

Development of tourism in the Arctic regions of the Russian Federation: the environmental aspect

Artur Kuchumov^{1,*}, *Galina Karpova*^{2,*}, *Elena Pecheritsa*^{3,*} and *Marina Voloshinova*^{4,*}

¹Candidate of Sciences in Economics, Associate Professor, St. Petersburg State University of Economics, 191023, St. Petersburg, Russian Federation

²Doctor of Economics, Professor, St. Petersburg State University of Economics, 191023, St. Petersburg, Russian Federation

³Candidate of Sciences in Sociology, Associate Professor, St. Petersburg State University of Economics, 191023, St. Petersburg, Russian Federation

⁴Candidate of Sciences in Economics, Associate Professor, St. Petersburg State University of Economics, 191023, St. Petersburg, Russian Federation

Abstract. The article considers the opportunities for the development of tourism in the regions of the Arctic Zone of the Russian Federation in the environmental aspect. The authors examine the existing problems of the development of Arctic tourism in the Russian Federation, which include: low attractiveness of Arctic tourism for most Russian tourists, large investments with a long payback period, unacceptability of anthropogenic impact on the Arctic ecosystem, lack of modern passenger terminals, difficult transport accessibility of locations with specially protected natural areas. Analyzing the foreign experience of tourism development in the Arctic territories, the authors offer recommendations for the development of tourism in the Arctic zone of the Russian Federation. It also includes: support for indigenous peoples of the Arctic in order to increase employment of indigenous peoples while preserving their lifestyle, habits, and culture; assistance in cooperation and interaction with PR and marketing agencies, as well as design studios for creation of new souvenir lines; assistance in organizing excursions acquainting with the life of local residents, their traditional cuisine and local rituals, conducting educational seminars, organizing events for temporary residence in families of indigenous minorities; creation of information and tourist centers; development of events, ethnographic, and environmental types of tourism, intra-city tourism, addressing the lack of modern accommodation facilities and transport accessibility; assessment of environmental potential of specially protected natural areas in the Arctic Zone of the Russian Federation, so that the latter do not suffer from an influx of visitors; building of electric and hybrid polar expedition ships.

1 Introduction

The Arctic as a tourist route is not a popular destination among tourists. When choosing a destination for the next trip, Russian tourists limit themselves to the usual options: Moscow, St. Petersburg, Krasnodar region – or they choose from foreign destinations: Europe, Turkey, and Thailand. Despite the fact that the Arctic region has a unique and absolutely incredible flora and fauna, there is a stereotype about the eternal cold and endless ice, that the trip is long, and there is nothing to see. This is why tourism is a key part in the development strategy of the Arctic zone of Russia, which envisages the development of the Arctic until 2035 [1].

The development of tourism in the regions of the Arctic zone of the Russian Federation (AZ RF) is able to contribute to solving a number of social problems, such as low living standards of, unemployment, negative activity of young people in their spare time. For residents of the Arctic regions of the Russian Federation, tourism

means increased employment, income, education and culture, and life satisfaction.

In accordance with the Decree of the President of the Russian Federation No 400 of 02.07.2021 "On the National Security Strategy of the Russian Federation", the objectives of ensuring environmental safety and rational environmental management are achieved through the implementation of state policy aimed, including, on solving environmental problems and rational use of natural resources of the AZ RF [2].

Cooperation in tourism development requires complex and strenuous management, joint operation of all tourism subjects, despite their different interests and goals. Due to the fragmented nature of tourism, individual tourism entities can rarely act autonomously. It is unlikely that any of the individual tourism entities can own or control all the relevant components necessary to offer a tourism product. Thus, the creation of a favorable political and operational framework for the production, creation and ultimate delivery of a tourism product depends on a collaborative effort.

* Corresponding author: arturspb1@yandex.ru, karpovaga@rambler.ru, helene8@yandex.ru, voloshinova@unecon.ru

2 Materials and methods

Improving the competitiveness of the Russian tourism sector in the Arctic region will definitely lead to the acceleration of economic development of the Arctic territories of the Russian Federation [3].

The development of Arctic tourism is currently of great interest to Russian and foreign researchers.

For example, in [4], the authors examine trends in the development of Arctic expedition cruise tourism and current needs for Arctic research and monitoring, clarifying where exactly the expedition cruise tourism industry can have the greatest impact on providing data to the scientific community. The authors also compare the legal and regulatory context in Antarctica and in the Arctic and discuss how these differences might affect the widespread use of civil science.

The authors of [5] explore tourists' perceptions of the Arctic through the prism of the Instagram, a social network for photo sharing. The study focuses on the specific tourism experience of crossing the Arctic Circle in Rovaniemi, Finland, as in tourism it represents an "official" entry into the Arctic. The study also seeks to speculate on the future experience of crossing the polar circle with the development of new technologies, such as augmented and virtual reality.

The paper [6] discusses the external and internal factors that support or challenge the possible transformation of Arctic Sweden into a major ski destination in a changing climate. For instance, in Sweden (as in Norway, Russia, and Finland) there are conflicts in the sphere of land use when developing large ski resorts in the Arctic zones, especially when there are plans to build them on the territories of nature reserves and specially protected natural areas, which themselves are not only important attractions of natural and environmental tourism, but also traditional sources of livelihood for indigenous peoples of the Arctic territories.

Cooper E. A. [7] aims his study at exploring the potential of cultural centers as spaces that promote interaction between tourists and locals. This is done through the case study of the Katuak Cultural Center in Nuuk, Greenland. Combining the theories of cultural contact and accommodation, the article analyzes how locals and tourists use and perceive the cultural center. The author suggests ways to encourage positive interaction both at the local community level and at the level of regular visitors.

realities and opportunities of tourism in the Arctic are explored in [8]. The authors offer a descriptive overview of tourism statistics and its estimates.

The authors of these papers offer ideas on how to use the geographical, industrial and cultural identities of Arctic regions to present new "place innovations," configurations, content and communications that are attractive and accessible to both local people and tourists. The concept of "place innovation" helps to define the link between the identity of place identity and its main components: configuration, content and communication [9]. identity derives from the cultural, social, economic and geographical location of the tourist

destination [10]. configuration includes the architecture, design and other physical components of a tourist destination. content includes commercial, public and non-profit services and activities that are offered at a particular tourist destination. With innovatively combined, these components can attract existing and potential residents, tourists, entrepreneurs, investors and other stakeholders. The authors studying territorial innovation highlight the need for parallel integration of the processes of urban planning, destination design, business promotion, cultural development, social cohesion, etc., suggest to surely take into account environmental aspects in the development of tourism in the Arctic territories [11-17, 23, 24].

The article used methods of scientific literature analysis, statistical data analysis, logical and content analysis, search, systematic approach, and comparison.

3 Results

There is a worldwide ranking of popularity of the Arctic among tourists, in which Russia ranks fifth. The annual global flow of tourists to the Arctic ranges from 10 to 11 million people. The annual flow of Russian tourists to the Arctic is just over 1 million people. And only half of these tourists are visiting for the purpose of recreation; the other half are business tourists, that is, those whose stay in the Arctic has nothing to do with recreation.

By the number of tourists in the Arctic, the Russian Federation is overtaken by Norway with 3 million people per year, as well as Iceland and the United States (Alaska).

As for the AZ RF, according to Rosstat data for 2019 (see Figure 1), the Krasnoyarsk region hosts the most tourists. More than 850,000 people come there. More than 300 000 tourists annually visit the Murmansk and Arkhangelsk regions. The third place is occupied by the Republic of Komi and the Yamalo-Nenets Autonomous Region, which host more than 200,000 tourists annually. The least number of tourists visit the Nenets Autonomous District - just over 13,000 people. Figure 1 lists some performance indicators of tourist organizations in the AZ RF.

Region	Number of collective accommodations (c.a.)	Places in c.a.	Overnight stays in c.a.	People housed in c.a.	Russian citizens housed in c.a.	Foreigners housed in c.a.
Archangelsk Region	186	14 052	1 180 457	359 794	347 028	12 766
Krasnoyarsk Region	420	34 776	3 520 570	861 541	808 051	53 490
Murmansk Region	163	8 139	1 004 277	319 580	263 791	55 789
Nenets Autonomous District	8	241	33 058	13 018	12 685	333
Komi Republic	128	7 310	923 185	233 373	228 144	5 229
Chukchi Autonomous District	48	984	99 816	27 838	27 426	412
Sakha Republic (Yakutia)	218	5 756	738 206	201 496	194 039	7 457
Yamalo-Nenets Autonomous District	103	4 269	394 690	208 076	203 763	4 313

Fig 1. Indicators of the economic activity of tourist organizations in the AZ RF for 2019. Source: Compiled by the authors based on the Rosstat data [18]

According to the Rosstat data, there are more than 1,200 collective accommodation facilities throughout the

Arctic zone of the Russian Federation, and more than 100 active tour operators. In recent years, before the coronavirus pandemic, there was a positive trend in the influx of tourists and, accordingly, revenues of tourism businesses.

If we consider the development of tourism in the AZ RF realistically, there is a lot of difficulties. On the one hand, the development of Arctic tourism is a priority for the state, and above all it is associated with the development of infrastructure at the expense of small and medium-sized businesses, in their turn, creating jobs for the local population, thereby replenishing the regional budget. On the other hand, the task of popularizing Arctic tourism is quite challenging, due to the fact that it requires huge investments, and their payback period is quite long, more than 10 years. And here we should also take into account that a tenfold increase in tourist traffic to the Arctic is impossible, due to the fact that we cannot allow any anthropogenic impact on the environment of the Arctic zone caused by large flows of tourists, which may negatively affect the environment of the Arctic.

Nevertheless, the Russian Government has a plan to increase the tourist flow to the Arctic to 3 million people per year, which is a permissible limit in terms of anthropogenic load on the ecosystem and should not violate the environmental principles of management in the Arctic zone. The figure of 3 million tourists a year should be reached within 15 years. An example of the work that begun is the detailed development of a strategic document regulating all tourist destinations in the region by the municipality of Taimyr and the Norilsk Development Agency, the main aim of which is to calculate the anthropogenic load on the ecosystem of the Taimyr Peninsula, for which purpose special tourist counters are installed in Norilsk airport. There are plans to install identical counters in the seaport of Dudinka, with the help of which it will become possible to calculate and forecast existing and foreseeable tourist flows.

The main problem of the Arctic region in terms of the organization of tourist flows is the lack of logistics infrastructure: a modern passenger cruise port, the availability of which would allow consolidating tourist flows. Also, we need to consider the difficulties faced by tourists in reaching the locations of specially protected natural areas: it is necessary to develop infrastructure for civil aviation, in particular heliporter landing sites facilitating flights from one archipelago to another.

The concept of sustainability in the context of tourism has been interpreted and rethought in various ways in recent decades, based on the interests of people or institutions. However, the danger of using different interpretations of sustainable tourism can lead not only to a certain degree of mistrust between stakeholders, but even to conflicts. The lack of consensus on the importance of sustainability in the context of modern tourism has become a serious trap in the development of sustainable tourism. The different interpretations are the result of different perceptions of tourism within two worldviews: on the one hand, the view of companies and their focus on business, on the other hand, the view of

organizations and their attention to society and/or the environment. The first approach to sustainable tourism focuses on creating and managing businesses that can sustain themselves over a long period. From this perspective, the word "sustainable" is associated with supporting promotional programs that increase the number of tourists visiting tourist destinations. The second approach to sustainable tourism implies small-scale tourism, balanced with the social and natural environment, lowering the negative anthropogenic impact of tourism development. However, this view counteracts the concept of development of mass tourism and cannot alleviate the negative anthropogenic impact. Consequently, today in the Russian Federation, tourism, including in the Arctic territories, is considered as a tool for social and economic development. Tourism in this sense is used as a method of accumulating private and public revenues, which can later be used or invested in other development tools. From this point of view, tourism should not be small, since tourism is part of a broader policy aimed at creating a more sustainable society [15,19].

Experts warn that the growing tourist traffic in the Arctic increases the likelihood of a disaster such as an oil spill or sewage leak, that could wreak havoc in the pristine polar environment. According to experts, it is only a matter of time. For example, in 2004, a small cargo ship lost power while sailing through the Aleutian Islands of Alaska. When it ran aground, more than one million liters of fuel oil got into the water. Due to the remoteness, almost nothing could be salvaged [21]. Larger cruise ships carry much more fuel oil. The Arctic is subject to harsh and changeable weather conditions that complicate travel and pose hazardous to sailors. Sailing in high-latitude areas carries the risk of disruptions in of marine navigation and communication systems. In the event of an oil spill, accident, or equipment malfunction, the remoteness of the Arctic regions makes it almost impossible to respond effectively to emergencies [20]. Although there are arguments that such cruises increase awareness of climate change and the plight of endangered species such as polar bears, emissions from ships contribute to precisely these phenomena.

For a long time tourism has been considered a central principle of economic development plans in many countries, but it is dangerous to view tourism as just another Arctic development strategy, similar to mining or fishing, as this obscures the more direct link between tourist presence and activities and the livelihood and daily experience of local residents. With careful consideration and public participation and cooperation, tourism can be used to generate positive results through knowledge sharing and investment in nature conservation, but creating such mutually beneficial outcomes does not seem to be a priority for large companies. And while Arctic cities and towns, usually located in rural areas with harsh climates, sparse population, long distances, and scarce infrastructure, struggle to find innovative solutions to attract potential residents, tourists, entrepreneurs and investors, in a region where most of tourism is almost entirely focused

on eco-friendly activities and cultural tours, visitors should be even more diligent to take into account the possible impact they have on the areas they are interested in. In other words, even the boldest desires cannot justify the harm they cause. As an example, we can consider Svalbard, one of the Arctic zones most severely affected by climate change to date. Steadily rising temperatures have caused more avalanches, the worst of which destroyed an entire street of residential buildings. Climate change is having a huge impact on the Arctic, and almost nothing on planet Earth is changing as quickly as the Arctic sea ice. Satellite monitoring of ice levels began in 1979, and since then, every new report is frightening. Since 1980, temperatures in the Arctic have risen twice as much as in the rest of the world. 30 years later, both summer ice extent and thickness have almost halved, and nearly three-quarters of the ice has disappeared since 1980. In 2012, the ice area reached a record low level since monitoring began. One of the reasons for the rise in temperature in the Arctic is the self-sustaining loop, in which ice-covered areas are replaced by open water. This leads not only to less solar energy reflection, but also to more energy absorption by open water. Thin and cracked ice is also more susceptible to wind and currents, which bring warm water to the surface, boosting the melting effect. Increased ice melt not only contributes to local warming, but also affects ocean currents, leading to changes in our global weather systems and affecting climate beyond the Arctic. These effects are difficult to predict, and we do not know what impact they will have on overall sea-ice reduction in the future [22].

4 Conclusions

Thus, using the cluster campaign for the development of tourism in the regions of the Russian Federation, taking into account the environmental aspect, it becomes possible to recommend the implementation of the following measures.

To support the indigenous small-numbered peoples (ISP) residing within the AZ RF. Due to the fact that souvenir products made by the ISP in their current form are practically not in demand among tourists because more than half a century has passed since the time of their design and now they are not attractive for modern tourists and visitors to the Arctic territories, as they do not fit into their interior solutions and do not correspond to their aesthetic preferences, it is proposed to expand the range of souvenir products and traditional crafts of the ISP. In order to help the ISP in preparing souvenir products of appropriate design, as well as with marketing for their promotion, it is proposed to organize assistance in cooperation and interaction with PR and marketing agencies, as well as design studios to form new souvenir lines.

To develop event, environmental and ethnographic tourism. We propose organizing assistance to the ISP in the creation of modern ethno-settlements in terms of marketing, assistance with the organization of tours to get acquainted with the life of local residents, their

traditional cuisine, participation in local ceremonies, and conducting educational seminars for the local population of the AZ RF preparing guidebooks on tourist routes, as well as organizing events for temporary residence in the families of ISP to get acquainted with their lifestyle.

At the same time, the main goal of the first two activities is to increase the employment of ISP as well as to preserve their lifestyle and culture.

To develop the intracity tourism in the cities of the AZ RF, we propose to develop intra-urban tourism. Many cities in these regions lack unified structures uniting and integrating participants of the tourist cluster into a single conglomerate, so there is a need for the creation of information and tourism centers. Information and tourism centers should cooperate with the activities of museums, souvenir shops, catering enterprises (forming culinary trends specific to the ISP). Such measures should be aimed at improving the level of service for tourists in the territories of the AZ RF and should be one of the priorities in the activities of local administrations.

To solve the problem of the lack of modern accommodation and the development of transport infrastructure, it is proposed to attract construction organizations on mutually beneficial terms within the framework of public-private partnership for the emergence of new or reconstruction of old accommodation facilities, as well as for the construction of heliports that facilitate flights from one archipelago to another.

The potential of Arctic tourism, which is an important component of sustainable development of the AZ RF regions, consisting primarily in the unique nature of the Arctic, is used rather poorly. At the same time, there is a threat of degradation of fragile environmental system with the development of tourism in the Arctic. Two major limitations of Arctic tourism: environmental and logistical (poor accessibility, high cost), lead to marketing and management problems. Following the example of Scandinavian countries, it is necessary to assess the environmental capacity of specially protected natural areas in the AZ RF, so that the latter do not suffer from the influx of visitors, as is already partially happening in the popular Teriberka in the Murmansk region.

To neutralize the threats of fuel oil spills from cruise ships, construction of hybrid (equipped with batteries and hybrid power plants) polar expedition ships should be prioritized (following the example of Norway and France [21]).

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