

Hidden Geographies of the Sixteenth Century Road Network and Trade in Georgia's Portion of the Silk Road



Roman Maisuradze and Tamar Khardziani

Abstract Over time, landscape elements are being transformed by natural, cultural and socio-political processes. There are occasions when important geographic events and objects become hidden, or traces of their existence become extinct. Often, the history of the landscape is hidden and can be revived based on historical sources, folk narratives and physical remains. The present paper deals with the sixteenth-century road network and import–export of goods in the Samtskhe-Javakheti region. The Ottoman census materials known as the Great Defter of Gurjistan Vilayet is the primary source of the research. In the Samtskhe-Javakheti region (Georgia), in the study period, the structure and function of the road network was different from today. Locally produced exports, as well as roads connecting settlements in each historic administrative unit, are described in the paper. The chapter tells about difficulties associated with travel, as well as the flows and main directions of imported and exported goods and the connection centres. The study shows the state of the mediaeval road network and trade patterns in this section of the South Caucasus Corridor.

Keywords Mediaeval road network · Import–export · Landscape · Historical geographic information system (HGIS) · Silk Road · Samtskhe-Javakheti · Georgia

1 Introduction

The work deals with the hidden elements of the landscape that played an important economic and cultural role several centuries ago. Because of political and socio-economic changes, the significance of some geographical objects or events has declined or disappeared over time. Road network and trade-economic relations are

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the phenomena that are transformed by socio-political changes. Road network is a vital geographical object and a prerequisite for societal development. It determines the economic, social and cultural development of the regions that drive product circulation and human involvement in public activity locally and internationally. A road is a unit that for centuries and millennia has shaped the interdependence of the local environment and distant territories. Its role has not diminished to this day (Jacobson 1940). New roads often repeat the directions of ancient walking paths and ways, but some have changed considerably. Road directions and their socio-political importance change significantly throughout history, thus the remnants of old roads could retain the information accumulated over millennia (Vion 1989; Watteaux 2017). The focus of the work is to unhide hidden landscape elements that have been in operation for centuries, but their role and meaning have changed significantly over time. Such change was related to the geopolitical, social and economic developments in the study region.

Road network formation has been around for millennia, and the importance of some road sections periodically increases or decreases. Changing the function and importance of the road network is a dynamic process and, therefore, from ancient times, they have had travel, trade, commercial and military roles. The ancient Egyptian, Sumerian and Babylonian sources describe the direction of the oldest roads. Historic roads are known to link the East with the West and the inner continental areas with the sea. At the same time, they also made it easier to travel and trade between cities. Under the rule of city-states and centralized empires, for example, during Achaemenid Iran and the Roman Empire, there were ways of prioritizing roads (Braudel 1972; Astour 2000; Colburn 2013). There were examples where roads were given specific names by their direction and primary function (Sitwell 1981; Knapton 1996).

Our study region (Fig. 1), Samtskhe-Javakheti, is an interesting territorial unit in this respect, as the diverse natural landscapes and various forms of the built environment and land use are present there. For centuries, well-developed local production and active trade relations with its surrounding areas had been distinguishing the region. Our interest was in the study of the region's road network and commodity turnover on the background of the East-West trade relations and the corridor so-called Silk Road.

The Silk Road is an iconic East-West bridging corridor that encompasses numerous roads, highways and *caravans*, from Antioch-Constantinople to present-day Central China and India (Richthofen 1877; Saliba 2008; Harold 2008; Williams 2014; Jones 2009). The term combines many branches of the primary and auxiliary roads described in different literary and cartographic sources; however, some researchers believe that this road has not lost its significance for millennia and is still relevant to many countries today (Christian 2000; Karluk and Suleyman 2014; Williams 2014). Both historiographical sources as well as archaeological material illustrate the importance of these roads and the diversity of trade goods (Tomber et al. 2008; Spengler et al. 2014). Discussion of the road network and export–import of goods in Samtskhe-Javakheti is essential as an integral part of the Silk Road.

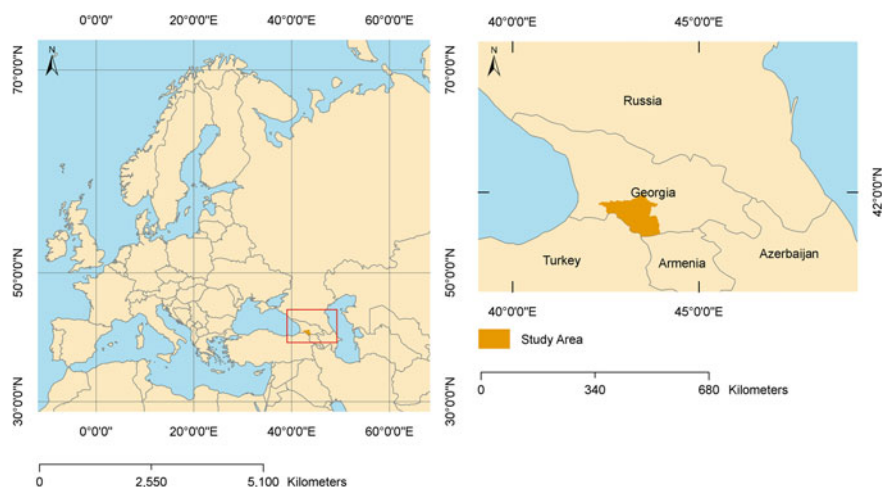


Fig. 1 Location of the study area

The roads and *caravanserais* here served to the travellers to and from Georgia, the Caucasus, the Middle East and European countries.

The fact that in some modern cartographic sources the Silk Road goes beyond the South Caucasus Corridor does not mean that Georgia and the South Caucasus had no transit function, as records of some European travellers can serve as the evidence of the carriageway existence of in the region (Kharebava 2018). The transit function of the South Caucasus Corridor is evidenced by the 1254 population census document. At that time, the Georgian population was around 8 million (Verulava 2019), which was more than 2% of the world population at that time (Klein et al. 2010). Accordingly, the population in the whole Caucasus region should have been even higher. Such a large population in the region is also emphasizing the importance of the trade and accompanying roads.

Mediaeval road network and trade were associated with population concentration and urban settlements. The document from the sixteenth century (The Great DeFTER of Gurjistan Vilayet) has described the settlements of the study area (Jikia 1941, 1958). In the twentieth century, academician Sergi Jikia published the Georgian version of this document in three volumes (Maisuradze et al. 2020). In the sixteenth century, the influence of the Ottomans intensified in the region. The demographic, economic and urban environments of this period determined the different character of the road network from that of today. In this work, we have surveyed the hidden elements of the environment based on the written historical sources, and the material remains preserved in the landscapes.

2 Study Area

Our study area (Fig. 1) includes the territory of modern Samtskhe-Javakheti, located in the southern part of Georgia, uniting six administrative municipalities (Maisuradze et al. 2018). The area of the region is 6412.8 square kilometres. The population comprises 160.5 thousand people (Maisuradze et al. 2020). The landscape is mountainous, which determined the complexity of the road network and impeded travel. In the region, the subalpine forest, highland meadows, subnival, deciduous and dark coniferous landscapes are present. The volcanic terrain, with rocky cliffs and canyons, characterizes the relief of the region. The western and north-western ridges play the role of oro-climatic barriers. The increased amount of precipitation in the coldest period of the year is causing an abundance of snowfall (Maisuradze et al. 2018). As a result, some of the roads were blocked and stopped operating; the landscape features of the study region significantly determined road functioning.

3 Materials and Methods

We used the following methods to study the subject: 1. Analysis of documentary and historiographical sources; 2. Analysis of existing literary and cartographic materials; 3. Field expeditions; 4. Development of the geo-information system by using ArcGIS, analysis of road network and import–export of goods using the Historical Geographic Information System (HGIS) technique.

The Great Defter of Gurjistan Vilayet was the main source of the research, upon which we developed GIS layers and attribute tables. The analysis of this document was particularly critical in identifying the essential centres of local production.

We also used secondary works based on various historical sources, which implied analytical research on the economic situation of mediaeval Samtskhe-Javakheti and trade relation issues, including major local markets (Makalatia 1938, 1957; Svanidze 1971; Lomsadze 1975). Besides, we also studied cartographic materials published in the last century, reflecting the state of the road network in the past (Javakhishvili 1926; Aslanikashvili 1953). They depict roads of various uses that have been active in the past centuries.

We conducted field surveys in the summer of 2017 and 2018. The study aimed to determine the direction of the sixteenth-century roads and their socio-economic significance. We studied the settlements and the state of the roads connecting them. We have put local roads on the map which are not part of the modern road network.

We used 1: 50,000 and 1: 25,000-scale Soviet topographic maps and ArcGIS base map satellite images. We identified currently active and non-active mountain passes. We identified the settlements that served as market centres and where both imported and local goods would sell. Then we developed a classification according to the direction of the imports. After that, we analysed the roads according to the directions of imported and exported goods.

4 Main Results

4.1 *Hidden Geopolitics*

Since the study period is the second half of the sixteenth century, we analysed the issue in terms of space-time. The centre of the region, just like today, was the town Akhaltsikhe. However, the road vector was not directed only to one dominant—Akhaltsikhe-Tbilisi direction, because Georgia at that time included several independent kingdoms. The kingdoms of Kartli and Imereti bordered Samtskhe-Javakheti, so the road network was not just one-way and was more multi-vector. Nowadays, in the region, only two major highways have international importance, during the sixteenth–seventeenth centuries many branches of roads existed with international function.

4.2 *Unhidden Modern Road Network*

It should be noted that currently, in the study region, we have identified the following categories of modern roads: 1. International highways; 2. Asphalted local; 3. the motor ground, covered with gravel; 4. Motor ground; 5. Non-motorized roads; 6. Railway; and 7. Narrow railway. The classification of the roads is based on their morphological nature, the type of cover and their function. We do not have paths in the classification because it was challenging to put them on the map due to the scale.

4.3 *The Hidden Mediaeval Road Network*

We have grouped the sixteenth-century roads into the following categories: 1. Main roads; 2. Interregional roads; and 3. Local roads (Fig. 2).

The classification of old roads is more general, as, at that time, there were no railways and solid-cover roads, and the most advanced modes of transportation were chariots and carts. The term international is symbolic here because, at that time, there was no border control, and a person who came to a foreign land acted following the local rules. Therefore, the status of the roads was not clearly defined, and their convenience and reliability determined their importance.

With the help of the ArcGIS, we have determined the length and directions of the communication units, which is shown in the Table 1.

The total length of the main roads comprised 855.61 km. Their direction partially repeated the direction of today's main highways. In addition to the above, there were relatively less congested roads that crossed the Arsiani, Adjara-Imereti, Trialeti and Samsar-Javakheti ridges, which are classified as interregional roads on the map



Fig. 2 Historic road network in the study region

Table 1 Length of the road network on the territory of Samtskhe-Javakheti, from the sixteenth century

Road type	Length (km)
Main roads	856
Interregional roads	307
Local roads	1382
Total	2545

(Fig. 2). Furthermore, the roads leading to the settlements, to the agricultural lands, and to the pastures were classified as local roads.

When classifying the road network, we excluded pedestrian and equestrian paths because they existed only temporarily, and their traces have not been preserved. The length of the road network is presented in the Table 2, which shows the development of road communications in the sixteenth century. Furthermore, what influence the road network condition had on the formation of the political-socio-economic picture of the region.

As can be seen from the data, the road network was quite well developed (Table 1). The length of the main roads exceeded the length of the interregional roads. Roads connecting local and rural areas and agricultural lands formed the most frequent network, as travel and commodity movement were frequent among rural settlements.

Table 2 Research region and road network, their length according to road types in administrative units

Historic administrative units (<i>Liva</i> and <i>Nahia</i>)	Length of roads, according to their types, km			
	Main roads	Interregional roads	Local roads	Total
Akhaltsikhe <i>Liva</i>	245	199	696	1140
Mzware	12	18	46	76
Chrdili	20	0	55	75
Ude	51	37	83	171
Kvabliani	33	24	33	90
Otskhe	21	4	65	90
Atskuri	30	75	68	173
Okrostsikhe	20	9	25	54
Aspindza	49	0	155	205
Chacharaki	9	33	165	207
Khertvisi <i>Liva</i>	134	0	290	424
Khertvisi	37	0	104	141
Tke-Javakleti	97	0	128	225
Buzmareti	0	0	58	58
Akhalkalaki <i>Liva</i>	278	48	210	536
Akhalkalaki	229	48	123	401
Tmogvi	27	0	31	58
Nialiskuri	22	0	56	78
Childiri <i>Liva</i>	69	26	18	113
Kanarbeli	69	26	18	113
Potskhovi <i>Liva</i>	18	3	25	46
Chrdil	18	3	25	46
Petre <i>Liva</i>	113	13	130	257
Petre	55	0	62	117
Kashveti	58	13	69	140

The most frequent road networks from the administrative units were characteristic to the Akhhaltsikhe, Khertvisi and Akhalkalaki *Livas* (Table 2).

In Akhhaltsikhe *Liva*, by the main road network were distinguished Ude and Aspindza *Nahias*, while in terms of interregional roads, Atskuri *Nahia*, which may be due to the roads leading to the Adjara-Imereti ridge, through which Samtskhe-Javakheti would connect to the Kingdom of Imereti. The local roads in Aspindza, Udes, Otskhe and Atskuri have an unusually high rate, which is related to the abundance of villages and the population density.

We have identified two categories of roads in Khertvisi Liva: main and local roads. The local cart and the equestrian road network are also frequent, which indicates the movement between the rural settlements and the density of the settlement network. Buzmareti Valley is distinguished, where there are only local roads. The valley is located close to Niali plateau and occupies the northern direction from Erusheti-Karzaneti road. One direction of the main trade route was winding near the village Buzmareti. The second direction was connected to the road Shalosheti-Gundi-Alandza, which bypassed the Buzmareti *Nahia*.

In Akhalkalaki Liva, the total length of the main roads was longer than in other Livas. Part of the Javakheti plateau, which included the Akhalkalaki *Nahia*, was connected to the Kingdom of Kartli, Paravani-Chikiana, Tabatskuri and Javakheti ridge, which was a branch of the Silk Road and ran eastward in the lower reaches of the Mtkvari River to the present-day Azerbaijan and Iran.

In Kanarbeli *Nahia*, which was located next to Akhalkalaki, local and interregional roads were presented in smaller numbers. Part of the *Nahia* extended to the plateau that is now part of the Republic of Turkey. The trade routes to Artaan, Kars and Erzurum passed by Lake Chrdili. The second direction was connecting the region with the Armenian districts.

The Georgian part of the Kanarbeli *Nahia* occupied a small area, which explains the small total length of the local roads. In addition, part of the roads passed through the villages and then joined the road leading to Artaani, Erzurum and Kars. The road network was frequent in Potskhovi and Petre *Livas*, which were connected to the trade routes leading towards the rivers Potskhovi and Gujaratistskali, as well as to the Adjara-Imereti and Trialeti ridges, which connected the study region to the Imereti and Kartli kingdoms. Consequently, these roads were individual branches of the Silk Road (Fig. 2).

4.4 Historic Road Network as a Hidden Landscape Element

Road communications are elements of public importance in the landscape. They ensured the development of trade relations on the ground and the circulation of goods, and relations between settlements or territorial units. There are many historic roads in the region, the importance of which is currently diminished. Roads that were once a connecting artery between regions and kingdoms have become a means of communication at the local level. Some of them remain only as gravel roads, the function of which is only to connect the rural settlements or to reach the agricultural lands, or they are used for pastoralism. The direction of the roads also gives us information about which goods went in which direction and where the main centres of local production were located.

The road network left its mark on each landscape. Road network determined to some extent whether particular landscape was involved in the activities of the society or vice versa, or became uninhabited and remained beyond the active use. Those old road communications, which at first glance do not seem to be visible in the landscape,



Fig. 3 **a** The historic road leading to the Tmogvi-Vardzia canyon; **b** A mediaeval bridge over the river Paravnistskali, in the village Tontio; **c** The section of the old road connecting Kartli and Samtskhe near the village of Abuli; **d** Caravanserai ruins on the territory of Akhalkalaki Fortress (Source Photographed by Roman Maisuradze, 2017–2019)

are the hidden element of the public activity of the space, which has been so important for centuries.

Landscape categories were distinguished from each other by different road network densities (Fig. 4). The mountain valleys and plateaus were distinguished by the length and high density of the road network, as well as in the middle mountains, where the dark coniferous forest landscapes are represented. Interregional roads, which connected Samtskhe-Javakheti to the kingdoms of Imereti and Kartli, mostly overlapped with the dark coniferous forest landscapes. In addition to the main caravan routes, other roads were connecting the regions that crossed the Adjara-Imereti and Trialeti ridges. The landscapes of the highland meadow and meadow-steppes occupied a significant part of the region. The roads crossing the steppe landscapes of the Javakheti plateau as well as the Samsari and Javakheti ridges created one system. The high intensity characterizes the road network in the landscapes of the volcanic canyon, which includes the Aspindza-Tmogvi-Vardzia section. Although the length of the road network here lagged behind that of the valleys, the dark coniferous forest, the volcanic ridges and plateaus of the highlands and the landscapes of the volcanic canyon cover a much smaller area than the landscapes mentioned above. In conclusion, road communications were quite well developed in the study region.

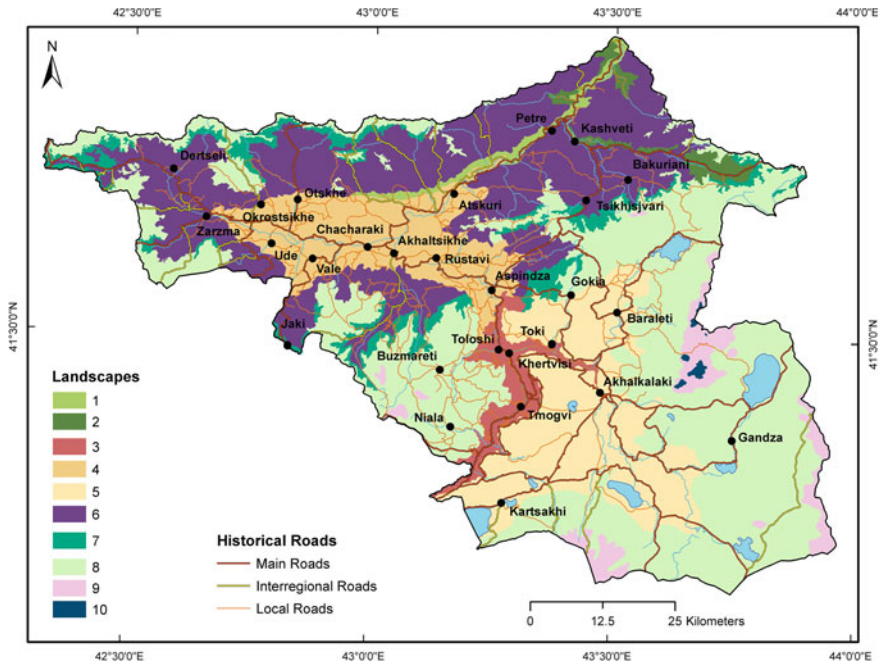


Fig. 4 Landscapes of Samtskhe-Javakheti: 1. Lower mountain landscape with oak and oak-hornbeam forests; 2. Middle mountain landscape with hornbeam-beech and chestnut-beech forests; 3. The landscape of the Middle Mountain Volcanic Canyon, with Hemi-xerophilic shrubland, steppe and open forests; 4. Middle mountain valley landscape with steppe vegetation, rarely with forest and shrubbery; 5. The landscape of middle mountain plateaus with steppe vegetation; 6. Middle mountain landscape with beech, beech-dark coniferous and pine-beech forest; 7. Upper mountain landscape with birch and birch-pine forests; 8. The subalpine landscape of highlands, with meadows and rare forests; 9. Highland alpine landscape with meadows and alpine shrubs; 10. The subnival landscape of highlands

The data of the road network shows that the density in the landscapes of the volcanic canyons and Samtskhe Valley is particularly high and equals 0.8–0.9 km/km², which is significantly higher than in the landscapes of lowland forests and volcanic plateaus, where the density is 0.35–0.5 km/km² (Fig. 4).

The high density of the road network along the Samtskhe Kvabuli and Mtkvari Valley is connected with the concentration of the leading agricultural and cultural centres. A significant number of the fortresses and towns were concentrated here, and the population density was higher than in other landscapes.

The road network density is relatively low in the middle mountain dark coniferous forest landscapes. For highland subalpine meadows and meadow-steppe landscapes, this figure drops to 0.26 km/km².

Part of the roads was periodically closed due to precipitation, mostly heavy snow, or natural hazards (Table 3). Some closures have been linked to frost and unfavourable travel conditions. Travelling with the modes of transportation at that period required

Table 3 The length of seasonally operating roads

	Road length (km)	The length of roads that were closed seasonally due to climatic and relief factors	%
Main roads	856	132	15
Interregional roads	307	195	63
Local roads	1382	302	21
Total	2545	628	100

more time than today. The modes of transportation in the region were horse, donkey, mule and camel. The means of transport of the cargo were carts, carriages and waggons. The roads crossing the Adjara-Imereti and Arsiani ridges are characterized by heavy snow and avalanches, which significantly hindered travel. The passes of the Trialeti ridge were less snowy but hard to cross due to the steepness. The peaks of the Samsari and Javakheti ridges were covered with snow during the cold period of a year, but the snow cover lagged behind the precipitation on the Arsiani and Adjara-Imereti ridges. However, the snow cover here was somewhat behind the Arsiani and Adjara-Imereti ridges. On rough, snowy, icy roads, one could cover 5–10 km by foot in a short day, while carts and waggons with load could cover 10–15 km with great difficulty. During bad weather, the roads were closed.

Almost a quarter of the roads were periodically closed, and travel was challenging, particularly to the directions of Adjara, Imereti, Guria and Kvemo Kartli. The case concerned military movements as well as domestic travel and trade relations.

4.5 The Road as a Hidden Economic and Geopolitical Unit

From the military-defensive perspective of that time, the roads may have a positive effect on the socio-political situation. This circumstance allowed the people to be better prepared and to use the seasonal closure of roads for defence. From the historical events of the study period, the multiple invasions of the Ottomans and the Iranians are noteworthy. In addition, significant threats were attacks by Dagestani gangs, followed by looting and human trafficking (Alimbarashvili 2013). This situation greatly affected Samtskhe-Javakheti and the Georgian kingdoms. This situation was exacerbated by trade in the Ottoman Empire and the existence of slave markets, where captives were sold at very high prices at the time (Fisher 1978; Pamuk 2000; Özmucurand Pamuk 2002). This circumstance prompted the Dagestani warriors living in the closed valleys to find an easy and at the same time ruthless way to earn an income. This event was preceded by the fact that Dagestani people lost lands in the north, which they had been using for centuries for grazing. The event was followed by the proliferation of Russian *Stanits* and their entry into the

Russian Kingdom. Poverty and land scarcity forced them to find alternative livelihoods, such as slave markets in the cities of the Ottoman Empire, which stimulated human trafficking. Such a situation posed a threat to travellers and traders.

Interregional travel routes have played an essential role in the lives of locals. Road safety and security should be of particular importance. If we consider both domestic and foreign trade, the various branches of the East-West connecting roads, we can assume that the trade and commerce were both local, regional and international, as *caravans* and traders were transported mainly by main roads. The steady movement of *caravans* on these roads was associated with both the existing infrastructure of the roads (*caravanserai*, *Funduki*, settlements) as well as the difficulties encountered here (Fig. 3).

The Table 4 shows that wine, spices, fruit and fabrics had to go the longest route. Destinations of imported goods mainly were located around the centres of *Livas* and the principal settlements of the *Nahias*. The places where the fairs were held were located in the area of the castle Rabats and crossroads. In this respect, the Rabats of Akhaltsikhe, Ude, Otskhe and Atskuri fortresses stood out. Also important were the Rabats of Khertvisi, Tmogvi, Aspindza and Akhalkalaki, located near the caravanserais of Nakalakari and Paravani (Svanidze 1971; Lomsadze 1975).

Wine and spices have travelled the longest in the region, followed by salt, textile, glue, paints and clothing. These goods were also transported from various points, and their delivery to their destinations meant a covering of considerable distance. Various goods passed on the other roads. Sometimes goods of a similar category

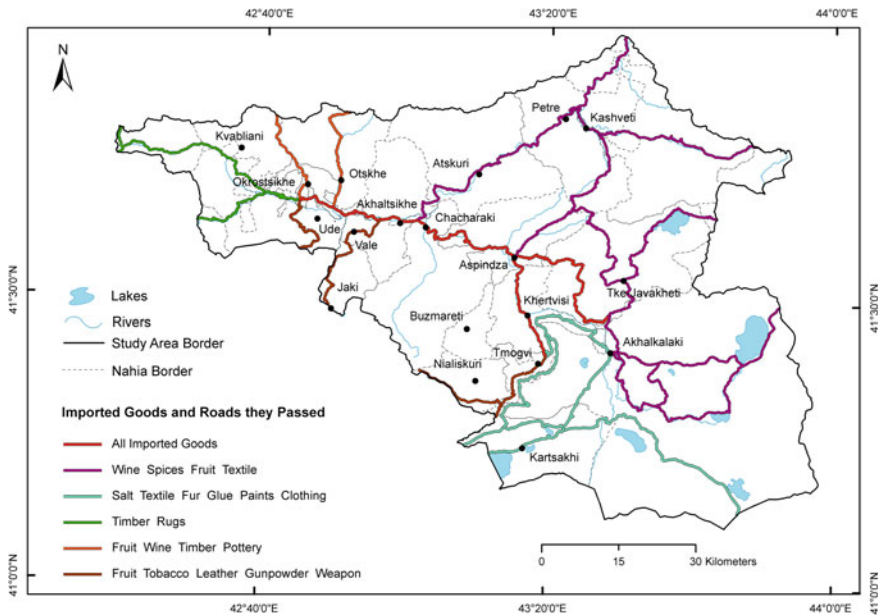


Fig. 5 Imported goods and their connections

Table 4 Roads and imported goods

Names of the goods passing through the main roads	Road length	%
Salt, textile, fur, glue, paints, clothing	190.1	22.22
Wine, spices, fruit, textile	292.11	34.14
Wood, rugs, dairy products	82.92	9.69
Fruit, mash, wood, clay products	58.92	6.89
Fruit, tobacco, processed leather, gunpowder, guns	101.52	11.87
All imported goods passed through the destination	130.02	15.20
Total	855.61	100

Table 5 Directions of import and export

Direction	Length, km	Share, %
Towards Artaan-Kars-Erzurum	39.23	4.58
Towards Adjara-Guria and Trabzon	70.02	8.18
Towards Potskhovi-Artaani-Shavsheti	62.49	7.3
Towards Imereti	55.86	6.53
Towards Kartli and Kakheti	149.13	17.43
Towards Armenia	58.65	6.86
Central roads, where several roads leading to different regions were connected	420.23	49.11
Total	855.61	100

are found in different combinations because they depended on many factors. Export goods took the same route, and these roads served to take local products out of the region (Table 5).

The goods, which were produced in Samtskhe-Javakheti (Table 4), can be considered as export goods for this period. Since there is a small amount of data on production, we will rely on all the written and digital data we have in the census materials for local settlements.

Roads crossing the region were the means of connecting the East and the West. In addition, passing *caravans* were buying and transporting products from local markets. To some extent, local traders also exported them (Fig. 6). Traders from neighbouring countries also occupied some sectors.

The region was famous for its grain crops and was considered Georgia's granary. We can conclude that wheat, barley, rye and millets were the products that were exported from the region (Maisuradze 2019b). Honey, wax and propolis are products that were made in abundance in the region. In this regard, Kvabliani gorge, the middle part of Uraeli, Javakheti plateau and Atskuri area, as well as Borjomi gorge and Sadgeri plateau are distinguished. Exports should have included a significant amount of local wine and grape products, Churchkhela and raisins (Maisuradze et al. 2020). Flaxseed oil should have also been exported (Maisuradze 2019a), which was made

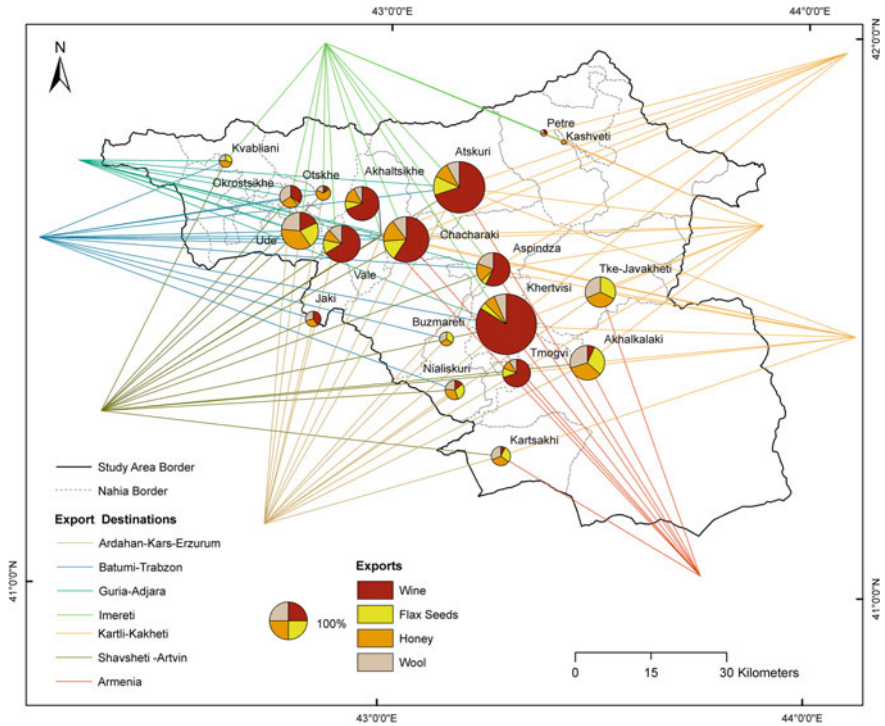


Fig. 6 Road network analysis according to the primary export goods and their directions

in the region for this period, as evidenced by the presence of *Bezirkhanes*, flaxseed oil processing manufactures. Flaxseed oil was later produced on the territory of Kvemo Kartli, on the present-day Tsalka, Gomareti and Dmanisi plateaus. Paints and small items were made in settlements that were well fortified, for example, in Tmogvi, Khertvisi, Aspindza, Atskuri, and Akhaltsikhe. Swords and other weapons were produced in the same settlements. The exported goods were wool, felt and leather, as evidenced by the abundance of sheep, cattle and pigs in the region. The pork skin was the best material to make armour, shoes and saddles. Later, their export should have been weakened due to a large number of the Islamic population in the neighbouring regions. Exports of timber and wood products were mainly directed to the south, east of Anatolia and Armenia-Iran. In terms of exports of iron goods, the Tmogvi-Khertvisi strip was distinguished, where the best iron products were made.

Goods were imported from Kars-Erzurum, namely, weapons, shotguns and ammunition, as well as leather, paints and tobacco. Salt and spices, clothing, textiles, fur and dyes were imported by three different routes along the southeastern roads. Goods were imported from Kartli and Kakheti in four ways: 1. Borjomi gorge; 2. Gujaratist-skali gorge and the pass over the Trialeti ridge; 3. via Tabatskuri; 4. Through the Faravani. In this way, they mainly imported wine, spices, fruit and textile. Different types and tastes of wine were in demand here; also, the types of fruit that did not

grow in Meskheti. The same can be said about the fabric imported from the East. Clay products, timber and wine, which were different from the local ones, were imported from Imereti via Zekari Pass and Fersati plateau. From the west, through the Kvabliani gorge and Goderdzi pass, timber, dairy products, rugs and other local woven goods were imported. The central transport axis on the map represents the section of the road where almost all imported goods passed (Fig. 5).

Remains of *caravanserai* are still preserved in Rabats of Atskuri, Akhaltsikhe and Akhalkalaki (Fig. 3); besides, the sources mention the *caravanserais* of Khertvisi and Paravani (Lomsadze 1975). The village of Paravana was neither a regional centre nor a fortified fortress. The *caravanserai* existed here not because of the status of the settlement, but because of its location. Before Chikiani Pass, traders and travellers had to walk the long and challenging road and needed a break. The *caravanserai* remains preserved near the village Nakalakevi indicate that this section was crowded and in addition to Khertvisi-Tmogvi, another stopping point was needed.

The abundance of *caravanserais* and market places is a testament to the fact that the Samtskhe-Javakheti region was part of the East-West Corridor, and the roads here operated within the great road system that von Richthofen (1877) called the Silk Road.

In the sixteenth century, the function of the East-West Corridor was significantly reduced. However, this fact should be perceived in society as a temporary and unfavourable period. We think it would be hard to imagine that they would have to live in the conditions of military and predatory-robbery attacks for centuries to come. It would probably be more challenging to trade peacefully, move caravans and bring local produce to market.

Since the late sixteenth century, part of the roads acquired the function of transporting kidnapped captives. The slave trade was legal in the Ottoman Empire, but it was banned in the Georgian kingdoms, Kakheti, Kartli and Imereti. Therefore, the gang groups chose the well-hidden roads. Such roads ran mostly in forested landscapes. There was a market in Akhaltsikhe where captives were sold and then taken to various cities in the Ottoman Empire or neighbouring countries. Such a vicious form of trade must have been linked to the weakening of the role of the corridor, the isolation of the mountainous regions of the Northern Caucasus, and ongoing political changes on the North Caucasus plains, causing hardship and poverty in its eastern part. As an alternative to this, the Ottoman Empire indirectly offered them a market where, unfortunately, large-scale slave trade took place. Developments in the region have significantly weakened the Georgian kingdoms and led to a change in the negative direction of the *caravan* routes.

The study of hidden and forgotten elements once again confirms how essential they represent in determining historical road communications and import–export of goods and in restoring the historical picture. Presented research brings the socio-cultural significance of the region to the forefront, as well as revives the hidden information and knowledge about the space.

5 Conclusions

In Samtskhe-Javakheti, road communications were well developed in the sixteenth century. They only partially replicated the direction of modern roads. The region was connected in several ways with the Georgian kingdoms, as well as with modern Armenian territory and the central districts of the Ottoman Empire.

Roads were mainly concentrated in the centres of the administrative units (*Liva*, *Nahia*) and the settlements around the castles (*Rabati*).

According to the landscape analysis, the road network was particularly dense in the landscapes of the Samtskhe Valley, the Javakheti plateau and the Tmogvi-Vardzia volcanic canyon, so these areas were more populated and economically advanced.

Only part of the roads was permanent. Roads leading to Imereti and Adjara-Guria were closed for a long time. The roads from Borjomi gorge and Chikiani pass were the busiest. They were part of the Caucasus Branch of the Silk Road and the East-West Corridor.

In the sixteenth century, the East-West Corridor could no longer function as before, although the production of goods was still maintained. The primary export goods were wheat, barley, rye, wine, fruit, honey and propolis, wax, wool, felt, nuts, flaxseed oil, dyes and leather products, saddles, iron goods and weapons. Imported goods were weapons, salt, spices, tobacco, oriental and dried fruits, wine, textile, dyes, clay products, timber and precious items.

From the sixteenth century, the function and cargo turnover of the Samtskhe-Javakheti road network decreased. The region has become a relatively isolated region, with fewer ties to the Georgian kingdoms and a reduced role in the functioning of the East-West Corridor. The very uncomfortable function of the roads has been strengthened—the transfer of abducted people who were sold to the Ottoman Empire and its neighbouring countries. The travel and trade destination of the region's road network was renewed when Georgia gained independence. These road communications are of geopolitical importance to the territory of the South Caucasus and Eastern Anatolia. Therefore, they have both local and regional significance. Their prospects are enhanced by the rich historical experience of the existence of road communications.

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