

DOI: <https://doi.org/10.36719/2663-4619/124/146-150>

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Assessment of the Tourism–Recreation Potential of the Landscapes of the Lesser Caucasus

Abstract

The Lesser Caucasus Mountains represent a complex mountainous system that occupies a leading position in the physical–geographical regionalization of Azerbaijan. This area is distinguished by its diverse relief, rich geological structure, climatic variability, multifaceted landscape complexes, water resources, and unique biological diversity. At the same time, the region stands out as one of the most favorable tourism and recreation zones of the country due to its natural aesthetics and therapeutic resources. In the context of Azerbaijan’s tourism policy—particularly during the restoration and development phase of the Karabakh and the Eastern Zangezur economic regions—the assessment of the actual and potential recreational capacities of the Lesser Caucasus landscapes holds significant scientific and practical importance. This article provides a comprehensive analysis of the geographical characteristics, geological structure, climate, landscape features, research methods, and tourism–recreation potential of the Lesser Caucasus, ultimately substantiating the region’s high value as a major tourism destination.

Keywords: *The Lesser Caucasus, landscape, tourism, recreation, assessment*

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Kiçik Qafqazın landşaftlarının turizm-rekreasiya potensialının qiymətləndirilməsi

Xülasə

Kiçik Qafqaz dağları Azərbaycanın fiziki-coğrafi rayonlaşmasında aparıcı mövqe tutan mürəkkəb dağlıq sistemi təmsil edir. Bu ərazi müxtəlif relyefi, zəngin geoloji quruluşu, iqlim dəyişkənliyi, çoxşaxəli landşaft kompleksləri, su ehtiyatları və unikal bioloji müxtəlifliyi ilə seçilir. Eyni zamanda, region təbii estetikası və müalicəvi ehtiyatlarına görə ölkənin ən əlverişli turizm və istirahət zonalarından biri kimi seçilir. Azərbaycanın turizm siyasəti kontekstində, xüsusən də Qarabağ və Şərqi Zəngəzur iqtisadi rayonlarının bərpası və inkişafı mərhələsində Kiçik Qafqaz landşaftlarının faktiki və potensial istirahət imkanlarının qiymətləndirilməsi mühüm elmi və praktik əhəmiyyət kəsb edir. Bu məqalədə Kiçik Qafqazın coğrafi xüsusiyyətləri, geoloji quruluşu, iqlimi, landşaft xüsusiyyətləri, tədqiqat metodları və turizm-rekreasiya potensialının hərtərəfli təhlili təqdim olunur və nəticədə regionun əsas turizm məkanı kimi yüksək dəyəri əsaslandırılır.

Açar sözlər: *Kiçik Qafqaz, landşaft, turizm, rekreasiya, qiymətləndirmə*

Introduction

The Lesser Caucasus Mountains cover the western and southwestern parts of Azerbaijan, encompassing the districts of Shamkir, Gadabay, Tovuz, Dashkasan, Goygol, Ganja, Kalbajar, Lachin, Shusha, Qubadli, and Zangilan. The region is characterized by a highly variable altitudinal range, beginning with 600–800 meters in the foothills, rising to 1500–2500 meters in the mid-mountain belt, and reaching 3000–3700 meters in the high-mountain areas. The highest summits of the Lesser Caucasus include Gamishdag, Gizilbogaz, and Kepez. The relief structure consists of a combination of massive high-mountain blocks, deep gorges, and elongated valleys, forming a landscape mosaic that significantly contributes to the diversity of natural scenery and tourism routes (Goychayly, 2010).

The Lesser Caucasus is a complex mountainous system formed by the marginal ranges of the South Caucasus Upland. It includes the Shahdag, Murovdag, and Karabakh mountain chains. From a physical–geographical perspective, the Lesser Caucasus is not limited to these ranges; the eastern slopes and secondary branches of the Zangezur Range also represent an integral component of its natural–geographical continuum.

Research

Geologically, the Lesser Caucasus features a complex and diverse structure. The region constitutes part of the Alpine–Himalayan geosynclinal belt and includes various tectonic zones such as the Karabakh folded zone, the Zangezur and Murovdag massifs, the Somkheti–Deller zone, and several other tectonic blocks. Rocks belonging to the Paleozoic, Mesozoic, and Cenozoic eras are widely distributed. The region is also rich in mineral and ore deposits of national economic importance, including copper, molybdenum, gold, marble, and limestone, as well as valuable mineral water sources such as Istisu, Turshsu, Zem-zem, and Badamli. Their therapeutic properties create favorable conditions for the development of sanatorium-resort activities (Eminov, 2004; Fennel, 2008).

The area, characterized by a multilayered and intensely folded mountain structure, contains thick (over 6 km) Upper Cretaceous and Paleogene volcanic-sedimentary formations. Intense folding and numerous fault lines are evident in both the northern and southern parts of the mountain system, sometimes causing overthrusting onto adjacent structures. These features largely explain the fan-shaped configuration of the Lesser Caucasus. The geological structure is dominated by Mesozoic folded formations and intrusive bodies. Ancient planation surfaces also played an important role in shaping the relief. These surfaces contrast sharply with steep slopes and deep valleys, indicating relatively recent uplift phases. Above the remnants of the planation surfaces rise rocky, sharply contoured summits and relic landforms bearing traces of ancient glaciation (Coğrafiya Blogspot, 2015).

Although high-mountain glacial relief forms are typical of the upper parts of the Lesser Caucasus, glacial remnants can also be found in some western sectors even below 3000 meters. Climatic conditions vary in accordance with the region's vertical zoning. The mid- and high-mountain belts receive higher precipitation and exhibit lower temperatures, reflecting classic altitudinal differentiation. Local wind systems, such as valley and mountain breezes, are widespread in the region (Pirmirova, 2011; AZƏRTAC, n.d.).

Climate constitutes one of the principal factors shaping landscapes and influencing tourism dynamics. Temperature and precipitation vary according to vertical zonation. Foothill areas are dominated by semi-desert and dry steppe climates; the mid-mountain zone is characterized by moderately cold conditions, whereas the high-mountain belt exhibits a cold mountain-stony climate. Annual precipitation ranges from 400 to 1200 mm, with the highest values recorded in the upper sectors of the Kalbajar and Murovdag massifs. Climatic conditions create highly favorable regimes for summer tourism, mountaineering, winter tourism, and skiing. In many high-mountain areas, snow cover persists for 150–180 days, significantly enhancing the potential for winter sports.

Thus, the Lesser Caucasus mountain system demonstrates exceptional diversity in its geological evolution, relief forms, soil–vegetation cover, and climatic conditions—factors that distinguish it from other regions of the Caucasus (Gubadli, 2021).

Hydrographically, the region also holds substantial tourism and recreational significance. Rivers such as the Tartar, Khram, Hakari, Gargars, and Okhchu flow across the area, contributing both aesthetic value and ecological richness. Lakes including Goygol, Maralgol, Karagol, and Alagol play an essential role not only in shaping the hydrological environment but also in recreational use.

Landscape studies in the region rely on integrated geographical research methods. Cartographic analysis, comparative assessment of landscape components, GIS and remote sensing techniques, statistical processing, and field observations enable detailed examination of landscape structure. These methods help evaluate the suitability of landscapes for tourism, plan potential tourism routes, and analyze environmental impacts. The landscape cover of the Lesser Caucasus is highly diverse. Semi-desert and dry steppe landscapes dominate the foothill zones, where gray and gray-brown soils, ephemeral plants, and xerophytes are widespread. In the mid-mountain areas, oak, hornbeam, chestnut-leaved, and ash forests form extensive forest landscapes, particularly dense along the Goygol–Kalbajar corridor. At higher elevations, subalpine and alpine meadows prevail, offering favorable conditions for summer tourism, hiking, and traditional pastoralism. Cold high-mountain landscapes dominate in areas such as Murovdag and Gamishdag. River valleys, lake landscapes, and chestnut-leaved forest massifs enhance the region’s recreational appeal (Mammadov, 2007).

The landscapes of the Lesser Caucasus are suitable for a wide range of tourism activities. Mountain tourism and trekking are among the most widespread activities. Routes such as Goygol–Maralgol–Shahdag, Kalbajar–Istisu, Lachin–Gyrkhgyz Plateau, and Shusha–Dashalti Gorge possess high aesthetic and landscape value. Forest zones, mountain meadows, natural landmarks such as Goygol and Karagol, and protected areas provide excellent conditions for ecotourism. Goygol National Park and the Lesser Caucasus section of Shahdag National Park are rich in rare flora and fauna, making them ideal for nature-based tourism.

Balneological tourism is directly linked to the region’s mineral water resources. Kalbajar’s Istisu mineral water complex, Shusha’s Turshsu springs, and hydrocarbonate-sodium waters found in Zangilan and Lachin districts possess distinctive therapeutic qualities, offering high potential for future sanatorium-resort development (Museyibov, 1998). The region’s altitudinal conditions—particularly in Murovdag, Kepez, Kalbajar, and Lachin—are favorable for winter tourism due to snow depth, relief configuration, and climatic suitability. Modern ski centers would further enhance the region’s tourism attractiveness. Historical–cultural landmarks associated with the region’s landscapes, including the city of Shusha, Khudafarin bridges, Alban temples, and the Aghoghlan Monastery, add additional value to cultural and historical tourism. Summer pasture tourism and agrotourism, grounded in traditional land-use practices, contribute to local community development and seasonal diversification of tourism (Goychayly, 2010).

Despite its strong tourism potential, several challenges hinder the full development of tourism in the Lesser Caucasus. Long-term occupation in the Karabakh and Eastern Zangezur regions resulted in severe infrastructural damage. Roads, communications, and social facilities require restoration. Landmine contamination continues to restrict tourism activities in some areas. A shortage of qualified tourism personnel also presents difficulties. However, large-scale reconstruction efforts are underway, and state programs emphasize the transformation of the region into a tourism cluster (Rahemtulla & Wellstead, 2001; Swain, 2010). In conclusion, the landscapes of the Lesser Caucasus possess exceptionally high tourism and recreational potential. The region’s relief, climate, water resources, biodiversity, mineral waters, and cultural-historical heritage provide unique opportunities for visitors. The development of mountain and winter tourism, ecotourism, balneological tourism, pasture-based tourism, agrotourism, and historical tourism can transform the Lesser Caucasus into one of Azerbaijan’s leading tourism centers. Enhancing infrastructure, ensuring safety, maintaining ecological balance, and implementing sustainable tourism strategies will play a key role in the socio-economic advancement of the region (E-dərslik, n.d., p. 61).

Conclusion

1. The Lesser Caucasus Mountains represent one of the most resource-rich and strategically significant regions of Azerbaijan in terms of their physical–geographical structure, relief, geological evolution, and landscape diversity. Sharp altitudinal contrasts, deep gorges, broad valleys, rocky outcrops, and relic glacial features create a highly diverse relief that shapes a complex landscape structure, offering wide opportunities for tourism development.
2. The geological framework of the mountain system is both complex and multilayered. The presence of rocks from the Paleozoic to the Cenozoic eras, along with intrusive massifs and extensive volcanogenic formations, indicates an active geodynamic evolution. This structural complexity has contributed to the development of a fan-shaped mountain configuration and has also resulted in rich mineral resources. Deposits of copper, molybdenum, gold, and the presence of therapeutic mineral waters provide significant advantages for both economic activities and recreational use.
3. The region's climate varies according to vertical zonation and is closely linked to mountainous relief. Sharp differences in temperature and precipitation from the foothills to the high-mountain areas create diverse landscape types. This variability enhances ecological diversity and provides favorable natural conditions for multiple forms of tourism. Long-lasting snow cover in the high-mountain belt significantly increases the potential for winter sports.
4. The hydrographic network of the Lesser Caucasus is another key component that enhances its tourism and recreational potential. Clean mountain rivers, semi-glacial lakes, and water bodies with high aesthetic value enrich the landscape and increase the ecological and economic importance of water resources. Unique lake ecosystems such as Goygol, Karagol, and Maralgol are particularly valuable for ecotourism as well as for scientific and educational purposes.
5. The richness of the region's landscape cover makes the Lesser Caucasus one of the most distinctive areas for ecotourism. From semi-desert and dry steppe zones to forests, subalpine and alpine meadows, and cold high-mountain landscapes, the region supports various forms of tourism, including mountain hiking, transhumance tourism, photo expeditions, and observational tourism. Forest zones, especially the dense Goygol–Kalbajar corridor, possess exceptional recreational value.
6. Balneological tourism represents one of the region's strongest assets. Mineralized hot and cold waters found in Kalbajar, Lachin, Shusha, and other districts are effective for treating various health conditions and hold great promise for the future development of sanatorium and resort complexes.
7. Despite its strong natural potential, several factors hinder the full-scale development of tourism in the Lesser Caucasus. Infrastructure was severely damaged during the long-term occupation of Karabakh and Eastern Zangezur, landmine contamination remains a barrier to tourism activities, and there is a shortage of qualified specialists in the tourism sector. Nevertheless, large-scale reconstruction and rehabilitation efforts are underway, forming a solid foundation for the region's future development.
8. Overall, the Lesser Caucasus stands out as one of Azerbaijan's most promising regions in terms of tourism and recreation. Its diverse natural complexes, geographical variability, therapeutic waters, cultural-historical heritage, and unique landscape mosaic shaped by deep geological processes create opportunities for multi-profile tourism. The application of sustainable development principles, improvement of infrastructure, and enhancement of safety measures can ensure the transformation of the Lesser Caucasus into one of the leading tourism destinations of the country.

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Received: 04.08.2025

Accepted: 30.11.2025