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SOME GEOGRAPHICAL DIMENIONS OF GEORGIA'S SUSTAINABLE DEVELOPMENT

ABSTRACT

Modern Georgia faces many challenges. An important part of them is geopolitical, social, economic and environmental problems. Because of this, the Georgian Geographic School should further intensify action towards integrating its separate fields (directions), geographical research regionalization, and a unified research on sustainable development issues. The rapid dynamics of environmental factors and the interests of the country raise new challenges, which are a major challenge for the Georgian Geographic School. Such tasks include the use of geographic (space-time) research and its methodology to solve sustainable development problems.

Georgia is a unique country. It has many features in the world. These include natural and landscape diversity, unique soil and climate resources, favorable geographical (and not geopolitical) location, traditions of agriculture and food industry, healthy ecological conditions, relatively high share of natural environment, fresh and mineral-thermal water resources, tourism-Recreational potential, et al. Despite these circumstances, many recognized directions for sustainable development are virtually unfulfilled. This situation contributes to the nihilism of the population. As a result, the economic, social, environmental and demographic situation in the regions of Georgia is particularly difficult. This can be remedied by the introduction of special state policies, European legal regulations and regional scientific and geographical surveys.

The article discusses issues related to Georgia's sustainable development, such as: promoting decentralization, preventing negative demographic trends (creating centers of attraction), optimizing the use of nature (green economy prospects), and the need for regional specialization in agriculture.

KEYWORDS: sustainable development, tourism decentralization, landscape services, agriculture development

INTRODUCTION

Modern Georgia faces many challenges. An important part of them is geopolitical, social, economic and environmental problems. Because of this, the Georgian Geographic School should further intensify action towards integrating its separate fields (directions), geographical research regionalization, and a unified research on sustainable development issues. Geography should be properly involved in the implementation of the state's socio-economic or environmental policies, thereby strengthening it's scientific or applied purpose.

We have dedicated numerous publications to the topical issues of Georgian geography [*Elizbarashvili,* 2017; 2018], ways and ideas for solving them. However, the rapid dynamics of environmental factors and the interests of the country raise new issues, which are a major challenge for the Georgian Geographic School.

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Historical-Geographical Issues of Sustainable Development of Georgia

Georgia is a historical-geographical and ethnocultural part of the Caucasus. The peculiarities of the historical and geographical development of the Caucasus natural environment and public relations is a complex, multifaceted and interesting process. The Soviet period was particularly impressive when, on the one hand, ethnic strife and territorial claims ceased, and on the other, the opportunity for independent development of the Caucasian states and pursuit of their national interests. During this period, the population was growing, industry and transport, agriculture and culture evolving, but the interests, demands and initiatives of the local population, foreign and regional trade, international social and economic relations, etc. were largely ignored. The farming of the Caucasian states depended on each other for the distribution of raw materials and manufactured products [*EIizbarashvili*, 2018].

Sustainable socio-economic development of the countries of the region is characterized by some historical problems. For example, Georgia and Armenia have problems with scarcity and lack of energy resources, for the North Caucasus — ethnocultural abundance, for Azerbaijan — water shortages, etc. At the same time, Georgia is distinguished by its forest and water resources, Armenia — by its minerals, Azerbaijan — by its oil and gas supplies, and the North Caucasus by all the above-mentioned goodies and fertile land resources [Landscape planning…, 2008].

The convenient geographical location of the Caucasus demonstrates its strategic importance to the region as well as its near and distant neighbors. It has great potential for rail, pipeline, aviation, maritime and road transport. However, there are some factors that hinder the development of transport: high share of mountainous terrain, magnitude of catastrophic natural events and processes, high likelihood of renewed conflict, undesirable level of communication systems development, etc.

The social stability of the population was practically ensured during the Soviet period, especially in terms of employment, education and health care, minimum utility bills and cheap transport. There was no stratum of socially vulnerable people throughout the country. In the post-Soviet period, the poor, the poor, the unemployed, the temporary, the indebted, and the homeless have emerged. There is a high level of insecurity among the population, which impedes social stability and labor migration. Residents of mountainous areas were in a particularly difficult situation, which led to massive emigration of mountain villages. Currently, the amount of social assistance provided by the Caucasian states is an important part of the countrie’s budgets.

The history of large-scale use of forests dates back centuries, though their massive exploitation dates back to the second half of the 19th century. Forest resources were actively used in industry, transport and foreign trade. Its size was substantially reduced during the Soviet period, when forest resources came mainly from Russia (which also led to the restoration of forests). The situation was partially remedied by the legislative regulation of the Caucasus (mountain) forests, which made them fall into the first category, that is, they had a protective and water-saving function. The situation changed dramatically in the first years of the post-Soviet period, when the forests of the Caucasus became an essential source of population heating, food preparation and income. Specifically, forest groves adjacent to countries with high demand for forest resources, large settlements and roads are affected.

The population of the Caucasus is growing. It reached 25 mn in 1980, 30 mn in 1995, and now 35 mn. The Muslim and Azeri populations of Azerbaijan and the North Caucasus are particularly prominent in this regard, with their share in the Caucasus increasing from 40 to 50 % in recent decades. The difficult demographic situation in Armenia and Georgia is linked to the decline in birth rates, aging populations and migration processes. Population density and geographic location also changed, which had a negative impact on the plains and hillsides.

Contemporary issues of sustainable development of the inhabitants of the region relate to several key issues, including conflict prevention, cultural heritage preservation, infrastructure and communications development, energy and environmental security, etc.

Management and regulation of Georgia's natural environment and use of natural resources are linked to international, local (national), market and traditional **legal mechanisms**. Experience has shown that only their harmonization and optimization can produce a lasting and desired result. Given the historical and geographical specificity of the Caucasus, the experience of the Alps and Carpathian countries is not a direct copy.

MATERIALS AND METHODS OF RESEARCHES

Geographical analysis and synthesis, landscape planning methodology and methods (Landscape planiing…, 2009), statistical analysis and sociological research were used in the preparation of the article. Such methods and methodologies have been widely used in several projects and expeditions carried out in Georgia in 2002−2017. In particular: landscape planning of several protected areas of Georgia (WWF Caucasus office), landscape-ecological assessment of forested areas of Georgia (World Bank), sustainable development of mountain territories and resource management (With Bern University, Switzerland).

RESULTS OF RESEARCHES AND THEIR DISCUSSION

Regional development and decentralization

In recent decades, the imbalance between individual demographic centers (Tbilisi, Batumi and Kutaisi) and the socio-economic development of regions has increased. Such a situation has a negative impact not only on internal migration processes, but also on the social demands and stability of the population. The importance of decentralization is a notable addition, for which the government has developed a similar name strategy to be implemented by 2025.

It is believed that any democratic state's measure of how much power is decentralized, its financial and economic policy, such as the level of the solution is delegated to the local level, how the local people involved in the decision-making process, how they can freely dispose of local artvelobam local resources, how can autonomously carry out the landscape and landscape management services (supported by the European Landscape Convention), how much can be achieved to realize the interests of the local population and local democracy, how to apply the jurisdiction of the local authorities in their e (and only) the assets and natural resources are an important part of the ball and managed independently. How independently local authorities act in deciding on these issues and in exercising their powers.

Thus, decentralization has several key components: political, administrative, economic, social and environmental. Such a classification clearly shows that decentralization is the realization of the principles of sustainable development at the local level.

The situation is unfavorable, and in some cases alarming. The scale of centralization in Georgia is a hindrance to many directions. However, the European Charter on Local Self-Government was ratified in Georgia in 2005. It states that the Council of Europe member states recognize that the protection and strengthening of local self-government in various European countries is an important contribution to building a Europe based on the principles of decentralization and democracy.

In the process of decentralization, the analysis of geographical objects, events and processes becomes essential. Research in this area focuses on regional potential as well as elaborating their socio-economic development plans, considering the interests of the population (through socio-environmental survey), maintaining ecological stability, landscape management and services.

Landscape management is a rapidly evolving scientific-practical field that includes geographers, territorial planning and management specialists, sociologists, urbanists, landscape architects, economists, and others. Its essence is, first and foremost, the maintenance and maintenance of environmental sustainability. This includes developing and managing spatial relations policies that arise locally, regionally, nationally or globally (there are other forms of spatial relationships: rural space — urban space — national space). The goal of landscape management is the harmonious coexistence of the natural and the public environment. Such a goal cannot be achieved

without knowledge of the natural mechanisms that underlie the geographical features of the structure and functioning of the natural environment. Public processes and consciousness, on the other hand, essentially determine the ecological state of the natural environment, so researching the socioeconomic status and behavior of the community is a prerequisite for landscape management. Thus, landscape management is a multifaceted activity involving scientific, practical (administrative) and administrative circles [Sustainable development ...2018].

Landscape management is mainly carried out within an administrative unit, with little regard to the boundaries of natural environment elements or ecosystems. Such an approach still serves the social, economic, environmental or resettlement interests of the local population. Therefore, it is very unlikely that populations represented in different administrative units of identical or similar natural environments "demand" a different requirement. Developing a landscape management strategy is considered successful if it:

1. Promotes the material well-being of the local population;
2. Ensures their maximum and targeted involvement in landscape services;
3. Increases investment attractiveness;
4. Reduces the magnitude of environmental impacts;
5. Promotes decentralization of decision-making;
6. Considers the ethnocultural features of the local population;
7. Maintains the ability (mechanisms) to revise or change the various directions of the strategy in a timely and effective manner.

Landscape service means the combination of actions taken by the local population to maintain its aesthetic and national significance. The appearance of the landscape clearly indicates the living and ecological culture of the population. The contaminated and inaccessible, degraded and depressing landscape is not only a hindrance to local people but also a hindrance to sustainable development. The state mainly cares about the development of local infrastructure, which is meant to support and stimulate the construction of roads, channels, communications, social and environmental facilities. Only the local people can make the landscape attractive and interesting, healthy and safe, protected and clean, which also reflects their psychological mood and socio-economic activity. To this end, the well-designed and purposeful regulation of the facades of buildings, gardens, yards and parks in populated areas of European countries [Sustainable development..., 2018].

The current process of urbanization in Georgia is unacceptable and anomalous, mainly due to the abnormal scales of the city of Tbilisi. Balancing the situation is possible through the co-development of Georgian regions, which is linked to the optimization of educational and other social infrastructure. In our opinion, special attention should be paid to the optimal geographical distribution of higher education. At this point, it is possible to open a branch of Tbilisi State Higher Education Institutions located in the administrative centers of all regions. They can serve as a basis for demographic crisis prevention and reintegration (a similar approach is implemented in the Austrian and Swiss mountain regions). It also considers the economic specialization and traditions of the region, which should determine the profile of the educational institution and the basis for youth interest. An example is the Akhaltsikhe Branch of Tbilisi State University, which has changed the demographic situation in Meskheti for several years. We are prepared for the main directions of such geography.

The second direction of demographic recovery is the so-called. It is related to the **central seat theory**. According to such a theory, settlements or places (in the area of geographical nodes) should be selected that have a "deterrent" function to the population. Migration to such places is possible through the development of the sectors of food (dairy processing, drinking and mineral water, timber processing, canning, etc.) and light (local craft) industries, social and communication infrastructure. A good example of such a center is the Sachkhere district, where there is an increase in population. There is a catastrophic demographic situation in the highlands of the Caucasus, which can be remedied by special economic measures and the interest of the population. For example, nomadic livestock is unbearable for the population remaining in Khevsureti, which does

not exclude the possibility of wintering on the spot in case of development of food industry (milk processing) and economic benefits.

Nature Conservation Optimization in Georgia

Georgia should have its own place in the world, which in our opinion is related to the status of **"green country".** Environmentally friendly environment, high share of protected areas (at least 20%), ecological food, ecological production, ecological tourism and ecological transport — will increase the tourist attractiveness of Georgia.

Global climate change is prominent worldwide, preferably considered when planning rural and resort farming. In recent years, Georgia has practically destroyed agro-climatic and hydrological stations (more than 400 were operational). It is advisable to restore the grid and add at least 100 units to the existing one, where observations should become complex (temperature, precipitation, soils, vegetation). The network should be automated and integrated into a single system, and the information available to all interested parties. Without agri-climatic information, rural and resort farming, and without hydroclimatic information — natural risk assessment and forecasting — would be impossible [Issues…, 1982; *Berouchashvili,* 1995].

It is desirable to create a **special service** for the state, whose specialists will study soil fertility, climatic and hydrological processes on site. They will provide this information to local farmers free of charge and will advise on the opportunities for producing desired and demanding crops [Sustainable development..., 2018].

Most of **Georgia's forests** are desirable for environmental and environmental protection purposes. Forestry should be focused on reforestation, with broad-leaved species being used for reforestation (for water accumulation and forest development). In this way the orientation towards the quality of water resources is presented, which is one of the biggest problems in the modern world. Georgia is covered by geodynamically active landslides (landslides, erosion and mudflows) that need to be prevented through forestry. It is desirable to complete the forest cadastre, landscape-ecological assessment and to identify prospective and unsustainable areas [Natural…,1991; Biological…, 2000; Caucasus…, 2002].

In order to employ local people, it is desirable to set up a **state program for the restoration of forests** at the municipal level. Any place in Georgia has a forestry potential that needs to be restored to serve two purposes: restoring forest resources and forming water resources. Forests should be restored as degraded areas, in the form of Osse windshields and for the development of forestry.

The economic and energy crisis in recent decades has also affected the greening of cities and resorts. Patriarch's call to plant 12 trees a year is fragmented, which is due to several objective reasons: low availability of seedlings, almost non-existent identification of areas to be cultivated, low level of environmental education of the population, lack of state stimulation of greenery. It is desirable **for all educational establishments** to be divided around cities, where students can take care of and rebuild the environment, plant trees, plant ecological areas, compete, and so on.

The concept of defining and using strategic natural resources is elaborated. Among them, the main focus should be on **water** only, as a restored and demanding resource. Other resources (forests, non-ferrous metals, etc.) should only be obtained with high environmental responsibility.

It is also necessary to increase the network and promote the **protected areas**. Here infrastructure can be developed that will connect to the resort. In this case, aesthetically (healthy) and effective (healing) environment will be developed and presented. It is already necessary to popularize this trend of farming in the population of Georgia and the Caucasus region.

Against the background of climate change, it is particularly important to identify winter pastures and determine their resource potential. It is also desirable to link the analysis of livestock development and ecological capacity forecasting to prevent soil degradation in arid and semiarid (Kakheti, Kvemo Kartli) as well as semi-humid (Meskheti, Shida Kartli) regions.

Creating an image of a "green country" is also linked to **waste utilization and recycling**. In addition to be a prerequisite for maintaining a healthy and healthy environment, it can also (as

in developed countries) become a source of used raw materials and cheap energy. It is necessary to promote innovative research and production in this area.

Prospects for sustainable development of individual farming sectors

Energy can be developed in two main ways: by building small HPPs and maximizing the use of alternative energy sources. In Georgia there are great resources in this direction, which will also contribute to the employment of the local population and lower electricity prices. Cheap energy: It will benefit the population, reduce heat emissions, stimulate the use of electric cars, and attract European businesses. The state must play a crucial role in energy policy and independence.

Improved functioning of irrigation and reclamation systems for **agriculture development** should be linked to the process of small energy development. This is especially true in eastern Georgia, where river water should be accumulated as much as possible during spring floods. Such systems should effectively create slab accumulation areas that will return fertilizer to areas affected by water erosion.

From an economic point of view, Georgia's preference for both food and light industry and precision machinery is linked to several factors: a rich and environmentally friendly raw material base, local and regional market requirements, high levels of intellectual resources, and employment prospects for the economically active population.

In order to increase the efficiency of agriculture, there is a need for rapid development of refrigeration farming, which will reduce the country's dependence on imported food products. Promotion of such farming should be a state policy.

The Food industry can be promoted through the development of several tardy but well-forgotten agricultural sectors. They include the production of rice (annual consumption in Georgia 5−7 thou tn.), sugar beet, buckwheat (annual consumption in Georgia 7−10 thou tn.) and olive production. Vakhushti Bagrationi attributes the productivity of some regions of Georgia to the production of rice-cotton and thuringi-orange-olive. It is known that the demand for rice in the world is increasing by 5 mn tn. annually. There have been traditions of its production and export in Georgia for centuries. It was cultivated in plains, river valleys and floodplains in eastern Georgia (Kakheti — Iori valley, other side, Kvemo Kartli — Algeti valley, Ktsia — Khram valley) and western Georgia (mainly Odishi, Guria, Okriba, partially Racha and Lechkhumi). Javakheti and Khevsureti are characterized by high potential of buckwheat production and certain traditions. Orientation on the above-mentioned crops can be a prerequisite for many effects: reduced imports, increased livestock food base and employment of locals.

The magnitude of the scale associated with **olive plantations** and production in Turkey, Greece, Italy and other Mediterranean countries is astonishing. It is an essential export product in these countries. Kvemo Imereti, Samegrelo, Kakheti and Kvemo Kartli hills are characterized by particularly favorable natural conditions for the profitable distribution of olives in Georgia. Olives are a valuable product for both the food and pharmaceutical industries, whose production will replace the bulk of imported edible oils.

The production of forest fruits and berries can also play an essential role in the food industry. In the low and middle mountains, the number of deserted villages grows, with wild fruits, berries, nuts, chestnuts, walnuts and other crops left untreated. There is a great demand for them in the world, the processing of which can become an important precondition for the well0being of the local population.

It is understood that the development of agriculture is mainly attracted to ecological profiles, which are related to the recovery and upgrading of natural fertility of soils. This is also the largest reserve in Georgia. Bearing in mind the stocks of natural sourdough and peat, which are virtually impossible to use. The Ministry of Environment and Natural Resources has promised that we will lobby for the legislative provision of sludge extraction, which we look forward to. It lies in the tens of millions of tons on the shores and seabed of many of Georgia's reservoirs. The main areas of sludge accumulation in Georgia coincide with the geography of the reservoirs, which is mainly represented by the margins of the mountains and the plain. The mountainous areas,

according to Vakhushti Bagrationi, belong to the fruitless and invisible zone. Soils here are known for their low fertility, which can play an essential role in the application of river slime. It is well known that agriculture in many large countries of the world (China, India, Egypt, etc.) is mainly developed in the adjacent rivers and alluvial soils, whose fertility is related to the material brought in by floods in the rivers. A sieve rich in natural minerals has 10−12 times greater efficacy than nail and compost. It has several effects on its extraction and distribution: population will receive free fertilizer (which is a prerequisite for horticulture development), physical-chemical characteristics of soils will increase (mineral composition, porosity, heat, permeability), reservoir efficacy (increase in water volume), and exposure.

Peat accumulation areas are widespread on the Kolkheti lowland and relatively small areas on the volcanic plateau of Javakheti. The total supply of peat in Georgia is almost 10 bn m^3. It can be used in several ways: organic fertilizer, protein-vitamin concentrate (for animal feed), raw material for packaging and chemical production. Any prediction that Georgia's wetlands will not be threatened by adverse climate change processes in the coming centuries is why peat accumulation and use in agriculture are a long-term prospect [Mandjavidze, 2012; Maximov, 2017].

Light industry in Georgia can be developed in several directions. These are: by promoting the production and processing of wool (even to produce yarn), cotton and silk. According to Ivane Javakhishvili, cotton was exported from Georgia even abroad in the 12th and 13th centuries. There is a growing demand for cotton products in the textile and military industries as well as in its waste — livestock production. In this way, local raw materials will promote both its exports and the development of light industry and halt the unprecedented migration of women (and thus the demographic crisis).

Light industry development is the best way to create jobs. Georgia has the potential to do so. Large supplies can be accumulated to obtain leather shoes and silk thread, 5 which will also stimulate breeding.

Tourism is rightly considered to be one of the priority areas of Georgian agriculture, though the focus is on maritime and skiing. In our opinion, the resort of Georgia should be focused on satisfying the interests of the main medical tourism, balneological and balneoclimatic recreation. In this respect our country is unique — it is distinguished by the number and quality of such resorts worldwide. However, most of the balneological resorts are in poor condition. Most of the well-known resorts in the Caucasus region and the post-Soviet countries are virtually destroyed. Their restoration, development and publicity should become part of the state's economic policy.

The second major direction of tourism is its cognitive and hiking species. The use of the protected areas of Georgia is very important for this. It is to be welcomed that the area and amenities of such areas are constantly increasing, which we cannot say about their external advertising. Europe has a keen interest in exploring and exploring the pristine natural environment. Georgia in Europe is distinguished by its share of such environment, which reaches 1/5 of the country's territory. Visiting Georgia's unique natural diversity is of interest to European youth, though offering such tourism is only a very low-cost tour. The mountainous areas of Europe (Alps, Carpathians, Rila, Pyrenees, etc.) are interspersed with tourist trails, where tourists are offered a certain amount of space for a tent or a simple bedroom (often with hay), a hot dish, shower, medicine, guide, tourist equipment and more. Millions of people will be moving to such routes in Europe, which should become a strategic direction for effective tourism development in Georgia.

Sustainable development of Georgia requires further study of issues related to geographical developments and processes. These include the problem of structuring and regionalizing education and science, the problem of new crops (olives, bamboo, etc.), the introduction of new types of tourism, the substitution of imported food products and the use of alternative energy resources, etc.

There is a need for thneedraining in upper secondary schools due to the country's geopolitical location and conflicts. Among the far-reaching results, we consider the use of high school-owned areas for eco-friendly and horticultural purposes, and for students interested in this area.

There is no need to emphasize the need to present environmental problems in curricula and textbooks, which is a prerogative of two scientific directions — geography and biology. It is true that global problems and environmental trends among them are taught in 11th grade. However, we consider it necessary to cooperate with the Ministry of Education and Science of Georgia to create a systematic program for teaching environmental issues in grades 7−10.

CONCLUSIONS

Georgia is a unique country. It has many features in the world. These include natural and landscape diversity, unique soil and climate resources, favorable geographical (and not geopolitical) location, traditions of agriculture and food industry, healthy ecological conditions, relatively high share of natural environment, fresh and mineral-thermal water resources, tourism-recreational potential, et al. Despite these circumstances, many recognized directions for sustainable development are virtually unfulfilled. This situation contributes to the nihilism of the population. As a result, the economic, social, environmental and demographic situation in the regions of Georgia is particularly difficult. This can be remedied by the introduction of special state policies, European legal regulations and regional scientific and geographical surveys.

Currently, there is talk of a replacement of imported products, which may become a precondition for export promotion. The idea is good, though catching two rabbits at a time is almost impossible and a time-consuming task that Georgia does not have the luxury of. State finances (mainly interest-free loans) and legislative provision should stimulate local production, promote the hope and livelihood of the countrie's population.

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