

## Evaluating the Touristic Potential of Georgia's Landscapes

Dali NIKOLAISHVILI<sup>1</sup>, Tzetzilia DONADZE<sup>1</sup>, Giorgi MELADZE<sup>1</sup>, Vazha TRAPAIKIDZE<sup>1</sup>, Giorgi DVALASHVILI<sup>1</sup>, Manana SHARASHENIDZE<sup>1</sup>, Teona TIGISHVILI<sup>1,\*</sup>

<sup>1</sup> Faculty of Exact and Natural Sciences, Department of Geography, Tbilisi State University of Ivane Javakhishvili, #1 I. Chavchavadze ave, Tbilisi, 0179, Georgia

\* Corresponding author, [dali\\_nikolaiashvili@yahoo.com](mailto:dali_nikolaiashvili@yahoo.com), [meladzeg@gmail.com](mailto:meladzeg@gmail.com), [v.trapaidze@yahoo.com](mailto:v.trapaidze@yahoo.com), [titeona@gmail.com](mailto:titeona@gmail.com)

Received on <14-09-2012>, reviewed on <25-10-2012>, accepted on <30-11-2012>

### Abstract

The main purpose of this study is to elaborate the methodology of evaluating the tourism potential of landscapes based on concept of the spatial-temporal analysis and synthesis of natural territorial complexes (NTCs). The object of the studies is whole territory of Georgia. For this purpose, a great number of statistical data, long-term field-work observations in different landscapes, cartographic and fund materials were used. All these data were grouped in accordance with three main factors, such as natural, social-economic and historic-cultural factors. Particular attention was paid to some issues: systematization of data accrued in branch-geographical and statistical sources, referring different branch-geographical data to the landscape units, estimation of main driving forces, functions and the degree of tourism potential, creation of landscape inventory and thematic mapping. The study is based on comprehensive analysis, which enables to define high and low potential of various landscape units and allows comparing the tourism potentials of landscapes with each other taking into consideration integrated parameter based on the multifactor analysis. The main features of uneven territorial distribution of tourism potential of Georgia's landscapes have been revealed. The cartographic base of the work is the Landscapes map of Georgia on a scale of 1: 1,000,000 and 1: 500,000, where the landscape types, subtypes, genera, types of NTCs are shown. All these data were processed by means of GIS analysis, overlay procedures and series of the thematic maps was done.

**Keywords:** *landscape evaluation, touristic potential, Georgia*

### Rezumat. Evaluarea potențialului turistic al peisajelor din Georgia

Scopul principal al acestui studiu îl reprezintă elaborarea metodologiei pentru evaluarea potențialului turistic al peisajului, pe baza analizei spațio-temporale și a sintezei complexelor teritoriale naturale (CTN). Studiul de față vizează întregul teritoriu al Georgiei. Pentru acest scop, am folosit foarte multe date statistice, observații pe teren desfășurate într-o lungă perioadă de timp pentru diferite tipuri de peisaje, precum și materiale cartografice. Toate datele au fost grupate în funcție de trei factori principali, și anume factori naturali, socio-economici și culturali-istorici. O atenție deosebită a fost acordată sistemizării datelor obținute din sursele geografice și statistice, cu referire la datele geografice pentru diferite unități de peisaj, estimării principalilor factori generatori, funcții și potențialului turistic, creării unui inventar al peisajelor și cartării tematice. Studiul se bazează pe o analiză comprehensivă, care permite definirea unui potențial semnificativ sau redus al diferitelor unități de peisaj, permițând compararea potențialului turistic pentru mai multe peisaje, ținând cont de parametrii integrați rezultați în urma analizei multifactoriale. Studiul prezintă principalele trăsături ale repartiției neuniforme a potențialului turistic al peisajelor din Georgia. Baza cartografică a studiului o reprezintă Harta peisajelor Georgiei la scara 1:1.000.000 și 1:500.000, unde sunt figurate tipurile de peisaj, subtipurile, genurile și tipurile de CTN. Toate aceste date au fost procesate cu ajutorul SIG, în final fiind obținute mai multe hărți tematice.

**Cuvinte-cheie:** *evaluarea peisajului, potențial turistic, Georgia*

## **Introduction**

The research of tourism issues has become very important in recent decades throughout the world, therefore many scientific works have been written concerning the tourism issues, such as the research of the tourism potential of the countries or regions and the evaluation of the tourism resources for the development of the countries tourism industry.

But the majority of the works refer to the research of tourism potential of the administrative-territorial unities and not landscapes.

The study of the tourism potential of the landscapes is an important part for landscape studies, especially for the territorial planning. And therefore our work has both theoretical and practical importance.

Studying of landscape potential is one of the basic question of landscape. The potential of the landscapes is the complex of resource means, which is used (nowadays or in the future) for the improvement and protection of habitation environment (Raymers, 1978). With all, it is the complex of peculiarities on which basis the landscape can accomplish the social-economical functions.

Landscape potential a spatial-temporary category determined by natural properties of geo systems, results of anthropogenic influences, forms and directions of use of territory. The landscape can have as natural, also economical potential. They are natural-resource, ecological, residential, tourism potential, etc. (Elzibarashvili, 2005). Tourism potential is focused on the quality of recreational resources, such as climatic conditions, balneological and other water resources, flora and fauna, biodiversity, aesthetic of landscapes, clean environment, also existence archeological and architectural monuments, cultural, sport, health agencies.

As Georgia is distinguished by diverse natural conditions and landscapes and all of these landscapes are characterized by originality and different tourism potential, is very important to evaluate this potential according to every landscape unit. e.g. some landscapes is important by balneological point of view, but another ones is significant as a mountaineering, mountain skiing and alpinism. Though, these diverse situation complicates the possibility of evaluation of tourism

potential and classification landscapes according this potential.

Landscapes' tourism potential includes the wide range of the resources which are used for tourism industry, or there is a prospect of it. Actually, this is the determination of functions that should reflect the landscape's ability to satisfy the tourist needs. The identification of the touristic potential requires the interpretation of several factors such as: environmental, socio-economic and cultural-historical.

The main purpose of this study is to elaborate the methodology of evaluating the touristic potential of landscapes based on the concept of the spatial-temporal analysis and synthesis of natural territorial complexes (NTCs). Our work is focused on the determination of assessed criteria of the tourism potential of landscapes.

Based on the main purpose of this research the following issues are given particular attention:

- Collection and systematization of data accrued in geographic and various scientific agencies;

- Creation of GIS database for the evaluation of tourism potential of landscapes and its thematic mapping;

- Evaluation of scores for each factor according to the landscapes by rating method;

- Evaluation of resource potential of landscapes according to numerical and qualitative indices.

Tourism has become an important sphere of the world economy. In recent decades it increases very rapidly. Nowadays, tourism is the priority sphere for Georgia's economic policy. The modernization of infrastructure is becoming an important priority for the development of tourism. In 2009, 1.5 million person visited Georgia and according to the experts predictions this figure will increase in the future. In these circumstances, it is very important to detect and solve the touristic-recreational problems, and to evaluate the tourist-recreational potential of the new recreational territories.

The research of this issue is very important for Georgia owing to several factors; firstly, Georgia has a very high touristic potential, and secondly, tourism has become one of the key factors driving the Georgian economy. Tourism can gain the vital importance for our country, because it can bring a large amount of income which is significant for the socio-economic development and creates opportunities for the employment. Therefore, each factor that has direct and indirect influence on the

development of the tourism industry should be analyzed. From this point of view, it is very important to examine the touristic potential of different territorial unities. In the first instance, the multifactorial analysis and evaluation are the more important.

The research of tourism issues has become very important in Georgia in the recent decades, due to the high rates that seaside and mountainous resorts are built at, the organization of caves are being processed, the services are being refined. After all these efforts, the number of tourist is increasing, due to the favorable transport geographical location of Georgia, constantly increasing economy of the country, the diversity of the existing natural resources and the distinctive culture and traditions of Georgia. The number of the visitors has increased in recent years. For example, for the 1995-2011 period, the number of visitors has increased 33 times (fig. 1). The highest increase was registered after 2010. In 2011 Georgia has visited 2,820 million persons (Archival data of The tourism and resort department of Georgia, 2010).

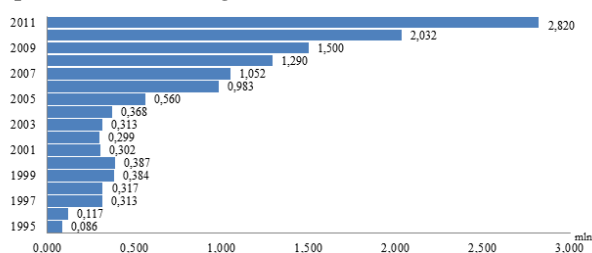


Fig. 1 The dynamic of the arrivals in Georgia

## Object of research

The object of the studies is a whole territory of Georgia. Many factors determine the diversity of the touristic resources in Georgia:

Diverse and contrast landscapes, for example, in Georgia there are fourteen types of landscapes and seventy one genera [Beruchashvili, 1979]. According to the landscape diversity, Georgia is on the 12th place in the world. But with the amount of the landscapes per square km, Georgia is on the first place. In other areas that are the equal in size to Georgia we may find only one type of landscape, while in Georgia we have twenty two, so ten times more than in other regions [Beruchashvili, 2000]. In spite of the fact that Georgia possesses a small territory (69.7 thousand sq. km), it has approximately all the landscape types, represented in the world, except savanas, deserts and rainforests. In Georgia we have approximately all types of

landscape zones, which range from humid, dry-subtropical valleys to high mountain alpine and glaciers zone;

There is the sharply expressed vertical zonation of landscapes. The country's highest peak is mount Shkhara (5203 m), while the lowest point is located between Poti and village Kulevi (1.2-2.3 m below sea level).

The high percentage of the virgin landscapes, which includes the 10 percent of the territory of Georgia [Beruchashvili, 2000]. Nowhere in Europe we can find the virgin landscapes like these, with high distribution of endemic and relict species, with high productivity forest. The maximum amount of phytomass is concentrated in middle-mountain forest landscapes with the prevalence of beech-coniferous forest (Tediashvili, 1984; Nikolaishvili, 2009);

The network of the protected areas, the abundance of natural monuments and sightseeing, rare flora and fauna, with high proportion endemic, relict and fossil species and a plenty of limestone caves;

Different chemical composition and high debit mineral waters, the abundance of balneological (spa) and climatic resorts [Health Resorts of Georgia, 1989; Resorts and Resort Resources of Georgia, 1989];

Wide range of speleological and mountainous tourist objects;

High ecological potential, that in the future can be used for the development of recreational and tourism purposes. The ecological problems in Georgia have a local character and are less than in any other regions of the world [Caucas Environmental Outlook, 2002]. It is very important, that completely changed landscapes occupy only 1 percent of the whole area of Georgia and strongly changed only 19 percent [Nikolaishvili, 2009].

Georgia has one of the world's richest and oldest history, which caused the diversity of cultural and traditional elements and the abundance of archeological and architectural objects, that are important factors for the development of the country's tourism industry. There are 12 000 historical monuments in Georgia, from which 5,000 are under the state protection [Shubladze, 2004]. Some of the existing monuments are included in the list of UNESCO, for example, the antic Georgian capital Mtskheta, as a city-museum, Ushguli assembly, Gelati complex and Bagrati temple.

The ethnographic diversity and traditions are main prerequisites for Georgia's touristic potential. Due to the high mountainous relief and weak links among the historical-geographical provinces, there are diverse traditions in Georgia. For example, Svaneti, Khevsureti, Tusheti, have different traditions, habits, which are sustained till recent times.

### **Classification of Georgia's Landscapes**

Landscape and its classification is one of the fundamental and very important notion of landscape science. It has also very diverse constructive value. It makes possible to evaluate each territorial units according to landscape planning, sustainable use of natural resources, environmental management, etc. Many scientists discuss in their works a lot of questions about landscape and its classification, expressing different point of view. This different opinions are expressed in diverse aspects, such as concept of landscape, principles and techniques of classification. They are quite different notions of landscapes, accepted in the different schools of landscape studies. All of them have advantages and disadvantages, positive and negative sides. As prof. Mark Antrop wrote, considering all these aspects, it is not surprising that the approaches to landscape are very broad and not always clearly defined [Antrop, 2000].

Landscape is understood as a natural complex that is formed under the conditions of a homogenous geological basis, in a single type of dominating relief and homogenous climate, on the background of which the combination of vegetation and soil characteristic to the landscape is formed [Beruchashvili, 2000]. Also, landscape is considered as specific, not-repeatable spatial-temporal unit having own geographical name and concrete location on the map. This means that one landscape exists only in one place for one moment of time. Although, this doesn't means that the same landscapes don't exist anywhere else. Landscape is not a simple unity of natural components. It is a dynamic system with a complex interconnection of natural components, undergoing constant changes due to the influence of natural or anthropogenic factors.

Landscape is represented by a hierarchical units of landscapes, such as class, sub-class, types, sub-types, genera, and species. The biggest unit of landscape is class, and the smallest - species. The

definitions and the main essence of these units is represented in many scientific papers [Beruchashvili, 1989; 1995; 2000; Beruchashvili, Elizbarashvili, Nikolaishvili, 1992]. According to these papers landscape type combines landscapes with common features of climate, hydro-thermal conditions, and it also characterize by one type of vegetation and soil. In contract to the type, landscape sub-type is considered as landscape with minor characters of above-mentioned features.

### **Research on tourism in Georgia**

There are many works in the scientific-geographical literature, that are dedicated to the research of Georgia's touristic resources. These works are focusing on tourism marketing, on the use and management of touristic resources [Kobakhidze, 1971; Pavliashvili, 1991; Khelashvili, 1992; Gabunia, 2005; Touristical-recreational Resources of Georgia, 2006; Barkalaia, 2009]. In many works the factors influencing the development of tourism industry are discussed, there are some elements of the evaluation of the tourism potential of different regions of the country [Metreveli 2004; Shublaze 2004; Gabunia, 2005; Ukleba, 2006; Ukleba, Seperteladze, 1999; Nikolaishvili, Matchavariani, Demetrashvili, 2011]. Despite the fact that resort industry in Georgia exists for many years and inspite of the Georgia's rich and diverse tourist-recreational resources, there is a lack of scientific works, where the touristic potential of landscapes, or their inventory, evaluation criteria and methodological background. Only a few works are dwelling on the complex evaluation of touristic resources, which discourages the process of their systematization.

### **Research methods and initial data**

The evaluation of the tourist potential requires the complex analysis of different factors, from which the following are important: climatic and balneological resources, flora and fauna, the rare relief forms, bio- and landscape diversity, virgin landscapes and protected areas, ecologically clean and aesthetic environment, historical monuments, cultural, healthcare, sport institutions, development of the infrastructure and etc. For the recreational purposes the landscapes with the high aesthetic perception potential of the geographical features and the attractions are important, for example,

diverse relief, high percentage of forests, sandy beaches, waterfalls, canyon gorges and etc.

This diversity makes it difficult to evaluate the tourism potential of different areas due to several reasons: the lack of data and the absence of the entire database; also different approaches and techniques pose difficulties in comparing the multiple-factor and multidimensional parameters.

The factors influencing the tourism potential can be classified in three categories, these are: natural, socio-economic and historical-cultural (Nikolaishvili, Matchavariani, Demetrashvili, 2011). The present work evaluates Georgia's landscapes relying mainly on the natural factors.

For the identification of the tourism potential we have relayed on the elements that determine the recreational resources of the landscapes, virginity of landscapes and less-changed environments. Particularly, resorts and resort places, mineral waters (thermal waters and therapeutic mud), limestone caves, protected areas and rare natural monuments, also the percentage of forests, the strong and high productive forests, virgin forests, representatives of Georgia's Red Book, landscape diversity, density of transport network, areas which were less transformed by anthropogenic activities.

Resolving such issue is quite problematic due to multiple-factor and multidimensional nature of the parameters. Therefore, quantitative methods are often used. Calculation of integral indicators for such issues has been used in leading international organizations of the world. For this purpose normalized value is rather preferable. This method, used in mathematical statistics, allows "redistribution" of equal data in correspondence with equal numerical intervals, in particular within 0-10 or 0-100 etc.

Every parameter was evaluated according to Georgia's landscapes. At the next stage integral parameter was calculated. Besides, it's possible to define share of each parameter in the integral parameter.

The cartographic base of the work is the Landscapes map of Georgia on a scale of 1: 1,000,000 and 1:500,000 (Beruchashvili, 1979; 1983), where the landscape types, subtypes, genera, types of NTCs are shown. All these data was processed by means of GIS analysis, overlay procedures and series of the thematic maps were done.

Different materials (both statistic and cartographic) that exist in branch-geographical and

other institutions and according to these materials the Landscape database of Georgia's touristic resources have been made. The research is also based on the annual data of daily conditions of landscapes (Climate reference books, Archival data of LAB...). The condition of the landscapes means the correlation between the parameters of the structure in a time period when particular input impacts – solar radiation, precipitation, thermal regime (Beruchashvili, 1989).

After the analysis of these data, each landscape has been evaluated by rating method, or it means that scores for each factor (resorts, mineral waters amount, landscape diversity) have been determined.

In order to determine this score, the following procedure was followed:

- the proportion of the parameters have been determined according to each landscape ( $B_{p1}$ ):

$$B_{p1} = X_1 * 100 / X_{max},$$

where  $X_1$  is the number of one certain datum (e.g. number of resorts in cool-temperate humid landscapes which amounts 100), and  $X_{max}$  is the maximum meaning of the datum (e.g. maximum is in warm-temperate humid landscapes which amounts 142);

- the scale of landscape has been determined in decimal system:

$$(B_1) = BP_1 / 10,$$

where  $B_1$  is the number of a certain datum (e.g. number of resorts) is in decimal system;

- after the summarizing the data, the sum number (score) for each landscape have been determined ( $B$ ):

$$B = B_1 + B_2 + B_3 + B_n.$$

By using this sample calculation, we have determined the complex index of the tourism potential of landscapes of Georgia. All data were processed by GIS technologies.

For the identification of the seasonal peculiarities of the tourism potential we have relayed on the concept of spatial-temporal analysis and synthesis of NTCs, which was developed in 1980s at Tbilisi State University under the guidance of Prof. N. Beruchashvili (Methodology of Landscape-geophysical..., 1983; Beruchashvili, 1989).

The advantage of this method for the fulfillment of our aim is that it enables us to determine the favorable daily conditions of the tourism potential for every landscape. By analyzing these data, we

have determined the duration of the favorable conditions for each landscape.

## Main results of the research

**Main factors of the tourism potential of Georgia.** According to the map of the resorts of the landscapes of Georgia (fig. 2), we can assume that the majority of the resorts (65 percent) are located in the mountain landscapes (we have counted 364 resorts and resort places). Particularly, they are located in the middle mountain landscapes, where beech-coniferous forest prevail, and the low mountain forest landscapes with prevalence of beech forest (the exception is the eastern part of Lesser Caucasus low mountain forest landscapes of Georgia - due to their small land area), which have a similar share (21-21percent). The equal number of resorts and resort places are in the colchic low middle mountain landscapes, also in the middle mountain forest landscapes, where the beech species are dominating (the exception is the eastern part of

Lesser Caucasus middle mountain landscapes, due to the small land area). Each landscape contains the 12 percent of the resorts, in high mountain forest landscapes this figure is 15 percent, and in other landscapes it equals to 10 percent.

The landscapes of Western Georgia plain are on the first place among the subtypes of landscapes with large amount of resorts (1-10), where one third of the total amount of resorts are present, other landscapes fall behind this type.

The majority of Georgia's landscapes have high tourism potential. The main argument for this statement is that in only six subtypes of landscape (semi deserts, marshes, high mountain alpine, subniveal and niveal-glacial landscapes) there are no resorts and resort places.

The landscapes possess the different tourist potential. For a certain landscape one type of potential is dominant, for another one the other type of potential has the significant importance and etc. Some landscapes possess only one potential, while some of them have several of them.

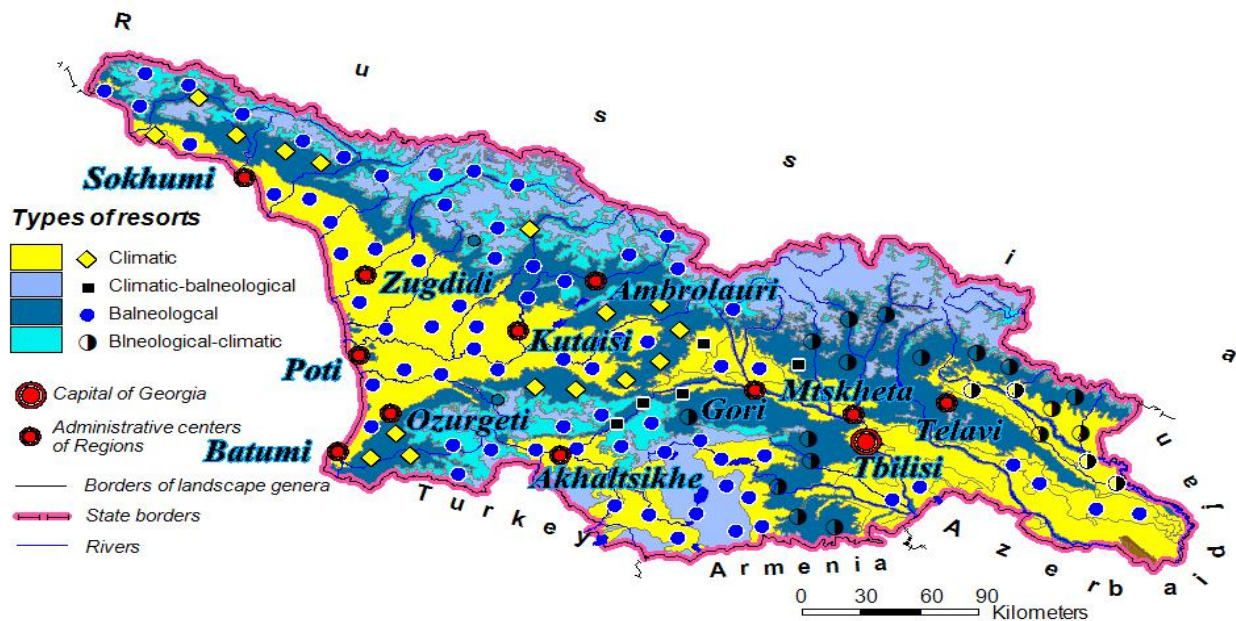


Fig. 2 Resorts and Resort Places in Georgia's Landscapes

Furthermore, one and the same landscape may have one major potential, while for another landscape this type of potential would be minor, for example for kolkhida lowland landscapes, which are located in Western Georgia, the main potential is climatic, because it is equivalent to the whole territory. The minor potential of kolkhida lowland is

balneological, because it is common only for the certain parts of the territory.

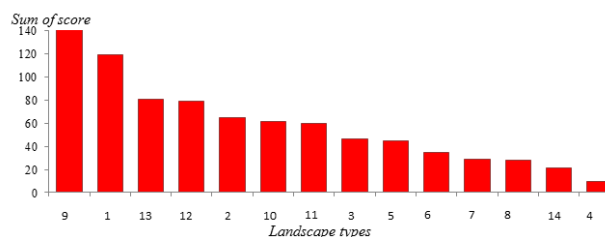
Due to the analysis of the density of the resorts and resort places is more important than the determination of its number. After the calculation of these data, we can see the real situation. The analyses of the resorts density in Georgia lead to the identification of the differences between landscapes.

In average, in Georgia there are 8-9 resorts on an area of 1000 sq.km. The plain landscapes have higher densities (13.5 per 1000 sq. km) than the mountain landscapes (8.6 per 1000 sq. km). The following subtypes have the highest densities: sub-Mediterranean semi-humid landscapes, transition to the colchic forests and mountain semi-humid landscapes transition to the temperate warm, that is logical due to their small area. The high densities are present in the Big Caucasus (Kavkasioni) and the Lesser Caucasus (Mtsire Kavkasioni) low mountain forests landscapes. These landscapes comprise the resorts of Tbilisi, Borjomi and its neighbouring areas. High densities (10 resort places per 1000 sq. km) are present also in the plain and middle mountain beech-coniferous landscapes of Western Georgia, which is an important indicator for the high tourism potential.

The quantitative index is a valuable tool for evaluating the tourism potential all landscapes, but the qualitative one is also very important. Sometimes the existence of a certain resort, or resort place, with high tourism potential, is more important than the large number or just the arithmetical sum of them. Therefore, it is very important to evaluate the qualitative potential of the landscapes, which is much more difficult than the previous task.

**The regional peculiarities of the tourism potential of Georgia.** The warm-temperate humid landscapes, having the maximum score for the tourism potential, are present in both Eastern and Western Georgia and cover an area of 19 thousand sq. km - 27 percent of whole territory of Georgia (fig. 3). It comprises five sub-types of landscapes. This high number is determined by several factors: the high percentage of forests, the large amount of climatic and balneological (spa) resorts, mineral waters with various chemical composition, abundance of natural monuments and sightseeing, landscapes with relatively low anthropogenic influence. The warm-temperate humid landscape comprises 824 springs of the mineral waters of the total of 1448, which have been registered by us, i.e. 57 percent. Here the average percentage of the forest is 79 percent of the whole territory of landscape and the average number of phytomasses is 400-600 t/ha and more. It is also characterized with the large amount of natural sightseeing, but in these landscapes there is a low density of population and mineral waters. The climate of these landscapes

varies considerably, for example, the landscapes of eastern and western parts have significant differences in humidity.



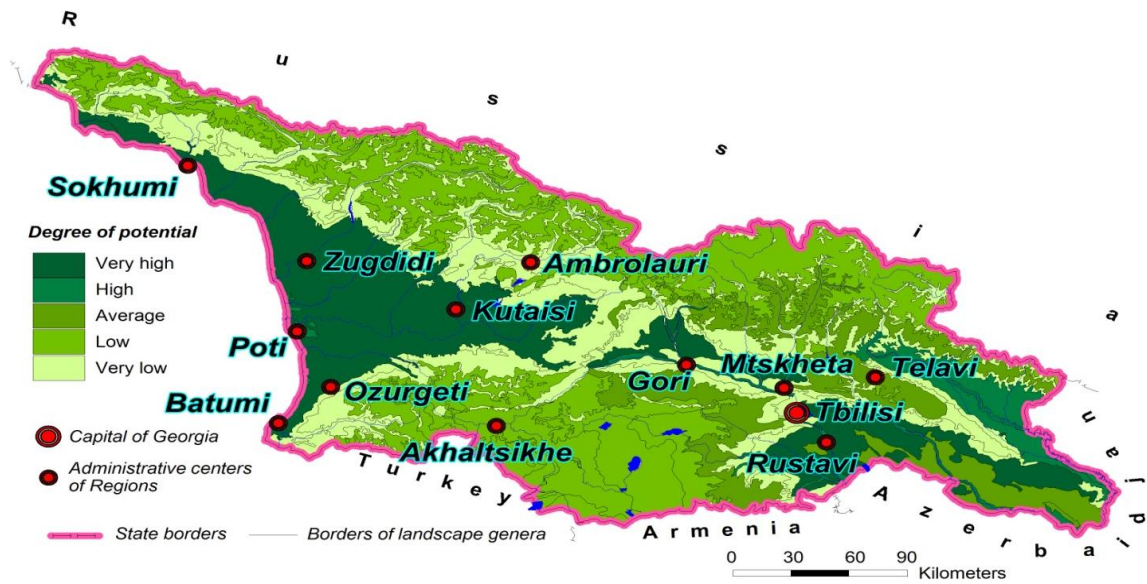
**Fig. 3 Score Rate of Touristical Potential of Georgia's Landscapes**

*Landscape sub-types: 1 - Subtropical humid; 2 - Sub-Mediterranean semihumid; 3 - Subtropical semiarid; 4 - Subtropical arid; 5 - Warm\_temperate semihumid; 6 - Hydromorphic and subhydromorphic; 7 - Subtropical arid; 8 - Subtropical arid; 9 - Warm-temperate humid; 10 - Warm\_temperate semiarid; 11 - Transitional to warm\_temperate semiarid; 12 - Cool-temperate humid; 13 - Cool humid high-mountain; 14 - Glacial-niveal and rocks*

The plain and foothill landscapes have high potential for the development of tourism in Georgia, which are determined by several factors: on one hand, the abundance of balneological and balneo-climatic resorts, and on the other hand, the better developed infrastructure of these areas is a significant socio-economical factor (fig 4). The areas with the above mentioned landscapes present comfortable climatic conditions: the summer is moderate warm and the winter is moderate cold. The Black Sea coast (315 km) possesses a high tourism potential as well, with favorable climatic conditions and wonderful beaches.

The climate on the seaside is subtropical, with mild winters (the average temperature in January is +4 +60C) and prolonged, hot summers. The height of the waves only very seldom exceeds the 3 m. It is also worth mentioning the Black Sea safe ichthyic-fauna.

The landscapes of the sub-alpine and alpine zones are ranked third from the tourism potential point of view. They attract skiers; Abkhazia, Racha, Khevi, Tusheti, and Svaneti have especially favourable conditions for winter sports. Moreover, the diverse traditions, cultural elements, habits, that are determined by the physical-geographical location are another attractive factor for the development of the tourism industry of these areas, which in the past had limited connections with other regions due to the mountainous relief.



**Fig. 4 Touristical Potential of Georgia's Landscapes**

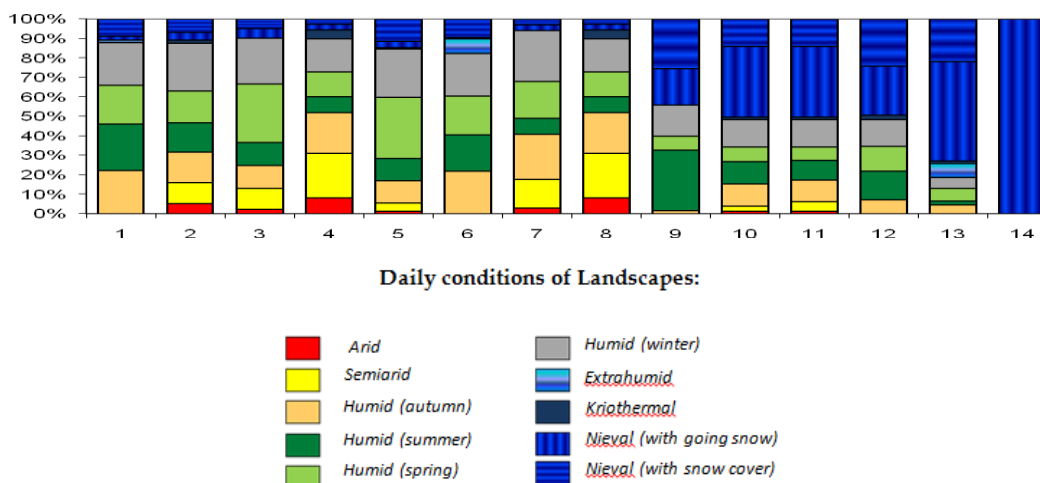
The seasonal variation of the landscape's potential. The landscape potential is the spatial-temporal category that in the first instance is determined by the peculiarities of the seasonal natural conditions. For some landscapes, there are good conditions for tourism all the year long, while in other types of landscape, there are restrictive conditions.

After analyzing the annual dynamic data of the landscape daily conditions, we have concluded that the duration of the favorable conditions for the development of tourism industry varies considerably in different landscapes.

There are landscapes which have perspectives only for the development of a certain type of tourism season by season, for example, the Black Sea coast can provide the stand-ins for the landscapes of the sub-alpine and alpine zone can support tourism only during the warm periods of the year.

The low and middle mountain forest landscapes of Eastern Georgia, which are located in a 10 km radius of Tbilisi-Rustavi agglomeration, can support the tourism industry during the whole year.

For this purpose the cryothermal, arid and hypothermal daily conditions have the less potential. Duration of these conditions is 13% of the whole year duration (fig. 5).



**Fig. 5 Duration of Daily Conditions of Georgia's Landscapes**

*Landscape sub-types: 1 - Subtropical humid; 2 - Sub-Mediterranean semihumid; 3 - Subtropical semiarid; 4 - Subtropical arid; 5 - Warm\_temperate semihumid; 6 - Hydromorphic and subhydromorphic; 7 - Subtropical arid; 8 - Subtropical arid; 9 - Warm-temperate humid; 10 - Warm\_temperate semiarid; 11 - Transitional to warm\_temperate semiarid; 12 - Cool-temperate humid; 13 - Cool humid high-mountain; 14 - Glacial-nival and rocks*



This figure is determined by two factors:

1) It comprises the middle and high mountain landscapes, where the cryothermal conditions have a prolonged character in winter.

2) Despite the fact that the low mountain forest landscapes of Eastern Georgia are 500 m above sea level, they are influenced by the circulation of the arid air masses in summer, having prolonged arid and semiarid conditions. Still, the landscape was less transformed by human activities.

The most favorable conditions are present in the plain and foothill landscapes, which are ranked second from the point of view of tourism potential.

While analyzing of the daily conditions, we have to pay attention to one important circumstance: the same daily condition may be the favorable factor for one type of tourism and not for another.

## Conclusion

Based on the different data, the tourism potential of Georgia's landscapes, as well as some peculiarities of its territorial distribution were determined.

On the base of complex approach and score method, a map of tourism potential of Georgia's landscapes has been compiled. This map allows comparing different landscapes for evaluation of their resource potential according to numerical and qualitative indices;

Using the concept of the spatial-temporal analysis and synthesis of natural territorial complexes (NTCs) the duration of favourable/unfavourable conditions of landscapes have been elaborated. This approach is relevant for the evaluation the touristic potential of landscapes as a spatial-temporal category. So, we can conclude that, the analysis of the landscape conditions is very important to determine the character of the spatial distribution of landscape touristic potential.

## Author contribution

Dali Nikolaishvili - Planning the work and analyzing the main results of work.

Tzetzilia Donadze – Calculation and analyzing integrated parameter.

Giorgi Meladze – Analyzing research on tourism in Georgia.

Vazha Trapaidze - Data collection and systematization.

Giorgi Dvalashvili – Data systematization and creation base map (GIS)

Manana Sharashenidze – Data collection and creation GIS database.

Teona Tigishvili – Creation of thematic mapping and preparing of article finally.

## References

- Antrop, M. (2000). Geography and Landscape Science. *Special Issue: 29th International Geographical Congress*. BELGEO.
- Archival data of LAB for Studying Environmental Conditions by Space Methods of Tbilisi State University.
- Archival data of The Tourism and Resort Department of Georgia. (2010). Tbilisi.
- Barkalaia, B. (2009). Strategic Planning of Tourism, Tbilisi, Georgia (In Georgian).
- Beruchashvili, N. (1995). Caucasus: Landscapes, Models, Experiments. Tbilisi, UNEP-GRID. In Russian.
- Beruchashvili, N. (2000). "Diversity of Georgia's Landscapes and Geographical Analysis of Landscapes Diversity of the World", in Proc. of the First National Conference: Biological and Landscape Diversity of Georgia. Tbilisi, 221-250.
- Beruchashvili, N. (1979). Landscape Map of Caucasus. Tbilisi, Scale 1:1,000,000 (In Russian).
- Beruchashvili, N. (1983). Landscape Map of Georgia. Tbilisi, Scale 1: 500,000 (In Georgian).
- Beruchashvili, N. (1989). Ethology of Landscapes and mapping of Conditions of Environemnt. Tbilisi (In Russian).
- Beruchashvili N., Elizbarashvili N. & Nikolaishvili D. (1992). Landsacpe Science. Tbilisi. In Georgian.
- CEO 2002: Caucasus Environmental Outlook, UNEP/GRIDTbilisi.
- Climate reference books (different years). Leningrad (In Russian).
- Elizbarashvili, N. (2005). Geo ecological Bases of Landscapes Planning. Tbilisi. In Georgian.
- Gabunia, I. (2005). Recreational Districts of Georgia. Tbilisi (In Georgian).
- Health Resorts of Georgia. (1987). Tbilisi.
- Khelashvili, I. (1992). Bases of Tourism Marketing, Tbilisi, Saba Publication (In Georgian).
- Kobakhidze, E. (1971). Tourist Industry and Tourism in Georgia. Tbilisi (In Georgian).

- Methodology of Landscape-geophysical investigations and mapping of the conditions of Natural-territorial complexes. (1983). Tbilisi (In Russian).
- Metreveli, M. (2004). *Tourism and Environment (Principles of Ecotourism)*, Tbilisi, Tbilisi State University of Culture and Art (in Georgian).
- Nikolaishvili, D. (2009). *Spatial-temporal Analysis of Georgia's Landscapes*. Tbilisi, TSU (In Georgian).
- Nikolaishvili, D., Matchavariani L. & Demetrashvili O. (2011). "Methodology of Determining the Agro tourism Potential on Georgia's Example", in *Journal of Tourism Challenges and Trends*. vol. 4, nr. 1, June, 2011. p. 59-76.
- Pavliashvili, N. (1991). *Regional Differences of Recreational Resources of Georgia*. Regional Geography. Tbilisi (In Georgian).
- Reimers, N. (1978). *Natural Management*. In the Paper collection: "Voprosi Geografii", # 108. Moscow. In Russian.
- Resorts and Resort Resources of Georgia*. (1989). Moscow.
- Shubladze, V. (2004). *Georgia and Tourism*. Tbilisi (In Georgian).
- Tediashvili, A. (1984). *Phytomass as landscape-geophysical parameter*. Tbilisi, TSU (In Russian).
- Touristical-recreational Resources of Georgia*. (2006). Tbilisi (In Georgian).
- Ukleba, M. (2006). *Regional Peculiarities of Mountainous Population Settlement and Natural-resource Potential of Georgia*. Tbilisi (In Russian).
- Ukleba D. & Seperteladze Z. (1999). *Landscape Resources and Perspectives of Recreational-territorial Use of Georgia*. Tbilisi (In Georgian)