1 No structure exists to support functioning and there is no interest to have one	1 No structure exists to support functioning and there is no interest to have one	3 No business support institutions exist but there is a concrete plan to develop one	5 Number of sustainable business support institutions are available

Source: UNIDO

Detailed notes

Statistics of value added at the four-digit level were not available for all groups and clusters identified. Therefore, in such cases, value added and employment statistics of broadly defined sectors (one level up) was used to come up with the value for "Value added per employee" indicator.

Value added statistics of toy manufacturing (32.40) sector in Georgia is not available on the four-digit level. Therefore, the broader sector of other manufacturing (32) was used for the calculation, which also includes other sectors of manufacturing (e.g. jewelry, musical instruments, medical instruments).

Value added statistics of jewelry manufacturing (32.12; 32.13) sector in Georgia are not available on the four-digit level. Therefore, the broader sector of other manufacturing (32) was used for the calculation, which also includes other sectors of manufacturing (e.g. toys, musical instruments, medical instruments).

Value added statistics of wine manufacturing (11.02) sector in Georgia are not available on the four-digit level. Therefore, the broader sector of beverage manufacturing (11) was used for the calculation, which also includes other types of beverages (e.g. beer, mineral water).

Value added statistics of poultry growing and poultry meat manufacturing (01.47; 10.12) sectors in Georgia are not available on the four-digit level. Therefore, the broader sector of growing of animal production (01.4) and processing and preserving of meat and production of meat products (10.1) were used for the calculation (which also includes other types of animals e.g. poultry, cattle, goats, horses).

Value added statistics of wine manufacturing (11.02) sector in Georgia are not available on the four-digit level. Therefore, the broader sector of beverage manufacturing (11) was used for the calculation, which also includes other types of beverages (e.g. beer, mineral water).

Value added statistics of nut growing (01.25) sector in Georgia is not available on the four-digit level. Therefore, broader sector of growing of perennial crops (01.2) was used for the calculation, which also includes other types of crops (e.g. grapes, tropical and citrus fruits, spices).

Value added statistics of citrus growing (01.23) sector in Georgia is not available on the four-digit level. Therefore, the broader sector of the growing of Perennial Crops (01.2) was used for the calculation, which also includes other types of crops (e.g. grapes, tropical and citrus fruits, spices).

Value added statistics of meat production (01.42) sector in Georgia are not available on the four-digit level. Therefore, the broader sector of the growing of animal Production (01.4) was used for the calculation, which also includes other types of animals (e.g. poultry, cattle, goats, horses).

Value added statistics of cattle rowing and meat manufacturing (01.42; 10.11, 10.13) sectors in Georgia are not available on the four-digit level. Therefore, the broader sector of growing of animal production (01.4) and processing and preserving of meat and production of meat products (10.1) were used for the calculation (which also includes other types of animals e.g. poultry, cattle, goats, horses).

Value added statistics of dairy cattle rowing and dairy product manufacturing (01.41; 10.51) sectors in Georgia are not available on the four-digit level. Therefore, broader sector of Growing of Animal Production (01.4) and Processing of dairy products (10.5) were used for the calculation.

Value added statistics of potato, tomato, cucumber and salads rowing (01.13.) sectors in Georgia are not available on the four-digit level. Therefore, broader sector of cultivation of annual crops (01.1) were used for the calculation.

3.3 Cluster selection matrix

Table 193: Shortlisted cluster selection matrix

Cluster selection	Export compet.	Current exp. value per firm	Total number of empl.	Value added per employee	Regional compet. of the sector (Shift-Share Analysis)	Number of companies	Env. impact of the sector	Compet. advantage Nationally	Invest. capacity and willingness	Any structure existing to support functioning of the cluste	TOTAL
Beverages (Wine) (Kakheti)	4	7	7	7	5	7	5	7	6	7	6.20
Pharmaceutical (Tbilisi)	6	3	7	7	4	7	7	7	7	7	6.05
Poultry (Kvemo-Kartli)	7	7	5	4	4	7	5	4	5	6	5.20
Beverages (Wine) (Racha Lechkhumi-Kvemo Svaneti)	4	7	4	6	7	13	5	7	3	5	5.20
Furniture (Tbilisi)	4	3	7	2	5	7	7	3	7	7	5.10
Beverages (Wine) (Kvemo-Kartli)	4	7	3	7	4	3	5	7	7	6	5.10
Jewelry (Tbilisi)	7	3	6	3	4	5	7	6	4	2	4.80
Marine fishing (Samegrelo-Zemo Svaneti)	4	7	4	7	3	6	7	5	4	4	4.80
Apparel (Tbilisi)	4	3	7	3	4	7	7	4	4	5	4.75
Other processing and preserving of fruit and vegetables (Samegrelo-Zemo Svaneti)	6	7	7	4	2	7	3	4	3	3	4.75
Manufacture of soft drinks; production of mineral waters and other bottled waters (Samtskhe-Javakheti)	3	7	7	7	4	3	5	3	3	1	4.75
Paper (Tbilisi)	3	3	7	5	4	7	7	1	6	4	4.70
Perennial crops - Nuts (Kakheti)	1	7	3	3	7	3	3	6	6	3	4.50
Fish (Samtskhe-Javakheti)	4	3	3	7	6	3	7	3	6	4	4.50
Manufacture of wine from grape (Shida Kartli)	4	7	3	7	2	4	5	5	6	5	4.50
Growing of Vegetables (Imereti)	4	4	4	3	7	3	3	5	6	2	4.45
Toys (Tbilisi)	7	3	3	3	6	4	7	1	6	6	4.35
Plastic products(Tbilisi)	5	7	7	4	4	7	3	1	1	1	4.35
Tea (Samegrelo-Zemo Svaneti)	4	4	4	3	7	3	3	5	3	3	4.20
Greenhouse (tomato, cucumber, salads) (Samegrelo-Zemo Svaneti)	7	4	4	3	7	3	3	4	3	3	4.20
Raising of other animals (Imereti)	3	3	3	4	6	3	3	5	6	5	4.15
Other processing and preserving of fruit and vegetables (Guria)	6	5	4	4	5	4	3	3	3	3	4.15
Other processing and preserving of fruit and vegetables (Shida Kartli)	7	4	4	4	3	3	5	3	5	3	4.10
Perennial crops - Peaches(Kakheti)	7	4	3	3	7	2	3	3	4	2	4.10
Nuts (Samegrelo-Zemo Svaneti)	2	7	4	3	1	3	3	6	7	7	4.10

Manufacture of bread; manufacture of fresh pastry goods and cakes (Guria)	6	3	7	3	3	6	3	1	3	3	4.05
Manufacture of builders' ware of plastic (Adjara)	4	3	7	3	4	7	7	1	2	1	4.05
Manufacture of other outerwear (Adjara)	4	3	7	3	5	4	7	1	2	1	4.05
Processing of tea and coffee (Adjara)	4	4	4	3	4	4	3	5	5	3	4.00
Freshwater aquaculture (Shida Kartli)	3	4	3	7	4	3	7	3	4	3	3.95
Sawmilling and planking of wood (Samegrelo-Zemo Svaneti)	4	5	4	4	2	4	7	4	4	4	3.95
Dairy (Samtskhe-Javakheti)	3	7	4	4	2	4	3	4	5	4	3.95
Processing and preserving of meat (Shida Kartli)	7	7	3	6	3	3	5	1	3	1	3.90
Growing of vegetables and melons, roots and tubers (Shida Kartli)	4	4	4	3	7	3	3	3	3	1	3.90
Processing of tea and coffee (Guria)	4	4	3	3	3	3	3	6	5	6	3.85
Manufacture of ready-mixed concrete (Adjara)	2	3	7	6	3	4	3	3	2	1	3.85
Manufacture of other builders' carpentry and joinery (Samtskhe-Javakheti)	7	3	3	5	4	3	7	3	3	1	3.85
Stone Processing (Kvemo-Kartli)	3	3	4	3	3	6	3	5	4	2	3.75
Potato (Samtskhe-Javakheti)	4	4	3	4	1	3	3	6	6	6	3.75
Sawmilling and planking of wood (Samtskhe-Javakheti)	4	4	4	4	3	4	7	3	3	1	3.75
Cutting, shaping and finishing of stone (Adjara)	3	3	4	3	7	4	4	3	2	1	3.70
Manufacture of condiments and seasonings (Samegrelo-Zemo Svaneti)	3	3	4	4	5	3	3	4	3	3	3.70
Manufacture of other builders' carpentry and joinery(Imereti)	7	4	4	5	2	4	7	1	2	2	3.65
Manufacture of doors and windows of metal (Adjara)	7	4	4	4	4	4	3	1	2	1	3.60
Cutting, shaping and finishing of stone(Imereti)	3	3	4	4	2	7	4	5	4	2	3.55
Operation of gravel and sand pits; mining of clays and kaolin (Guria)	2	3	4	5	4	4	4	3	3	3	3.55
Manufacture of footwear (Imereti)	3	4	4	2	3	4	7	1	6	2	3.50
Sawmilling and planking of wood (Racha Lechkhumi-Kvemo Svaneti)	7	4	3	4	3	3	7	3	3	3	3.50
Manufacture of builders' ware of plastic (Shida Kartli)	4	3	4	3	5	5	3	1	3	1	3.40
Nuts (Guria)	2	4	3	3	1	3	3	6	5	6	3.35
Manufacture of builders ware of plastic (Guria)	4	3	4	3	2	4	7	1	3	3	3.20
Manufacture of builders' ware of plastic (Samtskhe-Javakheti)	4	3	4	3	1	4	7	1	3	1	2.95
Cutting, shaping and finishing of stone (Samtskhe-Javakheti)	3	3	3	3	3	3	4	3	3	1	2.95

Source:UNIDO.

Annex I – List of interviewed key informants

Name	Position	Organization
Levan Davitashvili	Minister	Ministry of Environmental Protection and Agriculture
Tornike Zirakishvili	Deputy Director	Enterprise Georgia
Nika Mamukelashvili	Deputy Head of Export Department	Enterprise Georgia
Nia Razmadze	Junior Coordinator, International Relations Office	Enterprise Georgia
Andria Basilaia	Head of Economic Development Service	Tbilisi City Hall
Lile Meskhi	Senior Specialist of Economic Development Service	Tbilisi City Hall
Gogi Abashidze	Urbanist	City Institute
Mamuka Salukvadze	Director	City Institute
Zviad Archuadze	Program Coordinator in Georgia and Azerbaijan	EU Initiative – Mayors for Economic Growth
Rati Anjaparidze	Advisor	GLZ, Private Sector Development South Caucasus / Georgia SME Development and DCFTA in Georgia
Levan Zhvania	Head of Service	Administration of State Representative in Kvemo Kartli
Giorgi Demurashvili	Local Representative	Bolnisi Branch of Information and Consultation Center
Ilia Jangulashvili	Representative in Kvemo Kartli	Georgian Chamber of Commerce and Industry
David Darsavelidze	Partner/Researcher	Know-How Training Center
David Lee	Director	European Business Association
Rati Golijashvili	Partner, Head of Business Development	Biochimpharm
Mamuka Khoshtaria	Director	Georgian Furniture Association
Natia Tatishvili	Head of the Regional Projects Coordination Department	Administration of State Representative in Kakheti Region
Zura Sadatierashvili	Deputy Director	“RAS” LLC
Egizar Agajanian	Chairman	Cooperative “5 Stars”
Velikhan Keropian	Manager	S.E Khachatur Keropian
Makhare Matsukatov	Chairman	Association “Akhalkalaki Potatos”
Ramaz Gogoladze	Chief Specialist	Informational Consultation Center
Suren Muradian	Manager	Cooperative “Agrogrand”

Name	Position	Organization
Arshak Gogorian	Director	Cooperative “Haik”
Maksim Gyloian	Chairman	Cooperative “Mziuri Javakheti”
Rezo Kachkachishvili	Director	“Tsipora Samtske” LLC
Jambul Kamashidze	Farmer	Dairy farmer
Karen Simonian	Owner/Manager	S.E. Karen Simonian
Rafael Karoian	Owner/Manager	S.E. Rafael Karoian
Apetnak Zardanian	Chairman	Cooperative “Sulgumo 2010”
Eduard Aleksanian	Owner/Manager	S.E. Eduard Aleksanian
Tristan Tsikelashvili	Manager	“Meskheta product” LLC
Giorgi Goderdzishvili	Manager	“Akhaltseke Agro food” LLC
Nikoloz Beridze	Manager	“Georgian Meat Company” LLC
Tamaz Natenadze	Owner/Manager	S.E. Tamaz Natenadze
Soso Tetvadze	Owner/Manager	S.E. Merab Magradze
Artur Khachatrian	Owner/Manager	S.E. Marshall
Iura Khachatrian	Owner/Manager	S.E. Kaklakh
Ashot Khachatrian	Owner/Manager	S.E. Vladimir
Samvel Gabrelian	Owner/Manager	S.E. Chilibon
Arshak Tarlazier	Owner/Manager	S.E. Arshak Tarlazier
Marklent Saharian	Director	“Zresi” LLC
Zaza Mameshvili	Business Consultant	Ozurgeti Agro Business Center
Akeko Mameshvili	Head of Economic Department	Ozurgeti Majors Office
Tea Kupradze	Head of Center	Informational Consultation Center
Akaki Ghlonti	Senior Specialist	Informational Consultation Center
Davit Vashakmadze	Farmer	Citrus producer
Vazha Patarava	Farmer	Citrus and berries producer
Natia Koridze	Manager	“Global Export” Ltd. Hazelnut processing

Name	Position	Organization
Tornike Darchia	Manager/Owner	“Tole” Ltd Hazelnut processing
Zurab Bigvava –	Executive director	“Georgian Tea Producers’ Association”
Giorgi Khuchua	Director	“Anaseuli Experimental Tea Factory”
Merab Chitanava	Director	Agro-Georgia Ltd
Goga Todua	Chairman	Georgian Hazelnut Growers Association (GHGA)
Ia Ebralidze	Project Manager	ELKANA office in Zugdidi
Nana Pipia	Chairwoman	“Association for Development of Fruit and Berries Crops”
Yana Emukhvari	Senior Specialist	Informational Consultation Center
Ia Ebralidze	Project Manager	Association ELKANA office in Zugdidi
Goga Todua	Chairman	Georgian Hazelnut Growers Association (GHGA)
Merab Chitanava	Director	“Agro-Georgia Ltd “
Orat Absandze	Chairman	Zugdidi Business Support Center
Mariam Kobalia	Manager/Owner	Greenhouse
Ali Kizildag	Director	ANKA Fair trade LTD
Ana Kanteladze	Head of the Center	Regional Information Consultation Center
Giorgi Beruchashvili	Leading Specialist	Information Consultation Center
Gocha Dzeladze	Financial Director	“Geo Flower” Ltd
Lasha Gagoshidze	Director	Cooperative “Rachis Naturaluri Productebi” Apiculture
Ilia Kenchadze	Owner/Director	“Iliaseuli” Winery
Tamaz Omanidze	Director	“Khomlis Marani” Ltd - Winery
Zurab Gagnidze	Chairman	Cooperative Racha 2014 -Apiculture
Inga Metrevel	Chairwoman	Cooperative “Velispiri” - Apiculture
Tariel Gobejishvili	Chairman	Cooperative “Kedi” - Apiculture
Besik Maisuradze	Manager	Cooperative “Kvedrula 2018” Livestock and Meat
Nikoloz Kavlashvili	Chairman	Cooperative “Bajikhevi” Livestock and Meat
Imeda Meshvildishvili	Manager	“Blaunstein Georgia” Ltd

Name	Position	Organization
Jimsher Diasamidze	Head of the Rural Sectorial Development Department	Ministry of Agriculture of Adjara AR
Roland Gogoberidze	Agriculture Specialist	Reg. Information Consultation Center
David Shavadze	Chairman	Didachara Rural Service Center
Sophiko Diasamidze	Chairwomen	Aquaculture Association "FOREJI"
Manana Bolkvadze	Chairwoman	"Business Association of Beekeepers"
Tengiz Malakmadze	Chairman	Cooperative "Naturgift"
Revaz Gogitidze	Chairman	Cooperative "Akavreta 2016"
Nikoloz Mosidze	Chairman	Cooperative "Goderdzi 2008"
Gia Dzirkvadze	Chairman	Dioknisi Rural Service Center
Mariam Tatalashvili	Regional Representative	Georgian Chamber of Commerce, Shida Kartli
Emzar Ghvinianidze	Regional Representative	Georgian Chamber of Commerce, Imereti
Dimitri Tsverava	Executive Director	Company "Umali"
Zurab Janelidze	Founder	Company "Herbia"
Berika Maglaperidze	Sales and Marketing Director	Company "Levanto"
Iuza Gigashvili	Representative	Association of Professional Beekeepers of Georgia
Giorgi Meparishvili	Director	Company "Gazko"
Vato Demurishvili	Director	Company "Chikori"
Giorgi Dididze	Founder	Company "Cortex"
Teona Babunashvili	Programme Manager	Enterprise Georgia
Giorgi Mikaia	Founder	Company "Crosty"
Giorgi Jokhadze	Founder	Logistics & Transportation Company
Giorgi Abashidze	Founder	Company "BPC"

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