

Tourism market relies heavily on environmental and natural factors

Olga Yu. Voronkova^{1*}, Sabina T. Akhmedkhanova², Sergey A. Nikiforov³, Alexey V. Tolmachev⁴, Igor B. Vakhrushev⁵, Afanasiy A. Sergin⁶

1. Altai State University, Barnaul, Russian Federation

2. Dagestan State Technical University, Makhachkala, Republic of Dagestan, Russian Federation

3. Southwestern State University, Kursk, Russian Federation

4. Kuban State Agrarian University named after I.T. Trubilin, Russian Federation

5. V.I. Vernadsky Crimean Federal University, Simferopol, Russian Federation

6. North-Eastern Federal University named after M.K. Ammosov, Republic of Sakha (Yakutia), Yakutsk, Russian Federation

*Corresponding Author's Email: olka2004@yandex.ru

ABSTRACT

This study aims to investigate the ecological and environmental impacts of the tourism cluster as a driver of regional tourism market development. The tourism industry can lead to adverse effects on the environment and ecosystem. It can place immense pressure on an area and result in catastrophic impacts, including increased pollution, soil erosion, natural habitat loss, massive pressure on endangered species, and intensified vulnerability to forest fires. However, the tourism sector assumes a significant function in solving the regions' socio-economic problems by creating additional jobs, ensuring the growth of employment of the economically active population, and improving the welfare of the nation. Nowadays, tourism is one of the drivers of economic recovery, which has a stimulating effect on the development of such related fields of the economy as accommodation services, transportation services, communications, trade, souvenir production, catering, agricultural production, construction, pharmacy, etc. Tourism is important for the socio-economic development of many regions of the Russian Federation. For example, the Altai Territory has a high level of tourism-recreation potential, in the region. There are unique natural and tourism-recreation resources, objects of cultural and historical heritage, vital political, economic, sports and cultural events. Despite this, the lucrative industry's environmental damage should be taken into consideration and minimized as far as possible. To achieve the aim of this study, several methods were employed including a persuasive strategy for discernment, interconnection and association, general logical strategies such as methods of scientific abstraction, modeling, analysis and synthesis, as well as grouping and comparison, analysis of the regulatory framework, literary sources, statistical data and a comparative method. Finally, some recommendations were brought about to benefit from this increasingly popular industry, while keeping the damage to the environment to a minimum.

Key words: Tourism, Environmental impacts, Tourism market, Tourism cluster, Infrastructure, Ecosystem.

INTRODUCTION

The formation and development of cluster intersectoral mechanisms as the “growth points” of both regional and national economies meet these purposes. Noteworthy, clusters make it possible to overcome organizational and structural limitations, as well as to reverse the multisectoral production structure that has developed in a number of economic entities. Currently, Barnaul, the capital of the Altai Territory, is the only place in Russia where buildings related to the formation of mining production of the 18th-19th centuries have been preserved (Aleksieva Fedorova *et al.* 2020; Lenar Nailevich *et al.* 2020). The buildings of the silver smelter are included in the register of monuments of federal significance. Their inclusion in tourist routes in Barnaul city and Altai Territory can

clearly demonstrate the role of this territory in the history of Russia. One of the main tasks of implementing state tourism policy in the territory of Barnaul is to preserve the history of state development and minimize the environmental damage as a whole. The creation of the tourism-recreation cluster “Barnaul is a Metallurgical City” will allow systematically linking the objects of tourism and supporting infrastructure of the cluster into a single multifunctional complex (Aleksandrova *et al.* 2019).

The current phase of tourism development determines the objective need to increase the effectiveness of state policy pointed toward building up the travel industry administrations market and the need to study the state support system for investors, due to which cultural heritage sites are restored and new tourist route facilities are created (Sergeev *et al.* 2019). Tourism is a complex historical and cultural socio-economic process and its organization requires serious scientific justification. In recent years, due to the increasing attention of society to tourism, the number and scope of research related to tourist excursion activities and ecosystem preservation policies have been expanding, and it primarily concerns regional tourism, as the least represented and studied part of the entire totality of tourism practice (Bondarenko *et al.* 2019).

The tourism potential of any territory consists of natural, historical and cultural objects, as well as the socio-economic prerequisites for the development of tourist activity organization. An important element of tourism development is the formation of a unique offer and demand for tourism products provided in the territory. In addition, preservation ethics should be emphasized to tourists so as to prevent environmental damage (Bykanova *et al.* 2018). However, the tourism potential of the regions is far from being fully used. To improve the situation, active state participation in solving many problems in the sphere of construction, infrastructure, energy, transport, communications, as well as staff training. Barnaul is one of Russia's few cities, which was formed in the 18th century as an industrial center. In subsequent centuries, the city retained the right to be a center of the Kolyvano-Voskresensky mountain district, then the Altai district, and now – the Altai Territory (Cheremisina *et al.* 2015).

MATERIAL AND METHODS

The following methods were used in this study including a persuasive strategy for discernment, which uncovers the conceivable outcomes of examining monetary marvels in their turn of events, interconnection and association; general logical strategies: methods of scientific abstraction, modeling, analysis and synthesis, grouping and comparison; analysis of the regulatory framework, literary sources, statistical data, as well as a comparative method. The information base of the study included the work of foreign and national authors on this issue. The provisions contained in the works of modern scientists were used in the study. The study's regulatory base included: Federal laws, the Decrees of the President of the Russian Federation, Decrees of the Government of the Russian Federation, regulatory documents of Altai Territory government agencies on tourism development issues. The overall aim is to promote the tourism industry as well as preserve the environment.

RESULTS AND DISCUSSION

In modern literature, the concept of the tourism market is interpreted by many scientists as follows – the mechanism of interaction of the macro and micro levels or, in other words, the state and business. Such a mechanism should include requirements for the transaction place, a description of transaction terms, and also reflect the peculiarities of interest in the transaction from all participants. The particularity of the travel industry market is the away from of administrations. The travel industry merchandise and ventures can be devoured just if the buyer is conveyed to the spot of their creation/arrangement. The customary products and enterprises are prepared for utilization when the fabricated items have completed the process of moving from the creation spot to the spot of utilization. Different highlights of the travel industry administrations as objects of procurement and deal are the lopsidedness of interest consistently (e.g., for entertainment or strict the travel industry), a wide scope of the versatility of interest for specific administrations.

The authors propose to define tourism based on the duality of its internal nature. Tourism is a combination of both the activities of individuals (tourists) and subjects of the tourism industry to achieve various goals related to tourism and recreation: medical-rehabilitation, educational, sports, religious and other goals, in the place of permanent residence or temporary stay, not related to migration, and the activities of enterprises providing tourists with goods and services. Like all other markets, the tourism market operates in accordance with the law of supply and demand. The Russian Federation possesses the most powerful real and potential tourism resources: cultural and historical heritage, scientific-industrial facilities, medical and resort potential and facilities that can generate

active tourist interest from domestic and foreign tourists individually and as a whole. In addition, Russia has a completely unique opportunity to develop the Russian market of tourism services in accordance with international requirements and standards, in all the diversity of its socio-economic and territorial opportunities (Dunets *et al.* 2019). Modern tourism of the 21st century is a form of recreation and leisure and one of the most active forms of communication between people, the development of new territories and a key sector of the economy. Tourism is characterized by space selectivity depending on the features and properties of the territory, as well as on modern motives of tourism-recreation activities. The modern needs of tourists are the basis for the formation of specialized territorial tourism-recreation systems that vary in space and time and awareness of environmental issues for the visitors (Dunets *et al.* 2020).

Modern strategies of socio-economic development of Russia are based on providing autonomy to the Russian Federation's subjects in resolving regional issues. This served as a powerful incentive for the revitalization of all spheres of life of the regions. The transition of regions to self-government and self-sufficiency stimulates the search for ways to increase economic development efficiency on local resources. To analyze the experience of tourism market formation in certain regions of the Russian Federation, several regions that are the most attractive in terms of tourism development will be considered – the Altai Republic, the Republic of Karelia, Khabarovsk Territory, Vologda and Irkutsk regions (Table 1). The Altai Republic lags behind the other regions in terms of the level of GRP per capita, however, the number of tourists who visited the republic in 2019 is higher than in other regions, this territory has an extensive number of natural tourist zones. Outstripping other regions from the list under study in terms of GRP, the Irkutsk region has a good base for tourism development. In this regard, the Irkutsk region is one of the leaders, however, it is worth noting that only a small part of the area is in demand as a tourist attraction: according to websites that are popular among travelers, almost all the attractions are located in the city of Irkutsk and on the coast of Lake Baikal (Efremova *et al.* 2015).

Table 1. Basic characteristics of certain constituent entities of the Russian Federation (2019).

Constituent entity of the Russian Federation	GRP per capita, thousand rubles	Area, in km ²	Population in 2019, people
Altai Republic	231.5	92,903	220,181
Republic of Karelia	451.4	180,520	614,064
Khabarovsk Territory	536.4	787,633	1,315,643
Vologda Region	497.0	144,527	1,160,445
Irkutsk Region	580.2	774,846	2,391,193

When choosing the data of the constituent entities of the Russian Federation, the following parameters were taken into account: the presence of significant natural objects, as well as severe climatic conditions – in all regions, there is a subarctic climate. Tourists are attracted to the Irkutsk region by a unique natural attraction – Lake Baikal. The growing interest in the region as a tourist zone is manifested in the formation of a single tourist and economic space of the Baikal region, which, in particular, can lead to an increase in the flow of foreign tourists by 15-20%. Tourism on Baikal is represented mainly in the Irkutsk region. This is evidenced by the volume of tourism services. In addition to Lake Baikal, in regions with a subarctic climate, one can distinguish as follows: Onega and Ladoga lakes of the Republic of Karelia, Lake Teletskoye of the Altai Republic, and Lake Beloye of the Vologda Region. Certainly, lakes are not the only, and not even the most popular attractions of these regions, but the presence of nature reserves, geysers, forests and mountains makes them the equal rivals of the Irkutsk region. In Khabarovsk Territory, they offer such interesting routes as “Ikhiofauna of the Khabarovsk Territory” and “Pearl Necklace”.

Noteworthy, in the regions of the Siberian Federal District, there is a desire to implement joint tourism projects in order to develop eco-tourism and ethno-tourism, for example, proposals were sent to the Russian Geographical Society and an interregional route “The Golden Ring of Siberia”, uniting the regions of the Siberian Federal District, was formed. No matter what natural attractions the territory possesses, a financial resource is necessary for the full realization of the tourist potential. One of the tools for generating financial flows for tourism development is participation in government development programs. Table 2 presents the completed and ongoing regional target development programs in the field of development and realization of tourism potential in the analyzed constituent entities of the Russian Federation (Goryushkina *et al.* 2019; Aleksandrova *et al.* 2019).

Table 2. Information on the participation of certain constituent entities of the Russian Federation in regional target programs.

Constituent entity of the RF	Target program name	Main objectives of the program	Program financing	Results
Altai Republic	The state program of the Altai Republic "Development of domestic and inbound tourism" (2013-2018)	Increasing the tourist market of the Altai Republic, meeting the needs of Russian foreign citizens in quality tourism services	Total budget allocation: 2,925.3 million rubles	Indicators, including the volume of tourist flow in accordance with the expected results of the program
The Republic of Karelia	The state program of the Republic of Karelia "Tourism development in the Republic of Karelia" (2016-2020)	Developing the tourism complex of the Republic of Karelia to ensure the growth of outbound tourist flows, increasing employment	Total budget allocation: 578.7 million rubles	Information is not publicly available
Khabarovsk Territory	The state program of the Khabarovsk Territory "Development of domestic and inbound tourism in the Khabarovsk Territory" (2013-2020)	Creation of a modern efficient competitive tourism complex providing a wide range of opportunities to meet the needs of Russian foreign private tourism services	Total budget allocation: 8,592.22 million rubles	The regional law on creating favorable conditions for tourism development has been adopted, the attraction of public and private investment, the creation of the first tourism association.
Vologda Region	State program of the Vologda Region "Preservation of the cultural potential, development of the tourism cluster and archival affairs of the Vologda Region" (2015-2020)	Preservation of historical, cultural and documentary heritage of the Vologda Region, improvement of the organization of the population's access to cultural values, information, familiarization of the population with the cultural and natural heritage of the region	Total budget allocation: 5,355.7 million rubles	Events to attract the tourist flow, implementation of large investment projects, timely resolution of problems

In general, each constituent entity has resources and a regulatory framework for tourism development. The reports on the activities of the executive branch demonstrate a different degree of success of the work done, but almost all the indicators reached the level of about 90%. For example, the Vologda Region, having high financial security of tourism development compared to other regions, implements several large state projects to increase tourist attractiveness (Aleksandrova *et al.* 2019, Aleksandrova *et al.* 2019; Idrisovich Ismagilov *et al.* 2020).

The list of existing and promising tourist attractions in constituent entities of the Russian Federation is of interest (Table 3).

The density of tourist attractions in each region is different. However, the number of the most significant ones in this sample is approximately the same. State sociocultural projects, which are indicators of investment activity, as well as of the general development of the tourist attraction sphere, play an important role. It is difficult to identify the absolute leader in terms of these indicators. For example, the density of the Baikal tourism objects in the Irkutsk Region is high, but the rest of the regional area is not interesting for tourists in terms of tourism potential. Nevertheless, the mere existence of such a significant natural object as Lake Baikal gives a very strong impetus to tourism development.

The level of the tourist flow is certainly the final indicator of tourism policy pursued by the region: this indicator indicates that tourist attractions in the region are in demand; they managed to attract the attention of target consumers who chose to visit these sites (Weidenfeld 2013; Olegovna Barinova 2020) (Table 4).

Table 3. Current and promising tourist attractions in certain constituent entities of the Russian Federation as of January 01, 2020.

Constituent entity of the RF	Existing tourist attractions	Promising projects
The Altai Republic	Lake Teletskoye; Belukha Mountain; Gorny Altai Botanical Garden; Manzherok Lake; Shavlinsky lakes	All-season ski, sports and recreation complex Manzherok
The Republic of Karelia	Reserve museum "Kizhi"; Valaam Transfiguration Monastery; Ruskeala Mountain Park; Lake Onega; Paanajärvi National Park; Ladoga Skerries National Park	Multifunctional tourism and recreation complex Syamozero; tourist center "Three Waterfalls; tourist entertainment complex "Estate of Karelian Father Christmas Talvi Ukko"
Khabarovsk Territory	Dyusse Alin; Amur Pillars; Shantar Islands; Petroglyphs; Sikache-Alana; Amut Lake; Dzhugdzhursky reserve	"Formation of the tourism and recreation cluster "Komsomolsky", "Mezhdurechye", Anyuisky National Park, the development of new areas of tourism under the project "Far Eastern Hectare"
Vologda Region	Estate of Father Christmas; Kirillo-Belozersky monastery; Vologda Kremlin; National Park "Russian North"	"Successful school", "Veliky Ustyug – the Birthplace of Father Christmas", "Tourist Cluster "Personnel of the Region"
Irkutsk Region	Lake Baikal; Olkhon island; Circum-Baikal Railway; Listvyanka village, Taltsy museum, Patomskiy crater, Irkutsk settlement (130 th quarter)	"Irkutsk quarters"; Solnechnaya Road; "Baikal: Great Lake of Great Country", "Residence of Baikal Father Christmas"

Table 4. Comparative tourist flow in the considered constituent entities in the Russian Federation for the period of 2018-2019.

Region	Tourist flow, Thousand people		Absolute increase, thousand people	Growth rate, %	Accession rate, %
	2018	2019			
The Altai Republic	2,115	2,170	+55.0	102.6	2.6
The Republic of Karelia	800	820	+20.0	102.5	2.5
Khabarovsk Territory	761.4	580	-181.4	76.2	-23.8
Vologda Region	3,086	3,150	+64.0	102.1	2.1
Irkutsk Region	1,180	1,300	+120.0	110.2	10.2

The Altai Republic has an impressive tourist flow, despite the lowest GRP rates among the represented regions. However, this region is different in that today 88% of tourists are guests from nearby regions of the Siberian Federal District. In the Republic of Karelia, the relatively low indicator of tourist flow is due to the underdeveloped tourism infrastructure. This makes the beauty of the multifaceted Karelian nature inaccessible and clearly inhibits tourism development at this stage. In all respects, the Vologda Region has been positioning itself as an example for other regions for a long time: in 2017, the region was included in the top ten best regions according to the results of the All-Russian rating on assessing the effectiveness of executive bodies of the constituent entities of the Russian Federation in tourism, which was published by the Ministry of Culture of the Russian Federation. The implementation of the HR project "Governor's Team: Your Assessment", which has been implemented since 2013, could have influenced this.

The availability of the above infrastructure in the region, in this case – in the Altai Territory, creates favorable conditions for investment and its use for highly efficient commercial projects. Due to the low cost of tourism services, including medical services, in comparison with the larger cities of Russia and cities of Europe, Asia and the proximity of Barnaul to the territory of such countries as China, the Republic of Kazakhstan, India, Mongolia, the implementation of the project of a tourism-recreation cluster will lead to an increase in the number of tourists and in the volume of health services; health prevention; medical treatment; playing sports; catering; staying at collective accommodation facilities; cultural and informative events; public transport. At the same time, additional jobs will appear in the city and professional specialists will be involved, which will increase the quality and range of services. Expanding the range of services will increase the competitiveness of the territory as a tourist city, the volume of budgets of all levels.

Business tourism is an area of the tourism industry that allows the business community to engage in the development, promotion of business and, at the same time, relax in a favorable environment. The advantage of

this type of tourism is its all-season occurrence and the ability to use a wide range of tourism services. Today, business tourism is actively developing in Russia and is the youngest and most promising for the economy. At the same time, it enhances the recognition of the region. The tourist flow analysis in Barnaul showed that, starting in 2015, the number of tourists arriving for business purposes is increasing by 1.5-2% annually. At the end of 2019, the share of business tourism in the city's tourist flow amounted to 30.5% or 130.1 thousand people. Representatives of business tourism in the capital of the Altai Territory can be conditionally divided into 3 groups: the entrepreneurial community, public authorities and state administrative bodies, including the judiciary, as well as the scientific community (Bondarenko *et al.* 2019).

Table 5. The forecast for tourism industry development in the Altai Territory with due account for the cluster creation and development for the period until 2025.

Indicators	Years of implementation						
	2019	2020	2021	2022	2023	2024	2025
Tourist flow volume (thousand people)	425.0	450.0	475.0	500.0	525.0	550.0	600.0
The number of citizens of the Russian Federation that stayed at collective accommodation facilities (thousand people)	168.2	180.2	204.2	225.0	234.9	261.8	301.4
The number of foreign citizens that stayed at collective accommodation facilities (thousand people)	25.5	27.4	30.6	33.7	35.2	37.4	39.0
The area of rooms available at collective accommodation facilities	50,230	50,865	62,130	65,870	70,933	72,569	76,548
The volume of investment in fixed assets of collective accommodation facilities (thousand rubles)	11,796.6	13,849.0	15,456.4	17,645.0	19,781.0	21,345.0	23,652.0
The number of beds at collective accommodation facilities	4,200	4,308	4,803	4,901	5,103	5,208	5,500
The number of personnel working at collective accommodation facilities	2,139	2,248	2,268	2,303	2,317	2,325	2,387
The number of personnel working in travel agencies	340	340	345	345	345	345	345
The volume of fee-based tourist services provided to the population (thousand rubles)	1,659,827.2	1,825,809.9	2,008,390.9	2,209,230.0	2,540,614.5	2,921,706.6	3,359,962.7
The volume of fee-based services rendered by hotels and similar accommodation facilities (thousand rubles)	751,650.0	751,660.0	826,826.0	950,849.9	1,093,477.4	1,093,492.4	1,093,507.4

The analysis showed that the project is relatively resistant to external and internal risk factors' possible adverse effects. With fluctuations in key parameters, the need for financing may increase, and the attracted capital will be insufficient. In the event of the above risks, it will be necessary to attract a larger amount of own funds of the project participants or seek additional financing sources. To reduce the project risks, it is necessary to establish strict control over expenses, document flow and trade secrets, special attention should be paid to information and economic security, selection of suppliers, setting clear deadlines for coordinating documentation and monitoring their implementation. Furthermore, it seems vital to devise zero-tolerance policies to clamp down on those who neglect the environmental laws.

CONCLUSION

The study showed that rethinking, adjusting the policy of the authorities to fulfill the tourism potential of the regions, the formation of a new strategy and programs for tourism development in the constituent entities of the Russian Federation, the environmental considerations, inter-regional cooperation and cooperation in tourism can significantly positively change the image of Russia as a tourist attraction and dynamically developing country with rich climatic, tourism-recreation and cultural-historical potential.

The authors suppose that such a form of organization as a cluster is a promising form of regional tourism and recreation development. The strategy for achieving regional development goals provides for the growth of cluster income by increasing tourists' number. The ways to achieve the goals are as follows:

- An increment in the number of vacationers due to the development of the all-season occurrence factor – the development of the event, educational and business tourism. A significant increase in tourists is expected due to the development of medical tourism.
 - Active marketing of the territory.
 - Increase in tourism supply:
 - investing in tourist facilities, accommodation, healthcare, cosmetology, food and transport enterprises, the entertainment industry, etc.;
 - investing in supporting infrastructure.

In this case, the main tasks of the state and local governments at the stage of cluster development will be as follows:

1. Development of the supporting infrastructure of the territory;
2. Creation of favorable conditions for private investors (lack of administrative barriers, provision of land plots for facility construction, etc.);
3. Support for business initiatives.

The main tasks of investors in the regional cluster project:

1. The creation of unique and competitive tourism products that clearly identify the territory and attract more tourists;
2. Joint discussion of problems that impede the cluster development, development of proposals, initiatives to overcome them;
3. Implementation of joint projects, including joint marketing, with the aim of creating a well-known and recognizable appearance of the territory.

To ensure the functionality of the tourism cluster, it is necessary to create a list of services in such a way that a tourist can maximize the opportunities of the city potential from cultural-educational to sports and recreation services, which cause increased interest among tourists.

Along these lines, to tackle the issues of the usefulness of the travel industry bunch, it is important to furnish the domain with the following:

Engineering infrastructure (transport, water, heat and gas supply, wastewater);

Modern sports and recreation facilities;

Creation of places for having rest and walking in the favorable ecological places of the city.

Currently, tourism is one of the important economic recovery areas, providing a stimulating effect on the development of such areas of economic activity as collective accommodation services, transport, communications, trade, souvenir production, catering, construction, and more. In addition, the tourism industry development affects the solution of social problems: it provides the creation of additional jobs, preserves the country's historical and cultural potential and generates comfortable spaces. World experience in the development of urban tourism is based on history. Tourists are interested in the sights and monuments of architecture.

The implementation of the regional tourism cluster will allow creating favorable conditions for international and interregional communication. The project will create a modern business platform for business forums, conferences, fairs of various profiles. This will entail the development of the population's social and business activity, the advancement of merchandise and enterprises of producers in the Altai Territory, the attraction of large Russian and foreign investors.

Along with the development of the tourism sector, improving the training system and pursuing a balanced and effective advertising policy, the cluster approach will allow activating the activities of municipal enterprises of

various economic sectors to meet the growing needs for quality tourism services with an increase in the tourist flow.

Having said that, the environmental effects of tourism have obtained increasing attention over the last decade. With the increase in sustainable tourism and quite a number of initiatives for being environmentally friendly, both tourists and authorities should consider the significance of environmental management to keep the environment safe and secure.

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اتکای شدید بازار گردشگری بر عوامل محیطی و طبیعی

اولگا وروکونا*^۱، سابینا احمدخانووا^۲، سرگئی نیکی فوروف^۳، آلکسی تولماچف^۴، ایگور واخروشف^۵،

آفانسی سرگین^۶

۱-دانشگاه ایالتی آلتای، بارناول، فدراسیون روسیه

۲-دانشگاه فنی ایالتی داغستان، ماخاچکالا، جمهوری داغستان، فدراسیون روسیه

۳-دانشگاه ایالتی جنوب غربی، کورسک، فدراسیون روسیه

۴-دانشگاه آگراریان ایالت کوبان پس از آی.تی. تروپیلین، فدراسیون روسیه

۵-دانشگاه فدرال کریمه وی.آی. ورنادسکی، سیمفروپول، فدراسیون روسیه

۶-دانشگاه فدرال شمال شرقی پس از م. ک. آموسوف، جمهوری ساخا (یاکوتیا)، یاکوتسک، فدراسیون روسیه

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چکیده

هدف این مطالعه، بررسی اثرات اکولوژیکی و زیست‌محیطی خوسه گردشگری به‌عنوان محرک توسعه‌ی بازاری گردشگری منطقه‌ای است. صنعت گردشگری می‌تواند اثرات زیان‌بار و منفی روی اکوسیستم و محیط‌زیست داشته باشد. این صنعت، فشار زیادی به منطقه وارد کرده و باعث بروز اثرات فاجعه‌بار از جمله افزایش آلودگی، فرسایش خاک، تخریب زیستگاه‌های طبیعی، فشار شدید روی گونه‌های در معرض خطر و تشدید آسیب‌پذیری در برابر آتش‌سوزی‌های جنگلی می‌شود. با این حال، بخش گردشگری، نقش مهمی در حل مسائل اجتماعی اقتصادی منطقه از طریق اشتغال‌زایی، تضمین رشد اشتغال جمعیت فعال از نظر اقتصادی و بهبود رفاه ملت دارد. امروزه، گردشگری، یکی از محرک‌های بهبود وضعیت اقتصادی است که اثر مثبت و محرکی روی توسعه‌ی زمینه‌های اقتصادی نظیر خدمات اسکان، حمل‌ونقل، ارتباطات، تجارت، تولید سوغات، تهیه غذا، تولید کشاورزی، ساخت‌وساز و داروسازی دارد. گردشگری، برای توسعه اجتماعی اقتصادی بسیاری از مناطق فدراسیون روسیه مهم است. برای مثال، قلمرو آلتای، سطح بالایی از پتانسیل تفریحی-گردشگری در منطقه را داشته، دارای منابع طبیعی و گردشگری-تفریحی منحصر به فرد، میراث تاریخی و فرهنگی و رویدادهای فرهنگی، ورزشی، اقتصادی و سیاسی مهم می‌باشد. علی‌رغم این، آسیب زیست‌محیطی این صنعت پرسود، باید در نظر شود و تا حد امکان حداقل شود. در راستای هدف این مطالعه، روش‌های مختلف از جمله استراتژی تشخیص، ارتباط و همبستگی، استراتژی‌های منطقی عمومی، روش‌های خلاصه‌سازی علمی، مدل‌سازی، تحلیل و ترکیب، گروه‌بندی و مقایسه، تحلیل چارچوب نظارتی، منابع ادبی، داده‌های آماری و روش تطبیقی استفاده شد. در پایان، برخی توصیه‌ها در خصوص این صنعت محبوب، ضمن حداقل نگه‌داشتن آسیب زیست‌محیطی آن ارائه می‌شود.

*مؤلف مسئول

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