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RECREATIONAL ZONING OF THE LESSER CAUCASUS

ABSTRACT

In the article fundamental directions of mountain tourism development on the Lesser Caucasus are considered, for winter and summer rest attention is paid. Quantity of tourists rose early with the presence of different landscapes, hospitality of local residents and high level of perfection touristic infrastructure. A high sanative potential (combination of mineral and hot water resources and dense impassable forests on the steep hillsides), an availability of stable snow cover, an absence of strong winds in winter and a moderate summer ensure the successful and effective mountain tourism development in perspective. Apart from Georgia, Armenia and Azerbaijan are considered the part of the Lesser Caucasus on territories of Turkey. Despite the fact that problem of Mountain Karabakh has not been fully solved in our days, in this region tourism is possible. Different factors of tourism development (landscape-aesthetic, hydrological, glacial, orographic, factor of transport accessibility, ect.) are reviewed. The opportunities of enlargement mountain and coastal territories, an establishment of new health resorts and rest areas, the revival and improvement of old touristic objects are described. All types of mountain rest are characterized: mountaineering, climbing, sports and walking, speleological, sanative, water, walking and large-scale. The principal routes and very interesting objects are indicated for every rest variety. Nature protection areas and principal rules regulating visits them was described. The recommendations for solving interaction problems of recreation with other varieties of nature using are made. Mapping produce in ArcMap 10.3.

KEYWORDS: mountain tourism, national park, transport availability, winter and summer vacation

INTRODUCTION

The Lesser Caucasus is a mountain system from ranges, volcanic highlands and plateaus. This system extended on territories of Georgia, Turkey, Armenia and Azerbaijan, included boarding ranges of South Caucasian highland surrounded from north and north-east Javakheti-Armenian province and eastern hillside of Zangezur range.

Aragats mountain (4090 m) in Armenia is the highest summit of system and the final point of the spur of the same name. Summits more 3700 m (for example, Gyamysh, 3724 m) arrange on Murovdag range. The Lesser Caucasus begin on humid subtropics about Batumi and extend by continuous axial chain from north-west to south-east before Karachuch mountain (633 m) on 500 km.

Glacier landforms are typical for the highest ranges (Murovdag, ect.) and found on western ranges less than 3000 m. Snow line pass on 3670 m on average. Aragats range is characterized by significant glaciation.

Floods of lava has formed structural terraces in some transverse valleys (Terter, Debet river). But volcanic forms of relief spread marginally (except for Borjomi – Bakuriani area and basin of Khrami river). Endogenous processes and erosion created canyons of rivers. In so doing underground sources released. Most of them were high-mineral waters (thermae), because volcanic

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activity in columns of this highlands not extinguished.

Kura River cleave basic western highland and thermae go out from clefts of mountain rocks on both coasts of river from Vardzia to Borjomi. Hillsides of Meskheti range (Abastumani, Zekari, Sairme) are known for their abundance of mineral waters. On the south-eastern hillsides are located mineral waters sources: Bjni, Arzni, ect.

Tourism on South Caucasus begin its development in 1801 after addition of territory to Russian Empire. Health resorts of Georgia received first tourists; among them were the members of Romanov family. After Great Patriotic War the development of sports tourism has begun, also research of mineral waters and curative muds justified the arrangement of new balneal health resorts. However, routes in southern Georgia were the most popular.

In 1990s after break-up of USSR and destabilization of politic situation quantity of tourists significantly reduced, conflict in Mountain Karabakh continue in our days. But in other areas of the Lesser Caucasus military actions proved by not long and did not lead to disastrous consequences. Opening of boundaries allowed to organize areas of rest on previously inaccessible territories, to increase quantity of tourists from foreign countries and to develop touristic infrastructure with the help of European, American and Turkish specialists.

MATERIALS AND METHODS OF RESEARCHES

We have developed a relief map of the recreational areas of the Lesser Caucasus as a source material for the geographical basis (fig. 1). To design the map, the border of the area was initially introduced to the Global Mapper 19 program and a digital elevation model of the area was obtained. Then, using the ArcGis 10.3 program we obtained the Digital Terrain Model (DTM), and utilizing it the relief map of the territories of the Lesser Caucasus with recreational zones was drawn. The contour interval of the relief map is 400 m.

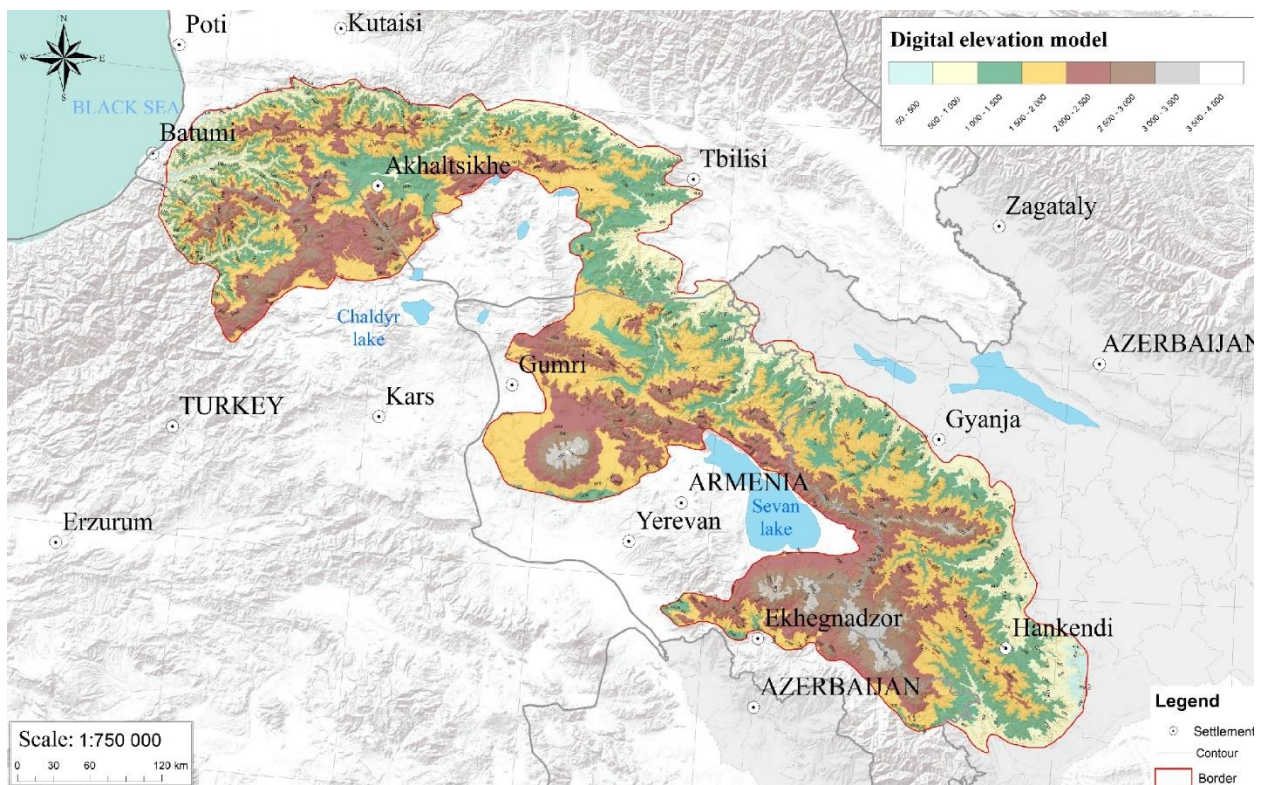


Fig. 1. Relief map of recreational zoning of the Lesser Caucasus

Recreational zoning is one of variety of complex zoning when territories are identified at some factors because a favorable combination of groups of factors is required for organization of mountain active rest [Melik-Pashaev, 1975]. Natural factors influence of choice of a particular species of recreation and socio-economic factors determine the quality of touristic infrastructure. Single methods of recreational zoning are absent in our days. The initial criterion in this work was the specific weight of tourist-sanative sector of regional economy and availability of natural and historical objects (zoning of Azerbaijan [Museibov, 1961], zoning of Georgia [Kobakhidze, 1978; Beruchashvili, 1988], zoning of Armenia [Shaginyan, 2004]).

Differentiation of the territory according to the types of recreational use is the type of applied zoning that should be based on physical and geographical zoning [Fedina, 1973]. The dernier develops a scientifically based scheme which takes into account differences between complexes and reflects the objective existence of units in nature. Certain targeted types of zoning may partially change this pattern and give each designated area a specific name and purpose.

The work on zoning the Greater and the Lesser Caucasus and individual territories of mountain systems was analyzed. Maps from the tourist Atlas (1989) were used as initial cartographic materials for the thematic content of the created map. In Republic of Adygea [Bormotov, 2003] degree of openness and prospects for development of areas were among the district-forming features. When the zoning of the Greater and the Lesser Caucasus [Butrina, 2011] the organization of spa treatment, health-improving seaside and educational recreation was considered. Zoning for the development of extreme tourism was also studied [Proskurin, 2015].

Sports tourism, hunting and fishing are available in many areas and the influence of glacial conditions on the recreational development of the mountain system is insignificant because in the Lesser Caucasus the average height of the mountains is 3700 m. The hydrological factor has a great influence on water and health tourism.

RESULTS OF RESEARCHES AND THEIR DISCUSSION

There are 7 recreational areas within the Lesser Caucasus. They differ in terms of natural conditions and the quality of tourist infrastructure (fig. 2).

Batumi — Bakuriani area unite Meskheti, Shavsheti and Trialeti ranges. They stretch in the latitudinal direction from the Black Sea coast to Tbilisi. Landscape-aesthetic, climatic, hydrological, orographic and glacial factors are fundamental. Subtropical climate of Ajaria pass to cold climate of alpine meadows [Milkov, 1976].

The larger part of mountains is covered by dense forests. The landscape of the middle mountains resembles the Carpathian because rocks are scattered on wooded hillsides. This is what the mountains look like on the way from Borjomi to Bakuriani [Kobakhidze, 1978]. Sports and walking tourism and mountaineering are principal varieties of summer rest. Many tourist routes are organized on the territories of national parks Mtirala, Machakhela, Kintrishi and Ispani reservation.

This region in period of the Union of Soviet Socialist Republic was inferior in the number of tourists to the Greater Caucasus but was known for area of rest on territory of Borjomi – Kharaguli national park. There are many climatic and balneal health resorts here. Since 1980s rafting in Ajaris – Tskali, Machakhela, Machakhlistkali, Chorokhi, Kintrishi (these 5 rivers are in Ajaria), Kura (on this river in Batumi – Bakuriani area are 2 routes: Quabiskhevi – Borjomi and Chitakhevi – Borjomi) won huge popularity.

Ski holidays are beginning to develop in western Georgia. Currently, work is underway to restore the resort Gomis Mta are likely to be revitalized and a cable car is being built to the Black Sea. But some ski resorts are located in eastern territory of Ajaria in Shuakhevi and Khulo (<http://gobatumi.com>). In 2011 first winter season was open in Gomarduli. Also ski resorts began to work about villages Kedlebi, Danisparauli, Goderdzi.

Bakuriani is famous than ski resort. In 2016 Mitarbi mountaineering route was open after 30-years break. Government of Georgia approved the plan for a resort location of Didi Mitarbi.

Ice climbing festival takes place near Gorijvare and Khomle. There are many mountaineering routes in the Tedzami river valley.

Artvin-Vardzia area minded on the southern hillside of Meskheti range and embrace Shavsheti, Arsiani and Erusheti mountains. Kolkhidian forests are sparse or replaced by thickets of Georgian oak and pine-tree. To the East the forests are getting poorer.



Fig. 2. Map of recreational zoning of the Lesser Caucasus

Orographic and hydrological factors are fundamental. Tourism is just beginning to develop on our area of Georgia and in adjacent territories of Turkey [Shaginyan, 2004]. Rafting routes on Chorokhi, Altiparmak (Barkhali) and Kura River (Mirashkhani – Mtogvi, Vardzia – Pia, Khertvisi – Aspindza) are the most popular. There are grounds for hunters and fishermen on the territory of Turkey, several climbing routes are equipped. A cave complex of XII c. is located in Vardzia. Sanative tourism is feeble, mineral waters are numerous in Aspindza and Uraveli [Berford, 2010].

Tsalka – Dmanisi area minded on the southern hillside of Trialeti range. In addition to broad-leaved forests, there are also pine-spruce. High mountains change by long alpine meadows and semi-deserts.

Despite the more arid climate, there is also a natural richness. Orographic, landscape-aesthetic and climatic factors are fundamental. In 2013 canyons of Dashbashi and Birtvisi rivers were declared by territories of nature protection. First object formed in basalt lavas, the canyon contains natural and artificial caves. Second object named by “stone labyrinth”, mountaineering and climbing trips are made in the canyon. Algeti reservation with historical and natural attractions is located about Manglisi. On Algeti lake fishing is allowed, on west there are hunting grounds. Khrami river is used for rafting (in Marneuli area).

But in another territory of Tsalka – Dmanisi area environmental regulations are severely

violated in the presence of a huge recreational and historical and cultural potential. The fault is gold mining about Kazreti. Therefore, tourism is not developed in this territory.

In North Armenian area landscapes form in more continental environment since the mountain system extends to the southeast. The alpine meadows and mountain forest landscapes are predominated. Some of the peaks rise much higher than western share of the Lesser Caucasus and had the glacial forms. Many peaks and sides of gorges are rocky, for example, Aragats. So orographic, climatic, glacial, hydrological and landscape-aesthetic are fundamental factors.

A chief symbol of winter rest in Armenia is Tsakhkadzor ski resort. A short distance to Yerevan is one of the advantages. In this area ideal conditions for preparing for sport competitions are guarantee in any season, the weather at the health resort is rarely abnormal. Not far from Tsakhkadzor ski resort Sevan are located. The height difference does not exceed 400 m, but number of tourists is large in summer because lake Sevan is not far away (<http://www.otdyhatei.com>). In North Armenia near the border with Georgia in 2019 ski resort Ashotsk was opened.

Sanative tourism is fundamental in summer. Ankavan, Arzakan, Dilijan and Ijevan are the most famous health resorts. Some rivers (Dzoraget, Kassakh, Debed) are suitable for rafting. Also mountaineering gain popularity. When mountain trails dry up in July and August it's time to make the ascents. In winter only experienced climbers can climb because deep snow and snow-ice fields make it dangerous to climb without skis.

Dilijan national park is the most famous territory of nature protection of Armenia. In this area are located some hiking routes and caves in which the animals live, also tourists can collect mushrooms and berries (<http://www.itinari.com>).

Ijevan is the most important health resort in North Armenia. The hills with dense forests very similar to alpine meadows. The mild climate contributes to excellent rest at any time of the year, so the flow of tourists never stops. In Ijevan mineral water sources are numerous and 10 000-year-old caves are located. Many rivers of North Armenia are suitable for fishing, hunting grounds are located.

However, some types of tourism are restricted due to adverse anthropogenic events. The columns of basalt high of 100 m are located in many canyons. In 2012 were lengthy discussions on the impact of rock climbing on the ecological situation on basalt pillars. Jumpers, which is driven to descend, were recognized as a threat to the ecology of unique areas.

In West Azerbaijan area Sevan (Shakhdag) and Murov-dag ranges are extend. On its northern hillsides the forests are deciduous, southern hillsides are covered with mountain steppes and in the rock summits alpine meadows are located [*Museibov, 1998*]. On hillsides of Murov-dag rocky range many gorges.

Orographic, hydrological and landscape-aesthetic are fundamental factors. In West Azerbaijan area sanative tourism is develop. Ajikend, Dashkesan, Khoshbulag and Naftalan (last town is famous by curative mud) are fundamental balneal health resorts. Some mountaineering bases are located about Ajikend.

The mountains around the Dashkesan are known as the most beautiful pasture of South Caucasus. On the territory of the district there are numerous and various interesting objects despite the fact that the tourist infrastructure is not developed. Dashkesan was built on the site of a temporary geological settlement, development of the iron ore deposit has begun about town, so excursion «The marble mountains and iron monsters» are carry out. Near the Khoshbulag there is a lake where tourists can fish (<http://needguide.ru>). The ascents on Goshgar summit (3361 m) are popular, many underground water sources.

However, the most famous object of West Azerbaijan area is Geigyol national park. The area used to be a nature reserve, but in 2007 tourist were able to visit this territory. Water in the Geigyol lake is a fresh and look by light blue so the lake got this name. 8 large lakes are located in national park, among them Maralgyol, Zyalilgyol, Garagyol.

Southwest area located on the territories of Armenia and Azerbaijan. Since 1990s the border between the states has been closed. Many highways have not been restored after military

actions.

Continental climate is a specific feature of the Southwest area. Semi deserts are replaced by mountain steppes and arid woodlands. There is no mountain-forest zone. Climatic, hydrological, glacial and factor of transport accessibility are fundamental.

Tourism is developing at an intensive pace despite harsh natural conditions and violations of political stability. Kelbajar and Istisu are the most famous health resorts of Azerbaijan. There are two lakes (Alagyoller and Zalkha) and several caves in the vicinity of Kelbajar, popular collection of medicinal herbs. In Istisu mineral water sources are numerous, the resort area is not inferior in quality to Karlovy Vary.

In turn, Armenia is famous for ski resort and mineral waters of Jermuk area. There are several routes for active tourism on the territory of the country. For example, Vorotan river canyon is suitable for sports and walking, speleological tours and rafting.

Karabakh area is east outskirts of the Lesser Caucasus. Landscapes are formed in more continental conditions since the mountain system extends to the Southeast. The relief consists of extinct volcanic cones which rise high above the plateau.

Military actions periodically break out. However, a definite work of tourism development is spent. Orographic, landscape-aesthetic, hydrological and factor of transport accessibility are fundamental.

In Mountain Karabakh 13 hiking trails for sports and walking are located. Hunot reservation is the most center of hiking. In reservation some routes for tourists with different interests were created. In Askeran area Azokh cave is located and mineral water source are numerous (for example, Aigestan healing spring). Lachin area is suitable for mountaineering, climbing and rafting (routes on Terter river are the most known). Kar-Kar river canyon about Shusha is not high-altitude (by the standards of mountaineering), but fascinates with its beauty and majesty [Mekhbaliev, 2009]. In the forests of area Agdere hunting is allowed.

Created map can be useful for people who want to spend vacation on countries of South Caucasus and for local residence who provide leisure activities at mountain. Types of tourism practiced in poorly known areas can reduce excessive recreational load on Black Sea coast, Borjomi – Bakuriani and Tsakhkadzor areas. In the work hydrological factor of tourism development was analyzed for the first time, climatic factor and factor of transport accessibility was described by extended (table 1).

Table 1. Recreational zoning of the Lesser Caucasus

| No | Recreational area | Fundamental factors | Varieties of (mountain) tourism |
|----|--------------------|--|---|
| 1 | Batumi – Bakuriani | Landscape-aesthetic, climatic, hydrological, orographic, glacial | Sanative, ski mountaineering, water, mountaineering, sports and walking, commercial |
| 2 | Artvin – Vardzia | Orographic, hydrological | Water, commercial, sanative, mountaineering, sports and walking |
| 3 | Tsalka – Dmanisi | Orographic, landscape-aesthetic, climatic | Climbing, mountaineering, speleological, water, commercial |
| 4 | North Armenian | Orographic, climatic, glacial, hydrological, landscape-aesthetic | Mountaineering, sanative, water, ski mountaineering, speleological, commercial |
| 5 | West Azerbaijan | Orographic, hydrological, landscape-aesthetic | Mountaineering, sanative, sports and walking, commercial |
| 6 | Southwest | Climatic, hydrological, factor of transport accessibility, glacial | Mountaineering, sanative, water, climbing, commercial, ski mountaineering |
| 7 | Karabakh | Orographic, landscape-aesthetic, hydrological, factor of transport accessibility | Mountaineering, sanative, water, climbing, commercial, sports and walking |

Mountain tourism not very demanding of comfort, in the Lesser Caucasus many types of outdoor activities among which there and more new ones develop very intensively. In order to region retain the attractiveness for tourists, should to organize new routes in the most available territories, to advertise touristic objects intended for specific purposes (for example, certain types of mineral waters suitable for the treatment of specific types of diseases). Organization of new routes in national parks introduces tourists to environmental etiquette.

Plans of regional and local development of the Lesser Caucasus should be built taking into account the seasonality of tourism development and state of environmental and political stoppages in different parts of mountain territory. In our days it is important to use the experience of foreign countries in organization of mountain tourism.

Cartographic method for assessing natural and socio-economic conditions consists in displaying information for vacationers and recreation organizers on the map. The use of estimates is appropriate there the estimated objects are numerous and need to be ranked according to the degree of their development. It is very important to conduct mapping in GIS, new applications are added to them every year, so tourists are increasingly interested in little-explored territories. Map creating in the future allows you to conduct other, more complex types of assessments for the economic efficiency of recreational development.

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