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Ecological Tourism in the Mountainous Regions of Russia: Essence and Development Prospects

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Abstract: This article analyzes modern concepts and approaches of the works of Russian and foreign researchers to the development of ecological tourism as nature-oriented. The concept of mountain ecotourism should include the specific conditions of mountain ecosystems (ecological vulnerability to anthropogenic impact, the dynamics of landscape-forming processes, etc.). In the mountainous regions of Russia, favorable prerequisites exist for the development of various areas of ecotourism (apitourism, agrotourism, geological tourism, scientific tourism, etc.), both within and outside specially protected natural areas. A strengths, weaknesses, opportunities and threats (SWOT) analysis on the example of the mountainous regions of the North-Eastern Caucasus showed that there are many strengths and opportunities for the development of ecotourism within the boundaries of specially protected natural areas (unique natural complexes and objects, attractive natural landscapes, high biological diversity, the presence of endemics and relics in the structure of biodiversity, favorable climate, transport accessibility, significant labor resources, etc.). Weaknesses that hinder the development of ecotourism and possible threats (poor development of tourist infrastructure, organized tourist routes, equipped ecological trails, shortage of qualified personnel in the field of ecotourism, etc.) are also identified.

Keywords: ecotourism, mountain regions, balanced development, prospects, biodiversity, innovations, threats, potential

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1. Introduction

As world experience shows, the tourism industry is among the most dynamically developing [*Stezhko et al.*, 2020]. Its development is often associated with a negative impact on the environment [*Baloch et al.*, 2023; *Tikhomirova*, 2020]. On the one hand, the COVID-19 pandemic has revealed weaknesses in the relationship between man and nature, and on the other hand, has increased the relevance of domestic tourism [*Lin et al.*, 2022].

Science-based rational use of natural and cultural-historical tourist and recreational resources will help to avoid many negative consequences of mass tourism [*Zaburaeva*, 2022]. One of the most actively developing areas of the tourism industry over the past decades, ecological tourism (ecotourism), is called upon to meet these principles.

The purpose of this paper is to study the specifics of ecological tourism and identify the prospects for its development in the conditions of the mountainous regions of Russia on the example of model territories. We have chosen the regions of the North-Eastern Caucasus as model ones.

2. Research methods and methodology

The factual base of this study consists of materials from the Federal State Statistics Service; regional ministries of natural resources and ecology; culture and tourism; works of

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domestic and foreign scientists devoted to the specifics of the development of ecotourism. Methods of analysis and synthesis, statistical, comparative geographical, systemic, historical and strengths, weaknesses, opportunities and threats (SWOT) analysis were also used.

3. Ecological tourism concept

The history of the concept of ecological tourism goes back to the end of the 20th century and is associated with the awareness of geoecological problems [*Gómez-Baggethun et al.*, 2013]. The main regions that generate demand for a new type of tourism aimed at ensuring a balance between economic interests and environmental safety of the development of recreational areas are the countries of Western Europe and North America, where the environmental system is most fully developed [*Astanin*, 2021]. *Jax and Rozzi* [2004] associate the emergence of the concept of ecotourism with increasing pressure on natural and cultural-historical recreational resources due to the growth of tourist flows. It was expected that the new alternative tourism would contribute to the economic growth of regions (countries), social well-being and would preserve the natural environment [*Salman et al.*, 2022].

Modern research on the problems of ecotourism is largely differentiated by goals, philosophical views and theoretical and methodological approaches [*Baloch et al.*, 2023; *Butche*, 2007; *Cros and McKercher*, 2020; *De Vos et al.*, 2016]. Domestic researchers use about two dozen terms as synonyms for the concept of "ecotourism": from scientific, environmental, rural, green, alternative to socially responsible and sustainable [*Chernaya et al.*, 2023; *Lapochkina et al.*, 2016; *Lesnykh and Sozinova*, 2022]. Foreign publications use such terms as "ecological tourism", "ecotourism", "green tourism" [*Butche*, 2007; *Fennell*, 2020; *Gryshchenko et al.*, 2022; *Walter*, 2013].

If we combine all existing approaches to the definition of ecotourism, they can be reduced to two types: narrow (classical) and broad [*Astanin*, 2021; *Zaburaeva et al.*, 2022a]. The first type involves ecological tours directly within the boundaries of specially protected natural areas and water systems (PAs). In a wide sense, the meaning of ecotourism is close to its Western European counterpart and can mean all types of environmentally oriented tourism both within the boundaries of the protected areas themselves and beyond.

Modern researchers [*Fadafan et al.*, 2022] associate ecotourism with activities aimed at protecting and reducing the negative impact on the environment, stimulating economic development and improving the quality of life and activities of the local population. In this context, ecotourism acts as a tool for the sustainable development of the region [*Kiper*, 2013; *Salman et al.*, 2020]. Most researchers note the need for greater environmental awareness of tourists and stimulation of their environmentally responsible behavior as the most important condition for the development of ecotourism [*Han et al.*, 2018; *Higgins-Desbiolles*, 2009; *Lin*, 2018].

4. Innovations in ecotourism

With the popularization of nature-oriented ecological views around the world and a growing demand for a new direction of tourism, over the past decades the worldview of a modern tourist has become more environmentally friendly, as we notice [*Shabalina et al.*, 2021]. Tourists, including ecotourists, now demand better quality of tourist facilities [*Fadafan et al.*, 2022]. This necessitates continuous improvement of the quality of service in tourism and recreation, which is impossible without innovations [*Zaburaeva and Krasnov*, 2021]. Innovation in tourism contains two interrelated elements: neo-technological and technological [*Makrushina et al.*, 2021]. The first element is aimed at improving the quality of service in tourism, and the second one deals with the character of technologies (information, communication, etc.). In ecotourism, innovation can also manifest itself through the development of innovative eco-tours. *Makrushina et al.* [2021] distinguish apitourism as such a type of ecotourism.

In the context of the development of ecotourism with the introduction of innovative ideas in the market of recreational services, a new type of hotels, known as "ecological hotels" (eco-hotels) is very popular. Eco-hotels are designed to provide recreation with minimal impact on the environment [*Teslenko and Romanova*, 2019]. They function using solar panels, energy-saving appliances and minimal water consumption.

5. Specificity of mountain ecotourism

Mountain ecosystems are characterized by high biodiversity. This explains the creation of biosphere reserves and other categories of protected areas in mountainous regions. A unique cultural heritage is concentrated in those areas. Various ethnic groups live compactly here, preserving their own language, traditions and culture. At the same time, they are very vulnerable and are often exposed to such anthropogenic factors as the irrational use of biological resources, irregular grazing, armed conflicts, etc. [*Huseynzade*, 2023].

Many mountain communities around the world support the concept of ecotourism in the hope of solving geo-environmental problems and stimulating the economic development of mountain regions [*Nepal*, 2002]. Modern researchers regard mountain ecotourism as a key to solving the dual problem of rural mountain areas: reducing poverty and minimizing the degradation of mountain ecosystems [*Jurkus et al.*, 2022; *Nigar*, 2018]. For its development, an important role is assigned to local communities (indigenous ethnic groups), for example, in the implementation of a tourism product, in solving many geoecological problems, etc. [*Salman et al.*, 2021]. Foreign experience in the development of ecotourism testifies to the high efficiency of integrating indigenous ethnic groups into ecotourist activities [*Astanin*, 2021]. According to *Nepal* [2002] mountain ecotourism should be characterized by scientific planning, efficiency, sustainability, and authenticity.

6. Mountain ecotourism in Russia

In accordance with the United Nations Environment Programme (UNEP) international classification, Russia is one of the mountainous countries, where over 50% of the territory is occupied by mountains, highlands and plateaus [*Dabiev*, 2022; *Kotlyakov and Badenkov*, 2010]. The Tourism Development Strategy of the Russian Federation for the period until 2035 names this type of tourism a priority [*Decree of the Government of the Russian Federation of September 20, 2019 No. 2129-r (as amended on February 7, 2022)*, 2019] and substantiates the need to move to the model of ecological tourism. In general, there are mountain areas in 44 subjects of the country. A significant number of UNESCO World Natural Heritage sites, historical and ethno-cultural centers are concentrated in the mountains of the Caucasus, Altai, Urals, Kamchatka, etc.

In mountainous areas, there is a wide variety of historical ethno-cultural centers with unique traditions of sustainable nature management. Some researchers note the highest landscape diversity in the North Caucasus (North Ossetia-Alania, Kabardino-Balkaria, Chechnya, Ingushetia) and less in Tyva, Altai, Buryatia, Amur and Kamchatka regions, etc. [*Melchenko et al.*, 2004]. The comparative analysis was carried out according to the ratio of the number of landscape types to the total area of the regions.

Taking into account world trends in the concept of development of ecological tourism in the mountainous regions of Russia, both models of ecotourism (American and Western European) can successfully evolve. The legal framework for regulating ecotourism in Russia is formed by federal laws, decrees of the President of the Russian Federation, decrees of the Government of the Russian Federation, regulations of ministries, departments, regional and municipal laws, etc. Researchers [*Shabalina et al.*, 2021] mention that the deterrent factors for the development of ecotourism in Russia (in legal regulation) include the looseness of the concept of ecotourism in the legislation, the lack of a well-developed, well-established system for obtaining permits for project documentation, which create obstacles for investors and entrepreneurs to access protected areas and objects.

In the mountainous regions of Russia, there are prerequisites for the development of various types of ecotourism (agritourism, speleotourism, apitourism, ethnocultural tourism, and many others). Agritourism is a very promising direction of ecotourism in the studied regions, since most of them are dominated by the rural population. Development of a network of guest houses (including remote mountain settlements) without the high cost of infrastructure and the high level of hospitality of the highlanders will also increase the level of employment of the indigenous population. The Republic of North Ossetia-Alania is the most active in developing agritourism in the North Caucasus. This republic is one of the first regions of Russia that has adopted a law on mountain territories and established the Center for the Development of Ecological and Rural Tourism, where residents who wish to receive tourists in their homes can apply, and where about 25 guest houses are operating successfully [*Kosareva*, 2020].

Speleotourism is one of the promising and most developed areas of ecotourism in the mountainous regions of Russia (Altai, Krasnoyarsk, Khabarovsk Territories, Chelyabinsk Region, etc.). In a number of regions, it is represented by several directions. In Crimea, for example, it includes excursion and extreme sports varieties [*Gulieva et al.*, 2021]. In the North-Eastern Caucasus, speleotourism has great prospects, but is practically not developed [*Zaburaeva et al.*, 2020].

In a number of regions, for example, in Altai and up to the entire Altai-Sayan region, the first steps are already being taken to develop ecotourism development programs [*Kundius and Mironova*, 2022]. However, at present, the share of ecotourism in the structure of the Russian industry market is still insignificant (1.5%) [*Volivok and Kovalev*, 2020].

One of such varieties of ecological tourism as geotourism (or geological tourism) is of particular relevance in the mountainous regions of Russia. It focuses on travelling to gain knowledge in the field of geology and geomorphology [*Golubchikov and Kruzhalin*, 2021]. Tourists have the opportunity to get acquainted with the geodiversity of geological structures (faults, folds, stratifications), relief, rocks, minerals, etc. Geotourism objects include unique landforms, canyons, waterfalls, steep banks, geysers and volcanoes. The Kamchatka Territory compares favorably with the rest of the mountainous regions of Russia due to the presence of the latter, which creates prerequisites for specific types of ecotourism [*Zavadskaya et al.*, 2021]. For example, in Primorsky Krai there are more than three dozen small islands (many of which are uninhabited) with attractive landscapes and coasts, a large number of bays, making prerequisites for island tourism here [*Volivok and Kovalev*, 2020]. Geotourism can be a powerful tool for sustainable development of the regions of the North-Eastern Caucasus. There are different types of geological monuments: from stratigraphic and geochronological to tectonic and geomorphological ones [*Yusupov et al.*, 2020].

The basis for the development of ecotourism is created by natural resources, while the important role of the necessary tourism infrastructure is not denied [*Grieves et al.*, 2014]. Protected areas are often considered as an integrated natural resource for ecotourism [*Shabalina et al.*, 2021], although ecotourism can develop both within and outside the boundaries of PAs. In Russia, the degree of involvement of PAs in ecotourism remains extremely low compared to the United States and Western European countries [*Tikhomirova*, 2020]. It is even more in its infancy in the regions of the North-Eastern Caucasus. The formation of a system of protected areas began here in 1963, when the Sovetsky, Vedensky and Parabochevsky hunting reserves appeared in Chechnya [*Zaburaeva et al.*, 2022b]. The total area of federal PAs in the regions of the North-Eastern Caucasus is about 230 thousand hectares, including 2 reserves (Dagestan and Erzi), 6 reserves and the Mountain Botanical Garden of the Dagestan Scientific Center of the Russian Academy of Sciences.

A comparative analysis of the areas of PAs in a number of regions of the Caucasus showed that their values in the northeastern part are low (Table 1). The values of this indicator turned out to be minimal in Chechnya (6.9%) and Dagestan (13.6%). In the latter, the water basins make up over two thirds of the protected area. Here, unlike the

land territories of Chechnya and Ingushetia, mountain, sea and coastal landscapes are harmoniously combined.

Table 1. The ratio of the number and area of PAs in the regions of the North Caucasus (01.01.2022)

#	Region	Number of PAs	Total area of PAs, thousand ha	Percent of the total area of the region
1	Dagestan	53	682.7	13.6
2	Chechnya	50	111.9	6.9
3	Ingushetia	2	69.4	19.1
4	Karachay-Cherkessia	70	310.8	21.8
5	Kabardino-Balkaria	32	336.5	27.0
6	North Ossetia-Alania	222	166.6	20.9

Note: Compiled according to the state report "On the state and protection of the environment of the Russian Federation in 2021".

Among the regional PAs of the North-Eastern Caucasus there are state nature reserves (Sovetsky, Vedensky, Stepnoy, Shali, Urus-Martanovsky, Bragunsky, Bezhtinsky, Deshlagarsky, Kasumkentsky, Kayakentsky, Kosobsko-Kelebsky, etc.), the Upper Gunib Natural Park, the dendrological park (Groznensky), numerous botanical (Achkhoy-Martan pine grove, Bamut pine grove, a park of Caucasian linden, plane trees near the Dzhuma mosque in Derbent, etc.), hydrological (lakes: Kezenoy-Am, Galanchozhskoye, Akh-Kol, Shaitan-Kazak, Mochokh; mineral springs Melch-Khi, Epkhe; waterfalls: Vashindaroysky, Shatoysky, Khanagsky, Chvakhilo, etc.), geological (oil springs: in the Bolshoy Yaryk-Su river valley, on the outskirts of the village of Simsyr), paleogeomorphological (outcrops Arka and Brothers in the upper reaches of the Gehinka River, a rock outcrop with a text, Assatinskaya Cave) and other natural monuments [*Zaburaeva*, 2022].

Among the specially protected natural objects, the role of Kezenoy-Am Lake is very significant. This is the largest alpine lake in the North Caucasus, located on the southern slope of the Andian Range in the zone of mountain alpine meadows at an altitude of 1869 m above sea level on the border of the Vedeno region of the Chechen Republic and the Botlikh region of the Republic of Dagestan [*Zaburaeva et al.*, 2022a]. Along with the positive trends of recent years (construction of a hotel complex, modernization of the transport system, etc.), there is a significant increase in the anthropogenic pressure on this ecosystem due to organized and spontaneous tourism and recreation. In order to prevent the deterioration of the geoecological state of this transboundary protected area, one should turn to foreign experience in the conservation and restoration of lake ecosystems (for example, Lake Champlain on the border of the USA and Canada, Lake Ontario in Canada, Lake Balaton in Hungary, etc.), which provides for a set of solutions (including the water area monitoring system), which involve various actors – from municipal and regional authorities, scientific and educational institutions, environmental protection departments to public utilities [*Sheinfeld et al.*, 2021].

Hunting tourism is one of the promising forms of ecological tourism in the regions of the North-Eastern Caucasus, which involves strictly regulated hunting for wild animals, birds and fishing. Also in these regions there is a great potential for the development of apitourism, since beekeeping has been developed here since ancient times.

A SWOT analysis of the problems and prerequisites for the development of ecological tourism in specially protected natural areas of the North-Eastern Caucasus made it possible to identify and structure a number of strengths, weaknesses, vulnerabilities, as well as opportunities and threats (Table 2). Among the undeniable advantages (strengths) that create the basis for the development of ecotourism there are unique natural complexes and objects, attractive natural landscapes, significant biological diversity, the presence of endemics, relics in the structure of biodiversity and a favorable climate. Together with

transport accessibility, the availability of labor resources and high-level hospitality, they allow the development and implementation of programs for various areas of ecotourism.

Table 2. SWOT analysis of opportunities for the development of ecological tourism within the protected areas of the North-Eastern Caucasus

Strengths	Weaknesses
Unique geographic location	Vulnerability of mountain landscapes
PAs of federal, regional and local significance	Underdeveloped tourism infrastructure
Unique natural sites and objects	Underdeveloped organized tourist routes, shortage of equipped ecological trails
Terrain diversity (from lowlands to highlands)	Large share of unorganized tourism
Natural highly attractive landscapes	Shortage of qualified personnel in the field of ecotourism (managers, guides, etc.)
Hydro-recreational facilities (lakes, waterfalls, healing mineral springs, lake mud, etc.)	Lack of tourist infrastructure in certain areas
Favorable climate	Absence of approved regional and interregional ecotourism development programs
Transport accessibility	Lack of awareness and, as a result, weak interest and involvement of the local population in the field of ecotourism
High biological diversity (especially in PAs located in mountainous and high mountain areas)	Insufficient practical experience in attracting private investment for the organization of tourism within PAs
Endemics and relics in the structure of biodiversity	Weak promotion of the strategic direction of ecotourism development
Significant labor resources	Lack of a unified system for promoting eco-tourism as a national eco-brand
Hospitality traditions	Weak promotion of ecotourism advertising
Opportunities (prospects)	**Threats**
Development of various directions of ecotourism and an increase in the flow of tourists	Unstable geopolitical situation
Innovations in the tourism sector	The image of an unfavorable region in the media
Development of domestic tourism	Declarative goals and objectives of ecotourism
Attracting investment in the tourism industry	Low level of training in the field of ecotourism (managers, guides, etc.)
Training of qualified personnel	Unorganized flow of tourists
Improving the quality of service	Low level of ecological culture of tourists (recreants)
Interregional cooperation and exchange of experience for the development of ecotourism	Insufficient development of tourism infrastructure
Interests of the business community	Unfavorable economic situation in the country
Interests of the local population in nature protection	Lack of clearly regulated rules for conducting ecological tours and excursions
Involvement of the local population in the field of ecotourism	Lack of strictly standardized volume of recreational load within PAs
PA status	Hazardous natural phenomena and processes in mountainous areas
Creation of regional and unified interregional geo-ecological framework (PA systems)	Degradation of mountain ecosystems
Development of PA network by allocating part of the tourism income for these purposes	Biodiversity decline

On the one hand, biodiversity is the basis for the development of ecotourism, and on the other hand, tourism activities can contribute to the reduction of biodiversity [*Jones*,

2022]. Among the weaknesses and threats that limit the development of ecotourism in the protected areas of the North-Eastern Caucasus are the vulnerability of mountain landscapes, the underdevelopment of tourist infrastructure, organized tourist routes, equipped ecological trails, the shortage of qualified personnel in the field of ecotourism, the image of unfavorable regions in the media, etc.

7. Conclusion

Thus, the mountainous regions of Russia have significant potential for the development of various areas of ecotourism, both in protected areas and beyond. The development of ecotourism programs in Russia should be carried out taking into account foreign experience. For example, the experience of a number of Alpine regions in using innovative approaches could be useful for the development and management of mountain ecotourism [*Nepal*, 2002]. Natural resources create the basis for the development of the recreational sector [*Pessot et al.*, 2021] and their science-based use and protection play a key role in the development of ecotourism. Ecotourism as an alternative to mass tourism has great prospects, especially in mountainous areas that attract tourists and require careful treatment. For the regions under study, the experience of organizing tourism and recreation within the Baikal natural territory will be very useful, in particular, through the implementation of public-private partnership mechanisms [*Sheinfeld et al.*, 2021].

In Russia as a whole and in the North Caucasian regions in particular, ecotourism is currently underdeveloped, although a course has been taken in this direction. In the mountainous regions of Russia, the development of ecotourism is constrained by many factors. For a more sustainable (balanced) development of ecological tourism, it is necessary:

1. to develop a conceptual apparatus, criteria and indicators of mountain ecotourism, which will avoid the unsystematic use of the concept;
2. to develop tourism infrastructure, improve service;
3. to develop a unified system for promoting ecotourism as a national eco-brand;
4. to involve other sectors of the economy (agriculture, small and medium-sized businesses, etc.) in the process of formation, promotion and implementation of ecotours;
5. to introduce innovative ideas in ecotourism, since such projects are characterized by investment attractiveness and provided with state support;
6. to involve the local population in ecotourism activities;
7. to establish intersystem and interregional links in the field of ecotourism, etc.

Solving the above and other related problems is a long and laborious process. However, in the long term, in the studied regions, this will allow to develope the socio-economic sphere, ensuring the protection of unique mountain landscapes, and will positively affect the employment of these labor-surplus regions.

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