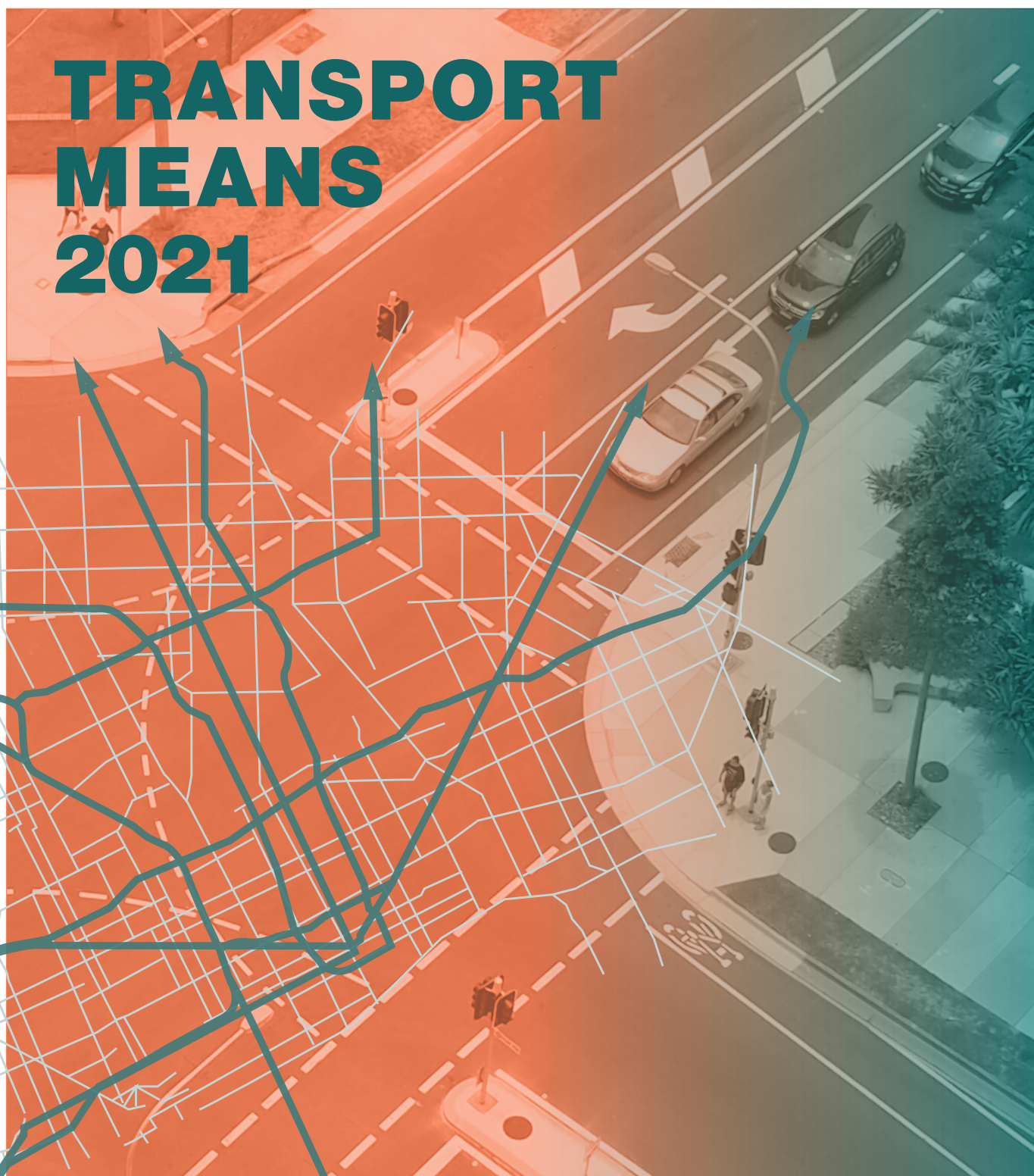


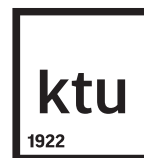


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Prospects of Intermodal Transportation and Logistics Channels Development for Georgia

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Abstract

The paper discusses the importance of intermodal transportation and key elements in the geopolitical reality of Georgia, and provides relevant recommendations. Georgia's strategic geopolitical location determines the interest of neighboring countries, as well as European and East Asian countries, to use Georgia as a transit region. Globalization and growing economic ties with the EU provide a unique opportunity for Georgia to fully integrate into international trade. The transport and logistics sector should play one of the crucial roles in this process. In this regard, Georgia's integration into the EU transport system has a special importance, which implies the implementation of European standards and the improvement of transport links. The article also emphasizes that through the developed infrastructure and quality services, Georgia will become part of the global supply chain, which will have a positive impact on the development of manufacturing and export activities in the country.

KEY WORDS: *logistics, maritime transport, Caucasus Transit Corridor, intermodal operations.*

1. Introduction

The existence and development of society are impossible without transport. In modern conditions, transport is an integral part of economic activity and is a means of transportation for both people and cargo (goods). Almost all types of transport are developed in Georgia: rail, road and air, as well as seaports, oil and gas pipelines, which facilitates Georgia's integration into the international transport network. This, in turn, is a guarantee of security and economic development of the country.

Georgia has the potential to become a regional transit hub and increase its share of transit cargo. Georgia's oil and gas pipelines, Black Sea ports, East-West Highway, and airports play an increasingly important role in connecting East and West. At the same time, Georgia is a vertical (north-south) transport link between Russia and Turkey and, via Armenia, Iran. The government approved a 10-point action plan to make the country a regional center ("hub") and persistently began to improve border management [1]. Moreover, it has made it possible for the private sector to participate in the port sector, in parallel with the strengthening road infrastructure along the East-West Highway. Railway reform was implemented and rail transportation services were moved to a commercial basis. Also, the commercial civil aviation sector operates in a completely liberal mode.

Positioning Georgia as a transport and logistics hub is one of the most ambitious and interesting projects of modern Georgia. Part of this project has already been implemented. Reviewing the map of the region is enough to understand the strategic location of Georgia in relation to the transport arteries in the region. Some of these transport corridors date back to antiquity, including sections of the Silk Road.

Georgia is an active participant of TRACECA (Transport corridor for Europe-Caucasus-Asia), the Middle Transport Corridor and other international transport corridors. Talks are underway on the GUAM transport corridor from Poland to Baku (Organization for Democracy and Economic Development - GUAM is an international regional organization which includes: Georgia, Ukraine, Azerbaijan and Moldova.). Georgia also has expressed interest in participating in the New Silk Road Initiative. A new platform, the Three Seas Initiative, has emerged, linking the Baltic, Adriatic and Black Seas. Georgia should also express interest in participating in this initiative (Fig. 1).

Some of these initiatives are multidimensional and sometimes even act in favor of various economic and geopolitical interests. This creates favorable conditions for action in line with the state interests of Georgia and the strategic vector of economic and political development. The crisis caused by Covid-19 has expanded the opportunities available for Georgia in this regard: instead of price, credibility and flexibility have become crucial in organizing industrial and supply chains [2].

As a result of economic and infrastructural reforms carried out in recent years, the transport and logistics sector has developed significantly in Georgia. As a consequence of infrastructure modernization, simplification of customs procedures and liberalization of services in key sectors of the economy, the country's transit and logistics potential has been enhanced, ensuring better international connectivity with global markets. Georgia is currently upgrading and expanding its transport infrastructure, which includes a growing national expressway system, new rail routes, international airports, and expanded seaports / terminals. At the same time, continues legislative rapprochement with the EU in the field of transport, which is a priority issue in the process of Georgia's European integration.

The development of the country's infrastructure, transport, logistics, communication, energy, technological, educational and financial hub systems is important for the realization of Georgia's potential as a regional hub for the long-term economic development of the country [3, 14, 15].

Despite the successes achieved, a number of challenges remain to transform Georgia into a regional transit and logistics hub. Low quality of service, outdated logistics infrastructure and equipment, inefficient supply chain management, as well as lack of workforce organization and qualified staff – all of these are an incomplete list of problems in the field of transport and logistics. This will require continued efforts to improve transport infrastructure and services until the existing limiting factors are fully addressed.

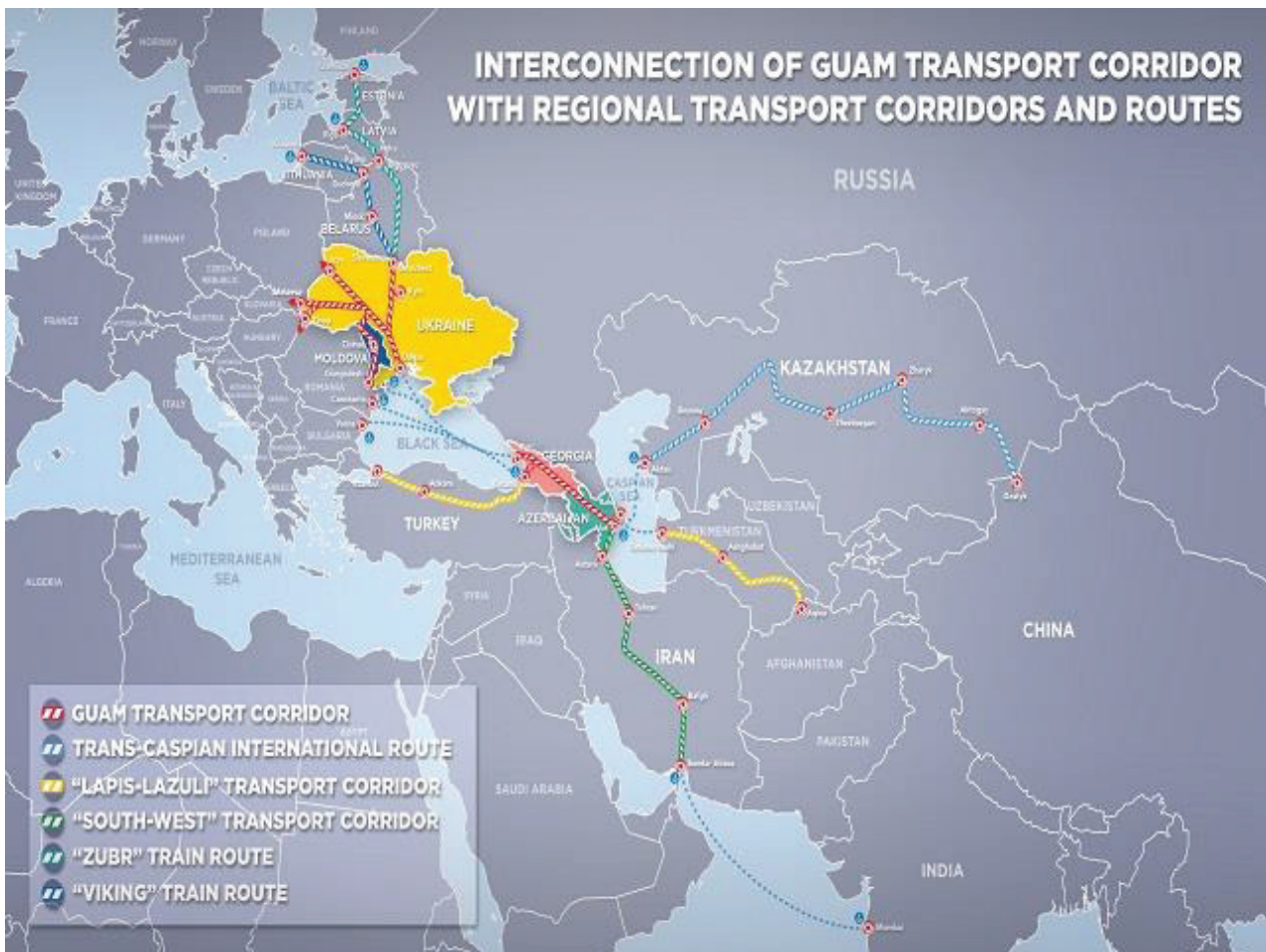


Fig. 1 GUAM Transport Corridor – “The Three Seas Initiative“ [4]

It should be noted that the ongoing infrastructure projects in the country and the region, economic development, visa liberalization, significant progress in the tourism sector before the global spread of the Covid-19 pandemic, led to a significant increase in the movement of individuals, cargo and traffic through customs checkpoints. Therefore, in order to ensure further growth of the throughput rate, the issue of modernization / expansion of the existing checkpoint infrastructure is on the agenda. In this context, the importance of modern standards of existing customs checkpoints (land, sea, air, rail), international trade-oriented, risk-based, effective and fast customs control, as well as the construction of new checkpoints is becoming more important [3, 15].

2. Object of Research

Efficient transport and logistics systems create opportunities and benefits for economic and social development that lead to positive cartooning effects such as increased access to markets, education, employment, and additional investment. Transportation and logistics in developed countries account for 6% to 25% of GDP (as of 2019, transport and warehousing in Georgia accounted for 6.5% of GDP, which is an important part of the country's economy). In addition to this, the increased cost and employment effects of transportation and logistics services usually outweigh the benefits generated by passenger and freight transportation and have a significant and indirect positive effect [3].

Cargo transport vehicles are characterized by constantly evolving dynamics, which primarily implies faster and more reliable services. In the global transport industry, intermodal operations are increasingly used to transport cargo, which underscores the importance of infrastructure connecting different modes of transport, especially at seaports and logistics centers (rail, road and air connection). Consequently, in order to ensure a continuous transport system, it is

important not only to create an efficient transport system for each type of transport, but also how different modes of transport interact. This tendency was conditioned by the possibility of containerization of cargo.

Georgian logistics field is going through a transformation process. The appearance of new international players in the Georgian market and the expansion of existing players are observed. Companies can develop types of logistics services through internal resources and outsourcing. However, the reasons for making this decision are important. The development of strategically designed internal logistics helps the company to maintain a high level of control over logistics processes and, accordingly, in maintaining quality. Procurement of strategically planned external services has a positive effect on the focus of the company. Most companies operating in Georgia prefer internal logistics, however, this is due to lack of knowledge about the benefits of using external service procurement, limited knowledge and skills in managing external service procurement projects in companies, lack of supply chain and logistics processes for monitoring external procurement effectiveness and etc. As a result, the cost of logistics services is high, which reduces the competitiveness of local companies.

Located at the crossroads of Europe and Central Asia, Georgia is a transit country that connects several important economic regions with a total population of 700 million. These include the European Union (448 million), the Commonwealth of Independent States (CIS) (240 million), Turkey (85 million) and the Caucasus region (17 million) [5]. The Caucasus Transit Corridor (CTC) is a major transit route between Western Europe and Central Asia for the transportation of oil and gas, as well as dry cargo. CTC is part of the TRACECA International and Regional Corridor; It is an alternative to the Northern Corridor leading to the Russian Federation and Belarus in the north and the corridor leading to Turkey and Iran in the south, as Iran cannot accept cargo sent from Europe and the United States [6, 14]. Transit by type of transport accounts for about 60% of the total weight of cargo transported by land, 75% of Georgian rail transport and almost 80% of the volume of cargo handled by Georgian ports [7, 10].

The development of trade and transit potential is crucial to Georgia's future. With a population of up to 4 million, Georgia's local market is much smaller than that of its geographical neighbors. Turkey, Azerbaijan, Kazakhstan and Turkmenistan together are about thirty times larger in terms of population, with an average purchasing parity three times higher than the Georgian market. In such a case, it is not difficult to understand why trade and transit are essential elements of Georgia's development plan. By using its central geographical location, the country can take advantage of some of the trade flows from west to east and, conversely, expand its participation in the international value chain by providing logistics services. This may include transportation, warehousing, forwarding services, and even value-added services related to the supply chain.

3. Results and Discussion

The need to develop the logistics sector in Georgia is also indicated by the World Bank Logistics Index (LPI), where according to the latest data, Georgia ranks 124th out of 160 countries. The LPI is an international ranking with six evaluation criteria, which covers the most important issues of countries' logistics efficiency. These criteria are:

- **Customs** – efficiency of border crossing procedures and customs clearance;
- **Infrastructure** - efficiency of logistics and transport infrastructure;
- **International Shipments** - Ease of organizing competitive international shipping with competitive prices;
- **Logistics Competence** - quality and competence of logistics services;
- **Tracking and Tracing** - Possibility of tracking and tracking shipments along the supply chain;
- **Timeliness** - the rate of timely delivery of cargo at the scheduled time.

The Logistics Index reflects the vision of international service providers and business operators on how countries are integrated into the global logistics network through their core trading gateways. Therefore, it reflects not only changes across the country, but also problems with access outside the country. For example, border crossing issues at border checkpoints in neighboring countries [8].

It should be noted that in the 2018 ranking, Georgia has improved its position by several steps compared to 2016. Despite the progress, the current situation is far from the desired indicators. According to 2018 data, a small improvement is observed in almost all components: Customs (2.38 points), Infrastructure (2.36 points), International Shipments (2.38 points), logistics Competence (2.27 points), Timeliness (2.92 points). Only Tracking and Tracing rate deteriorated (2.37) (Table) [3].

The main reasons why the rate of tracking and tracing has decreased is the lack of integration of information and communication technologies and electronic data exchange systems and the low level of automation of logistics processes. GPS systems are rarely used in tracking and tracing operations, and more sophisticated radio frequency-based cargo/goods identification (RFID) systems are almost non-existent in Georgia at this stage. However, despite the fact that Georgia has invested heavily in road infrastructure development over the past decade, the logistics and intermodal infrastructure remains to be improved compared to developed countries, which leads to low efficiency, high cost and relatively low reliability of the logistics system operation. High costs negatively affect international shipping [3, 11].

In addition, the current level of knowledge and education in transport and logistics management in Georgia does not meet market requirements. Existing qualification standards for higher and vocational education need to be updated. Demand for skilled labor in the field of logistics and supply chain management is growing dramatically. Planned logistics centers, as well as the development of existing and new port infrastructure will increase this demand and deepen the shortage of logistics specialists. The shortage of experienced personnel in logistics is one of the serious obstacles to the inflow of foreign investment in this sector.

Comparison of Georgia's aggregated LPI data with the region and the Baltic states, 2018 [8]

LPI Rank	Country	LPI Score	Customs	Infrastructure	International Shipments	Logistics Competence	Tracking & Tracing	Timeliness
36	Estonia	3.30	3.30	3.13	3.19	3.15	3.20	3.80
37	Turkey	3.29	2.94	3.36	3.19	3.23	3.37	3.68
43	Lithuania	3.20	3.02	3.00	3.03	3.10	3.25	3.78
50	Romania	3.10	2.73	2.86	3.15	3.01	3.19	3.61
55	Latvia	3.02	2.93	3.03	2.97	2.92	3.06	3.25
57	Bulgaria	3.00	2.77	2.71	3.16	2.96	2.93	3.43
69	Ukraine	2.83	2.46	2.38	2.77	2.76	3.08	3.45
77	Kazakhstan	2.77	2.57	2.59	2.73	2.6	2.81	3.31
81	Iran, Islamic rep.	2.71	2.46	2.67	2.68	2.76	2.63	3.07
85	Russian Federation	2.69	2.25	2.64	2.59	2.74	2.67	3.23
113	Moldova	2.52	2.31	2.21	2.69	2.36	2.36	3.1
116	Armenia	2.51	2.39	2.39	2.55	2.45	2.38	2.84
117	Uzbekistan	2.50	2.13	2.44	2.38	2.49	2.54	3.01
123	Azerbaijan	2.45	2.53	2.69	2.56	2.14	2.18	2.62
124	Georgia	2.45	2.38	2.36	2.38	2.27	2.37	2.92
142	Turkmenistan	2.34	2.25	2.23	2.36	2.20	2.32	2.63

Foreign companies consider the shortage of staff, as one of the highest risk factors for the development of their business in Georgia. The personnel employed in the logistics sector are mainly self-taught or self-trained specialists who do not have theoretical knowledge in this direction. This was due to the fact that there were practically no qualification programs in logistics field in Georgia for years.

In 2019, it was decided to establish a branch of the Batumi State Maritime Academy in Poti., which at the initial stage will focus only on vocational education - both the profession of sailor and port professions. For example: ordinary sailor of deck and machine section, welder, machinist, crane operator, computer engineering graphics operator, fishing vessel navigation, port logistics operation, etc. This project will help improve the quality of transport and logistics services in Poti [7].

Most of the cargo flow in Georgian ports are transit. Dry, bulk and liquid cargoes are negatively impacted by declining economic activity in neighboring countries. Another challenge is the fact that Georgian ports do not have the terminal for ferry only, which does not need the help of a pilot and tugboat, which makes ferry transportation more expensive to Georgia and from Georgia.

Inconvenient land access was one of the main challenges facing the ports of Batumi and Poti, however, work has begun in recent years to eliminate this challenge. In order to ease traffic jams in the vicinity of the Batumi port, the construction of a four-lane one-kilometer overpass at the entrance to the city was completed in July 2018. The overpass separated the Batumi container terminal and the entrances to the city, therefore, traffic jams were eased. Investments have been made to increase the capacity of container handling in the port of Batumi, ferry and container spaces were separated a warehouse was also added [3, 12, 14].

In Poti, road transport is mobilized to berths, from where containers are unloaded from ships and transported to container terminals away from the berth. However, most trucks that transport containers in both directions are outdated and unreliable. Also unfavorable is the quality of access roads and terminal equipment to terminals away from the port, which hinders the processing of containers and significantly increases the duration of ferry operations, which has a very negative impact on the port's competitiveness. Accordingly, the port system needs to be improved in order to increase the productivity of the port [9].

Supply chain management in Georgia is at an early stage of development. Although third-party logistics service providers are present in Georgia, they do not offer a full range of services to customers, as in countries with relatively more developed economies, and are mainly transit-oriented. A small number of well-developed companies are vertically integrated into the market to fill gaps in service delivery. In particular, direct and indirect support for training and upgrading in logistics and supply chain management will be important. Another priority is to explore alternative regulatory models for forwarding services that will help to improve service quality and to reduce costs, especially for small exporters.

Georgia's task is to transform the country into a regional logistics center and upgrade a variety of (different types of) infrastructure. The analysis of the transit potential and the functioning of the corridor indicates the urgent need for international cooperation and the need to address regulatory, institutional and infrastructural shortcomings. Thus, proper coordination mechanisms are essential, especially to facilitate many types of transport planning. In this regard, a state transport strategy is being developed, which should significantly contribute to the effective planning and coordination of these issues.

4. Conclusions

According to the researches results, the potential of the Caucasus Transit Corridor in terms of additional transit shipments needs to be explored in order to compare it with alternative transit routes. In recent years, high growth rates of shipments highlight the following positive trends in the development of Georgia's transport corridor:

- ❖ The international freight market is recognized as a transit country for Georgia;
- ❖ New cargo will be transported by rail, which would not be transported by any other means of transport through the corridor to Georgia;
- ❖ The prospect of attracting additional cargo flows ensures the interest of sea lines to carry out regular shipments between Georgian seaports and other European ports.

It is clearly necessary to establish a unified transport network, where the relationship between the client and the freight forwarder is regulated by a single tariff policy and the cargo is transported by a single transport document / bill of lading (two or more modes of transport in two or more countries). This is one of the main ways in which it will be possible to effectively reduce and eliminate the real problems in the transport space of Georgia today [10]. The creation of a multimodal (mixed) type of transport operator and a unified transport system in general is of economic, political and social interest for each of the countries of the Caucasus transport corridor, as well as for the region as a whole.

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