

Горизонти науки

UDC 911.3: 338.47:656.1/.5](479.22)

DOI: 10.26565/2076-1333-2019-26-01

Nodar Elizbarashvili

*Prof. Dr., Head of Department of Regional Geography and Landscape Planning,
Head of Commission (C16.25) of Landscape analysis and Landscape Planning of International Geographical Union
e-mail: nelizbarashvili@yahoo.com, ORCID ID: <https://orcid.org/0000-0001-8537-7728>*

Davit Sidamonidze

*PhD Student of Human Geography
e-mail: Davit.sidamonidze@yahoo.com, ORCID ID: <https://orcid.org/0000-0002-0386-896X>*

Nana Deisadze

*Researcher of Human Geography
e-mail: ndeisadze18@gmail.com, ORCID ID: <https://orcid.org/0000-0003-0561-1719>
Iv. Javakhishvili Tbilisi State University, Chavchavadze Av., 3, Tbilisi, 0179, Georgia*

METHODOLOGICAL APPROACH FOR LAND TRANSPORT RESEARCH AND ITS IMPORTANCE FOR GEORGIA'S SPATIAL ARRANGEMENT

The purpose of this article is to show the place of Georgian land transport in spatial development, in its economic development and future perspectives, with methodological approach. The topic was chosen due to its actuality. Decline in amounts of freight and passenger shows that country is not so attractive to be part of any international transport corridor. To overcome the problem, we should know cause of it and the whole process of development, showing the factors which have influenced on the current result.

The aim and novelty of the article is research of human geographical aspects of modern Georgian land transport, which covers the following objectives and issues: analyze existed modern literature around Georgian land transport, find and explain causes and consequences compare current trends with past and setting the perspectives.

Examining Georgian land transport will be good example for understanding Caucasian transport corridor in order to connect it with international transport corridors and benefit for local economic growth. Being part of international trading systems is key to Georgia's geopolitical location. According to current international economic environment and land transport's infrastructural and economic regress there are several questions how can it be part of international transport corridor. Comparing with EU reforms and study of Chinese transport connections towards European countries will give some answers.

Keywords: Caucasus, land transport, Georgia, methodology, international transport corridor, Georgian railway, geoeconomy, geopolitics.

Нодар Елізбарашвілі, Давіт Сідамонідзе, Нана Дейсадзе. МЕТОДОЛОГІЧНИЙ ПІДХІД ДО ДОСЛІДЖЕННЯ НАЗЕМНОГО ТРАНСПОРТУ ТА ЙОГО ЗНАЧЕННЯ ДЛЯ ПРОСТОРОВОГО РОЗВИТКУ ГРУЗІЇ

Метою даної статті є показати роль наземного транспорту Грузії у просторовому розвитку країни, а також описати економічний розвиток і майбутні перспективи транспортної системи за допомогою методологічного підходу. Тема була обрана у зв'язку з її актуальністю. Зниження обсягів вантажних і пасажирських перевезень показує, що країна не настільки приваблива, щоб бути частиною будь-якого міжнародного транспортного коридору. Щоб вирішити цю проблему, ми повинні знати причину її виникнення і весь процес розвитку, показуючи фактори, які вплинули на поточний результат.

Метою і новизною статті є дослідження географічних аспектів сучасного наземного транспорту Грузії, яке охоплює такі завдання і проблеми: аналіз існуючої сучасної літератури з наземного транспорту Грузії, пошук і пояснення причин та наслідків географічних змін, порівняння минулих і поточних тенденцій і встановлення нових перспектив. У цій статті в якості методології дослідження використовується системний підхід. Представлена робота заснована на огляді літератури та аналізі вторинних даних. Літературні і вторинні дані були зібрані з використанням ручних пошукових і електронних пошукових систем і наукових електронних баз даних (Jstor, EBSCO).

Вивчення наземного транспорту Грузії буде хорошим прикладом для розуміння Кавказького транспортного коридору, щоб пов'язати його з міжнародними транспортними коридорами та отримати вигоду для місцевого економічного зростання. Участь в міжнародних торговельних системах є ключем до геополітичного положення Грузії. У відповідності до сучасної міжнародної економічної ситуації та інфраструктурного й економічного регресу наземного транспорту виникає низка питань, яким чином він може стати частиною міжнародного транспортного коридору. Порівняння з реформами ЄС і вивчення транспортних зв'язків Китаю з європейськими країнами дасть деякі відповіді.

Ключові слова: Кавказ, наземний транспорт, Грузія, методологія, міжнародний транспортний коридор, грузинська залізниця, геоекономіка, геополітика.

Нодар Елишбарашвили, Давит Сидамонидзе, Нана Дейсадзе. МЕТОДОЛОГИЧЕСКИЙ ПОДХОД К ИССЛЕДОВАНИЮ НАЗЕМНОГО ТРАНСПОРТА И ЕГО ЗНАЧЕНИЕ ДЛЯ ПРОСТРАНСТВЕННОГО РАЗВИТИЯ ГРУЗИИ

Целью данной статьи является показать роль наземного транспорта Грузии в пространственном развитии страны, а также описать экономическое развитие и будущие перспективы транспортной системы с помощью методологического подхода. Тема была выбрана в связи с ее актуальностью. Снижение объемов грузовых и пассажирских перевозок показывает, что страна не настолько привлекательна, чтобы быть частью какого-либо международного транспортного коридора. Чтобы решить эту проблему, мы должны знать причину ее возникновения и весь процесс развития, показывая факторы, которые повлияли на текущий результат.

Целью и новизной статьи является исследование географических аспектов современного наземного транспорта Грузии, которое охватывает следующие задачи и проблемы: анализ существующей современной литературы по наземному транспорту Грузии, поиск и объяснение причин и последствий географических изменений, сравнение прошлых и текущих тенденций и установление новых перспектив. В этой статье в качестве методологии исследования используется системный подход. Представленная работа основана на обзоре литературы и анализе вторичных данных. Литературные и вторичные данные были собраны с использованием ручных поисковых и электронных поисковых систем и научных электронных баз данных (Jstor, EBSCO).

Изучение наземного транспорта Грузии будет хорошим примером для понимания Кавказского транспортного коридора, чтобы связать его с международными транспортными коридорами и извлечь выгоду для местного экономического роста. Участие в международных торговых системах является ключом к геополитическому положению Грузии. В соответствии с нынешней международной экономической ситуацией и инфраструктурным и экономическим регрессом наземного транспорта возникает несколько вопросов, каким образом он может стать частью международного транспортного коридора. Сравнение с реформами ЕС и изучение транспортных связей Китая с европейскими странами даст некоторые ответы.

Ключевые слова: Кавказ, наземный транспорт, Грузия, методология, международный транспортный коридор, грузинская железная дорога, геоэкономика, геополитика.

Introduction. In the early twentieth century, George Nathaniel Curzon, India's Vice-King and British Foreign Minister traveled from the west side of the South Caucasus to the East-Batumi-Baku journey. Curzon recalled the Argonauts and added that the richness of the Golden Fleece did not fit into the region, attracting many modern "Argo". Moreover, from this period transport in Georgia has grown more and more.

The development of transport in Georgia during the Soviet period has played an important role in enhanced economic growth of the country, enrichment of its fossil wealth, expansion of economic-geographical relations with other districts, further development of urban centers, etc. The development of the transport network has contributed to the concentration of economic life in individual points and nodes, as well as comparable equally territorial deployment.

In the 21st century, the worldwide globalization process has radically changed the global picture and embraced almost every aspect of social life - economic, social, political, cultural sphere. In the face of globalization processes, the world is increasingly seeking economic integration.

As for today, transport plays an important role in socio-economic development of Georgia and we can attach it to strategic sectors group. The difficult situation created in the transport sector for the objective and subjective reasons arising in the period after the collapse of the Soviet Union and the transition to market economy. To overcome this situation, it will have an important role in developing Georgia as an independent state, developing foreign trade-economic relations and integrating the economy of Georgia with the world economy. Only Georgia has access to the open sea, making deployment by ship, especially into Central Asia, even less feasible. Finally, apart from the vast distances to travel, road and rail transit through the region are further hampered by the poor condition of the infrastructure and the difficult terrain across much of the region [8].

Features and problems of transport development in the South Caucasus. The South Caucasus has a favorable geographic location at the crossroads of Asia, Europe and the Middle East, and the three states have been eager to develop East-West and North-South transport corridors through their territory. Communication links through Iran and Turkey have been developed from scratch, since borders were mainly closed in the Soviet era and little trading took place.

The transport system in Georgia is relatively stable due to various international projects. However, Georgia's road and rail transport systems are, as yet, inadequate to support Georgia's role as a major transit route for trade between Europe and Central Asia. [9] The Caucasus is one of the most natural geopolitical, ecological, religious, ethnic and transport crossroads in the world. The favorable transport and geographical position of the Caucasus is of strategic importance both for the region and for its neighboring and distant neighbors.

This creates great potential for rail, pipeline, air, sea and road transport. However, there are also obstacles to the development of transport: a high level of mountainous terrain, the scale of catastrophic natural phenomena and processes, a high probability of renewed conflicts, an undesirable level of development of communication systems, etc.

The Caucasus is actively involved in the transit of energy. Trade between the growing (Central Asia, Azerbaijan, Iran, North Caucasus) and buyers (Europe) regions, which increases the risk of man-made disasters, as well as on the Black Sea and Caspian waters. The problem of sustainable development of land transport in the South Caucasus is associated with several reasons, the most important of which are:

Historical features of socio-economic development. In recent decades, the transition to a market economy has gradually fostered new and broader economic cooperation. Nevertheless, the influence of the

Soviet period of economic specialization in the Caucasus countries is still important in industry and agriculture. At the beginning of the XXI century, the share of imported products increased sharply, which negatively affected the prospects for the development of local production and contributed to the growth of unemployment.

Agriculture and geography had a significant negative impact. The geographical features of agriculture were associated with the intercontinental belt of the South Caucasus (large settlements) and transport routes that actually destroyed the mountainous areas and created the prerequisites for a demographic crisis.

Modern trends in the development of agriculture. In recent decades, the countries of the South Caucasus have focused on socio-economic processes in the service sector, trade and communications. It is noteworthy that the demand for independent food policy, despite the extensive agriculture, does not provide local needs. Such processes and the situation make it more dependent on localized imported products, which leads to significant changes in the traffic flow [6].

Geopolitical situation and military conflicts. The main obstacles to sustainable development in the South Caucasus are open and limited political conflicts that have led to a number of persistent military conflicts over the past decades. All three regions of the region are in a

state that is reflected in land transport development trends.

Transport Development Trends. The South Caucasus should determine its geopolitical position and natural conditions. It has become an integral part of the Silk Road, a bridge connecting Europe and Central Asia, Russia and the previous Asian transport artery. The Caspian and Black Seas play an important role in the rivers and canals connecting Europe, the Middle East and the countries of Central Asia. Global geopolitical importance is the highway of oil and gas transportation, the intensive use of the history of which has more than one hundred years. Oil and gas flows in the direction East-West (Central Asia-Azerbaijan-Georgia-Turkey-Europe) and North-South (Russia-Georgia-Armenia-Iran). Transportation of pipelines with energy ports increases the risk of environmental safety, which is associated with possible industrial accidents and high seismicity. Increased turnover in the South Caucasus is a prerequisite for pollution of the Black Sea and the Caspian Sea [6].

The analysis of national accounts of Georgia shows that the role of transport and communications in the country's economy is modest compared to other sectors. According to the data of the National Statistics Office of Georgia in 2016, Georgia's Gross Domestic Product (GDP) at current prices was 34028.5 million, GEL. (See table 1. Gross domestic product of Georgia at current prices, million, GEL) [1].

Table 1

Gross domestic product of Georgia at current prices, million, GEL (Georgian Lari);

Gross domestic product of Georgia at current prices, (million, GEL)	2016	2018 (3)
GDP at current prices (million GEL)	34028.5	10586.8
GDP per capita (GEL)	9129.0	2838.8

Source: National statistics office of Georgia

Transport and communications in the sectoral structure of GDP, after industry and trade, are in third place with a share of 10% (See figure 1. GDP by sectors, 2017 y.).

In addition, according to the structure of employment, 10% of the economically active population is employed in the transport and communications sector (See figure 2. Employment by sectors, 2017 y.).

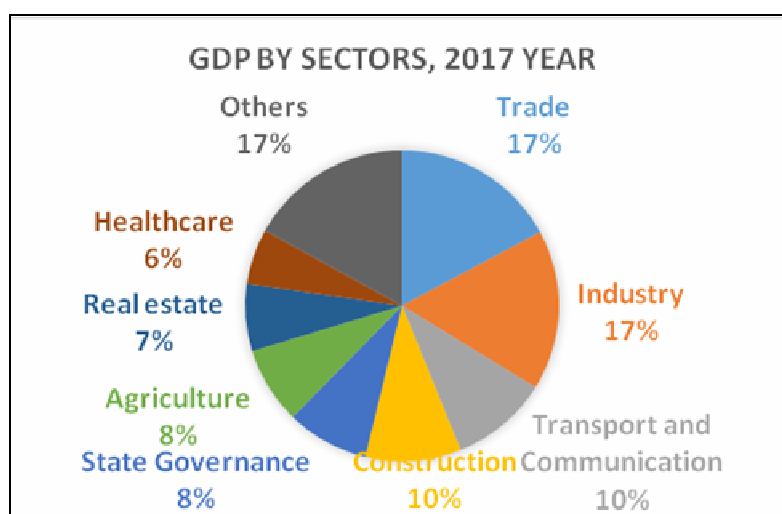


Fig. 1. GDP of Georgia by sectors, 2017 year

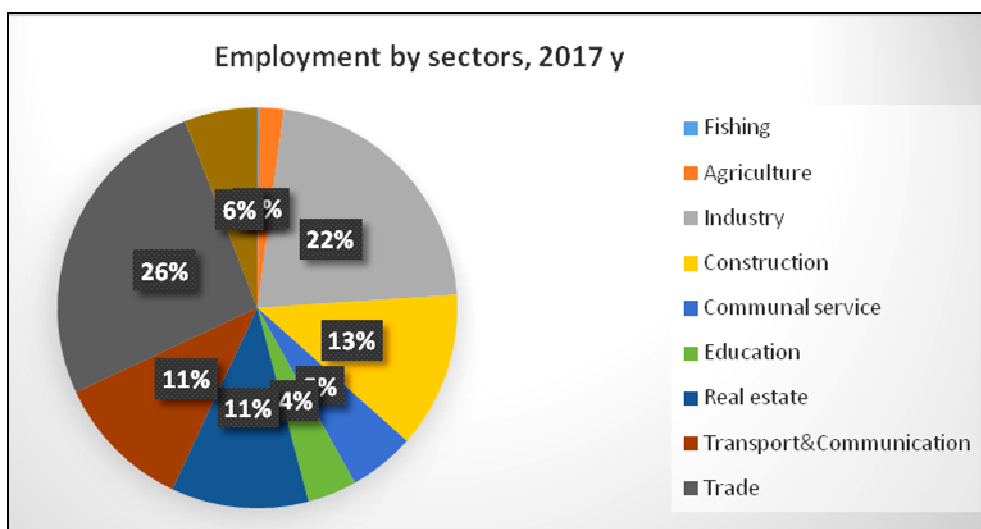


Fig. 2. Employment by sectors, 2017 y.

Analysis of dynamics of the cargo turnover and passenger turnover indicators of the Georgian transport system gives an opportunity to support development of the sector. It is noteworthy that since 2009 the cargo

turnover has been characterized by a downward trend, while the passenger turnover, on the contrary, increases the trend (See table 2. Main indicators of Georgian transport).

Table 2

Main indicators of Georgian Transport, 2017 y.

Year	Cargo shipment, thousand tons	Cargo turnover, mill t / km	Passengers, million man	Passenger, million passengers / km
2001	33241.3	5077.3	364.5	6189.8
2010	48411.4	6848.1	400.2	7418.6
2017	35186.9	3796.1	493.6	9173.0

Source: National statistics office of Georgia

Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and Georgia, of the other part was signed in 2014. Due to the agreement Georgia has to implement several changes in legislation and some parts are about transport as well; [2]

Currently the Law of Georgia on Transport Management and Regulation determines the legal and organizational grounds for management and regulation of transport sphere on the territory of Georgia.

The action of the law applies:

- All subjects in the field of transport;
- All vehicles on the territory of Georgia;
- On the Georgian means of transport in another state;
- Unless otherwise specified by the legislation of that State;
- This law does not apply to rail transport, pipelines and their associated infrastructure.

Functions of Department of Transport and Logistics Development Policy of the Ministry of Economy and Sustainable Development of Georgia:

As for land transport, on April 15, 2011 was created a legal entity of public law - "Land Transport Agency" within the Ministry of Economy and Sustainable Development of Georgia [3].

The aim of the agency is to promote the legislation of Georgia, harmonization with the EU countries legisla-

tion, cooperation with international and public organizations and state structures, as well as to facilitate the development of the sector in its international transport organizations and euro structures.

Methodological approach: For this article, a systematic approach is used as a research methodology. The land transport sector is considered as a single system with internal and external factors in complex and dynamic - continuous time and space. Transport is one of the biggest and most important industries in direct and indirect relation to the successful functioning of different sectors of the country [7]. Presented work is based on the review of literature and analysis of secondary data. Literary and secondary data were collected using manually search and electronic search systems and scientific electronic databases (jstor, EBSCO). The literature and secondary documents were searched in two stages: In the first phase, we found scientific literature and secondary documents on general transport, types of land transport, transportation of Georgia, and in the second stage, to find secondary relevant government documents. For comparison, we have selected the last of the Soviet Union and since 1986 -2018, (periods are chosen to make comparative analysis).

The following key terms were used as search engines: transport, transport types, land transport, Soviet transport, transport, railroad, pipeline, economy, and freight turnover, transport network, etc.

The following types of literature and secondary documents were found:

- ✓ Scientific papers on land transport development;
- ✓ International legal documents;
- ✓ Government documents and statistics of Georgia.

The literature and secondary data obtained within the research have been analyzed using the descriptive, structural and comparative analysis approaches. In analyzing the system of time and space, the advantages are given to Desk Research, which allows the phenomenon to be more visible [4]. Using the method of analysis, the fact is that the study of the documents should be taken into consideration with other factors identified at the same time. This method of research is selected based on the advantages that documentary research is useful for recurring analysis in time, as it shows how the situation evolves over time. In addition, when using the method of analyzing the documents, the importance of the basic criteria (authenticity, accuracy, legitimacy, importance) of the validity and reliability of the document is used.

For a comprehensive study of the situation in the direction of transport infrastructure, in the process of research, the qualitative research method is used - "Polling Experts". Respondents were selected for surveying the experts based on the non-profit target selection, taking into account the pre-defined criteria. One of the methods used in the study is also geographic information systems that are based on a computer-based computer system and provide a good way to track, analyze, and present spatial data. The maps from the visuals presented in the work are drawn up by the author's geo-information systems. Different programs are used for the rest of them: Excel, Illustrator, and Developer of Infographics.

The research database is prepared:

- Legal acts and statistical data;
- Statistical and transport companies internal accounts;
- The survey conducted by the state and non-governmental organizations.

Within the scope of the survey, public information has been requested from different departments of the central government. Based on the obtained information, the priorities of land transport, implemented and planned projects are estimated; Based on the research's goal, analyzes both the latest and the previous years.

In order to achieve the goal, the strategy is as follows: The research will use both quantitative and qualitative research methods. Using mixed research methods allows for enrichment and correct conclusions. After examining the question and the problem, there will be an in-depth study of existing literature that will reveal the various shortcomings in scientific knowledge, tendencies and attitudes to the dominant considerations in the matter. Literature will be obtained from existing scientific electronic and non-magazines as well as international organizations, nongovernmental organizations, archives of the state agencies, from the international financial institutions working on the issue with in-depth interviews with experts working on this issue. Based on the analysis of the information collected, the main circum-

stances will be analyzed, which will help us answer our questions.

The article uses a pragmatic philosophical worldview, which can be explained by the following:

Pragmatic vision is not just a type of research approach - it is important for him to study the problem and use all methods and means; the reason why pragmatic vision is the main approach of research is that this approach allows more freedom and lavishness in the research process. While we talk about the prospects of development of land transport, which depends on a lot of political will, the choice of the country and the decision-makers, etc. It is necessary to be strongly focused on the problem of research and use all means to study it. The issue is quite wide and varied, and for me as a researcher, it is necessary to have full freedom of action, because it may be necessary to use different research methods simultaneously. This must be added to the fact that obtaining information is difficult with the information deficit. Consequently, research cannot be limited to any narrow, straightforward philosophical outlook, which strictly sets one goal and the only way to achieve this goal.

This work is based on the objectives of a certain scientific value, since the study of land transport, besides the practical use of scientific-practical significance. This interest is related to the geo-geological and geopolitical role of land transport, the global and regional (Caucasus, Central Asia, Europe and Middle East), its contribution to the budget, employment structure, infrastructural projects, links terminals, military importance, ecology etc.

Land transport can be considered in the example of Switzerland – in terms of prospects of development of mountainous areas, for which it is essentially a spatial development from Tbilisi and Kutaisi. Study of volume of shipping according to geographical directions. As already mentioned, this issue is first studied at the doctoral level after studying independence. It will be interesting to compare the comparative analysis. Kverenchkhiladze "Georgian Transport". Comparison allows us to fill in empty places in literature. In general, the written work on land transport can be given the following scientific value:

1. Be a research analytical document on the role of land transport as one of the fields of economic geography of Georgia in the country's farm;
2. Be a similar document for determination of its significance in the geo-economy of Armenia and Azerbaijan (separately); As well as for the importance and development of the South Caucasus as an international transit-transport corridor for the assessment of its role (meaning for the neighbors of Central Asia and Eastern Europe);
3. Display the priorities and challenges of the field. Therefore, define a strategy to overcome real problems in order to become competing and competing with other types of competitive transportation.
4. Determine the maximum capacity of the sector development at all levels (locally), immediate and close neighboring countries (regional level) and Eurasian continent (globally) and give us an understanding of these capabilities.

5. Be a research based real-time document for future strategic development of Georgia's land transport.

One of the methods used in the study, as well as geographical information systems for transportation (GIS-T), is a comprehensive information system that

specializes in the introduction, storage, manipulation, analysis and reporting of geographic / spatial information. GIS can be used for transportation issues, including problems. The GIS's four main components are coding, management, analysis and reporting.



Fig. 3. Railroad map of Georgia, as an example for land transport (created by authors)

Overview Spatial Interactions Overview The geographical methodology is of particular importance for transporting the methodology to report spatial interaction between places to assess demand (current or potential) for transport services.

In the paper, it is possible to use the following theories:

- Graphic /diagram theory – is the mathematical branching, which implies network encoding and measurement of their compositions.
- Location Theory – theory, which relates to geographical location of economic activity, is an essential part of economic geography, regional sciences and spatial economy. Location theory answers questions about which economic activities are located and why. It can be compared to the theoretical industrial location of the Webber. Alfred Weber has established the industrial location theory where the enterprise is located where the cost of raw material and final product transportation is minimal.
- Central Place Theory – seeks to find the connection between the cities of the region according to size, volume and geographical distribution. The majority of urban systems have a well-formed hierarchy,

where several centers dominate. Transportation is of utmost importance, given the distinction of the distance, which is based on the idea that the distance requires time, resources and energy to be overcome. The theory of transportation in the territorial structure according to the theory is due to the efficiency of the price.

- Transport corridors as a theoretical approach. They are the accumulation of infrared and infrastructural nodes; their development is related to economics, infrastructural and technological processes. When the process relates to urban development, urban corridors are the city's axis system developed mainly in the wetlands or coastal areas. Many urban areas, such as Boston-Washington and Tokyo-Osaka, have similar characteristics.

Results. In modern conditions, in relation to the scientific-technical revolution, substantial changes in the improvement of transport means followed by changes in transport geography. Social-territorial division of labor between the regions and countries will further increase, according to the scale of economic development. This is primarily reflected on the transport. Therefore, the geography of transport will occupy one of the leading places

in the economic-geographical scientific disciplines, along with the railway transport.

Scientific News:

1. The modern complex geographical study of the land transport system of Georgia was carried out.
2. Based on analysis of literature dedicated to land transport systems and personal experience, the parameters of the performance system of the transport were established.
3. The methodology and the relevant procedures of the complex approach of the research have been developed, through which the comparative analysis of the Soviet period was first conducted.
4. Analysis of the issue of environmental pollution by transport was carried out.

Practical meaning of the work:

- The work will be collected by governmental structures and experts to develop the country's transport policy.
- Conclusions and major findings of the work may be the basis for making various administrative decisions
- The dissertation materials will help the state and departmental institutions to determine the country's socio-economic development

- Results obtained by us may be used for detailed study of road and other land transport systems in other countries and regions for their comparative analysis, classification and rankings.
- Land transport facilities administrations will assist in studying the parameters of competitive fields and planning policy.
- Material can be used in all three stages of study in the study process.

In conclusion: We may say that economic growth and sustainable development of Georgia largely depends on the effective use of its potential as transit territory. The use of transit function for Georgia was set after the collapse of the Soviet Union, since the 1990s.

The development of Georgian land transport in the future should be carried out by reducing state labor costs for the transport and economic process. This can be achieved with the right location between different modes of transport and a sharp improvement in their use. The improvement of technical and economic indicators of the work of land transport is one of the most important tasks for the further development of the economy of Georgia and its spatial arrangement, which is possible to be explored by different methodological approaches.

References:

1. National Statistics Office of Georgia, Gross Domestic Product (GDP). Retrieved from http://geostat.ge/?action=page&p_id=118&lang=geo&fbclid=IwAR2wOuwiske_QEgDAyzT1GgFSQgYxzoZbfnEz96b-kVPSA06NC2v1MKwZKs.
2. Ministry of Foreign Affairs of Georgia, Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and Georgia, of the other part". Retrieved from <http://mfa.gov.ge/%/Association-Agreement.aspx?lang=en-US>.
3. Ministry Of Economy And Sustainable Development of Georgia, "Transport and Logistics Development Policy Department". Retrieved from http://www.economy.ge/?page=departments&dep=8&fbclid=IwAR0qPqABC5nHY2Uvxtk_eOi_5FHWWhic9TZsLSgfZmOhYyK4Gb_L4mo5xIa0.
4. Prior, L. (2003). Using Documents in Social Research. London: SAGE Publications.
5. Roman Kverenchkhiladze; Georgian Transport (Economic-Geographical Survey), Tbilisi; 1986.
6. Elizbarashvili, N. (2018). Main concepts and Problems of Sustainable Development Mountainous Regions (On the example of the Caucasus). In procedeng: International Scientific and Practical Conference «REGION –2018: Optimal Development Strategy». Kharkiv, Ukraine, 215-219.
7. Eddington, R. (2006). The Eddington Transport Study. HMSO/HM Treasury. Retrieved from: https://www.jstor.org/stable/10.7249/mr1598a.16?seq=1#metadata_info_tab_contents.
8. O'Malley, W.D. (2003). Central Asia and South Caucasus as an Area of Operations: *In Faultlines of Conflict in Central Asia and the South Caucasus*, 10-23. Retrieved from <https://www.jstor.org/stable/10.7249/mr1598a.16>.
9. Cornell, S.E. (2002). The South Caucasus: A Regional and Conflict Assessment. Stockholm: Swedish International Development Cooperation Agency (SIDA).

Надійшла до редколегії 15.04.2019 р.

Про авторів:

Нодар Елізбарашвілі – професор, завідувач кафедри регіональної географії та ландшафтного планування, Тбіліський державний університет імені І. Джавахішвілі, Грузія; голова Комісії ландшафтного аналізу і ландшафтного планування Міжнародного географічного союзу, nelizbarashvili@yahoo.com, <https://orcid.org/0000-0001-8537-7728>

Давіт Сідамонідзе – аспірант (суспільна географія), Тбіліський державний університет імені І. Джавахішвілі, Грузія, Davit.sidamonidze@yahoo.com, <https://orcid.org/0000-0002-0386-896X>

Нана Дейсадзе – науковий співробітник (суспільна географія), Тбіліський державний університет імені І. Джавахішвілі, Грузія, ndeisadze18@gmail.com, <https://orcid.org/0000-0003-0561-1719>

Об авторах:

Нодар Елизбарашвили – профессор, заведующий кафедрой региональной географии и ландшафтного планирования, Тбилисский государственный университет имени И. Джавахишвили, Грузия; председатель Комиссии ландшафтного анализа и ландшафтного планирования Международного географического союза, nelizbarashvili@yahoo.com, <https://orcid.org/0000-0001-8537-7728>

Давит Сидамонидзе – аспирант (общественная география), Тбилисский государственный университет имени И. Джавахишвили, Грузия, Davit.sidamonidze@yahoo.com, <https://orcid.org/0000-0002-0386-896X>

Нана Дейсадзе – научный сотрудник (общественная география), Тбилисский государственный университет имени И. Джавахишвили, Грузия, ndeisadze18@gmail.com, <https://orcid.org/0000-0003-0561-1719>