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Recreational space as a factor of sustainable development of coastal geosystems of the Krasnodar region

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Abstract. In this article, we will discuss the problems of high recreational pressure on beach areas, due to their deficit. Natural erosion of the coastal strip and other destructive processes, both natural and anthropogenic, lead to the need for an early and comprehensive analysis of the reviewed geosystems from different points of view. Comparison between the Azov and Black sea coasts of the Krasnodar territory reveals differences in the potential and dynamics of development of the tourist and recreational complex of these territories. Detailed segmentation and analysis of the status of beach areas was carried out according to the administrative division of the region. The paper analyzes questions related to the procedure for making certain managerial and organizational decisions that should have an effective impact on the work of the tourist and recreational complex. Coastal geosystems of the Krasnodar region have undeniable features and significance in contrast to other regions of Russia. In this regard, there is a need to divide the region into clusters.

1. Introduction

Recreational space is a part of social space. Like recreational time, it is closely related to the subject of recreational activity. Therefore, we can talk about the recreational space of a person, a group of people, the population of a region, a country, and so on. The space is formed by tourists and recreation organizers [1]. The formation of recreational space is based on selectivity: from a broad selection of objects and properties of reality those are chosen that correspond to the recreational needs, requirement and conditions of the activity is selected.

Traditionally, the concept of a tourist and recreational complex (TRC) includes a combination of various accommodation, vehicles, catering facilities, entertainment, educational, business, health, sports and other purposes, agency that provide excursion services and services of guides, interpreter service. TRC, in addition to the above-described objects, also includes a recreational component, which is represented by various natural resources, infrastructure facilities in the tourism sector, offering services to the tourists and local residents. The answer to the question of what specific elements the TRC consists of is also quite unclear.

The main components of tourist and recreational resources are health, educational, and sports resources [2]. Development of recreational space is the level of transformation of the original natural space in the process of recreational activities depends on many factors. Moreover, the development of recreational space can be both natural and socio-cultural [3]. Any recreational space has an inherent evolution, it can be said that the recreational space has a certain life cycle.



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2. Materials and methods

TRC can be described as a complex system of socio-economic relations between enterprises and organizations that make up this complex on a certain territory, which has tourist and recreational resources and appropriate infrastructure, which needs effective management aimed at the rational organization of high-quality services in the field of tourism in order to make a profit. At present, in a market economy, this is very important, especially since the tourism industry is one of the most promising and quite dynamically developing sectors of both the national and world economy.

In the process of tourist and recreational development of the territory, creation of a TRC is inevitable and objectively necessary, because TRC is a higher stage of the organization of tourist and recreational economy. As a rule, there are two groups of prerequisites for the formation of a TRC – natural and socio-economic.

TRC is not only a territorial concept, but also an economic and managerial concept. It is important to note that the functioning of the TRC depends not only on the internal components of the region, but also on factors that are not formally within the competence of the region. These include the policy of the Federal Tourism Center, global trends and development factors, natural disasters etc.

The system-forming elements of the TRC are economic objects that are part of the tourism industry; tourist resources as a factor in the formation and satisfaction of the need for tourism and recreation; recreants (tourists) as consumers of a tourist product.

The development of the recreational sector of the economy in the region will automatically lead to the following processes:

- 1) accelerated development of the economic structure of a certain part of the territory due to the receipt of additional revenues to the local budget, which can be directed to further development of the region;
- 2) additional jobs due to recreational services both in the recreational sector of the economy and in industries related to recreation only indirectly; reduced unemployment, preventing migration of population from the region;
- 3) improvement of infrastructure, public utilities, road construction;
- 4) a significant change in the structure of the balance of monetary income and expenditures of the population across the country in favor of recreational areas;
- 5) expanded the demand for goods of local producers, stimulating the development of local industry;
- 6) improvement in the environmental situation in the region, ensuring the financing of environmental issues;
- 7) growing list of specialties demanded in the region;
- 8) growth of the region's income in the form of foreign currency through the development of foreign tourism.

The implementation of all these processes will significantly reduce the socio-economic tensions in the region and will be one of the factors for its sustainable development.

Traditionally, the purpose of visiting the Azov and Black sea coast within the Krasnodar region is a beach and swimming holidays [4]. Therefore, we can say that the main and most exploited recreational resource of the coast are beaches.

The most important for the successful development of tourism in the coastal zone of the Krasnodar region is the situation in the beach area. As evidenced by market trends, tourists are making increasingly high demands, namely: sanitary conditions, landscaping, beach equipment and compliance of the territory with the rules for protecting people's lives on water. The successful development of the most popular beach holiday zone in our region is impossible without protecting the coast from erosion and the creation of new (artificial) beach areas.

3. Results

The total length of the beaches of the Azov and Black sea coast of the Krasnodar region is about 100 km, while the length of the coastline of the Black and Azov seas in the region is about 1,200 km [5]. In the Krasnodar territory, there are two types of beaches by origin:

a) natural (natural origin), among which there are sand, shell, pebble, gravel-pebble;
b) artificial: bulk - in Tuapsinsky district, in the villages of Lermontovo and Nebug; artificial hydraulic structure - wave-quenching pebble beach in the village Myshako

In 2015, 534 beaches were operated in the territory of the Krasnodar territory, including 122 public beaches and 412 departmental beaches. Most of the tourists arriving in the Krasnodar region visit the resorts of the region for beach holidays. All other types of tourism have a secondary role.

Since 2011, the load on the beaches is increasing every year, and there are fewer places to relax. In 2015, this figure was 4.975 sq. meters per 1 person, with a standard load of 5 sq. meters of beach per 1 person.

The most acute problem with the shortage of public beach areas is in the Temryuk district (3.21 sq. meters per person), Tuapse district (2.9 sq. meters per person), Shcherbinovsky district (2 sq. meters per person), Slavyansky district (2 m² per person), the resort city of Gelendzhik (1.9 sq. meters per person) and Primorsko-Akhtarsk district (1.1 sq. meters per person). In other municipalities of the Krasnodar territory, such as the Yeisk district (5 sq. meters per person), the city of Novorossiysk (8.78 sq. meters per person), the resort city of Sochi (12 sq. meters per person) and the resort city of Anapa (12.86 sq. meters per person), this problem is currently absent [6].

The high load on beach areas leads to the fact that every year during the peak summer season, sanitary services are forced to close beaches due to excessive microbial infection of coastal waters. All this is due not only to the high recreational load on the beaches (given the uncontrolled revenue of unorganized tourists), but also to interruptions in the operation of cleaning facilities.

A separate serious problem is the shortage of beach areas and natural erosion of the coastline. Under the influence of natural event, the beach material is carried out to a depth and moved by currents along the coast.

Today, the Krasnodar region is in need of an additional beach area (even without taking into account the annually increasing tourist flow) with a total volume of 1068007 sq. meters, including: Temryuksky district 252270 sq. meters, Tuapse district 113639 sq. meters, Shcherbinovsky district 24606 sq. meters, Slavyansky district 54150 sq. meters, the resort city of Gelendzhik 552256 sq. meters and Primorsko-Akhtarsk district 71086 sq. meters [6].

The beaches of the Krasnodar region during the high season receive a huge flow of tourists. In recent years, a lot has been done to improve the level of beach service and landscaping. The beaches of major hotels, holiday centers and resorts, as a rule, make the best impression. At the same time, the huge anthropogenic load associated with the intensive development of tourism and construction, harms many beaches.

The main resorts of the Black Sea within the Krasnodar region have the following coastline length: the resort city of Sochi 146 km, Tuapse district 60 km, the resort city of Gelendzhik about 100 km, the city of Novorossiysk 57 km, the resort city of Anapa 72 km. Along the Black Sea coast, the beaches have an average width of 5-7 m. The material is usually a mix of stone fragments. Relatively wide beaches are available only in concave sections of the coast. Sediments are represented here by a more rounded and sorted material.

The beaches of the black sea coast of Krasnodar region can be divided into five districts:

1. Anapa city District: beaches of Anapa, Blagoveshchenskaya village, Vityazevo, Dzhemete, Sukko, Bolshoy and Maly Utrish, also beaches of Volna, Veselovka (which are geographically related to the Temryuk district) and Bugaz spit.

2. Area of the city of Novorossiysk: beaches of Novorossiysk, villages Durso, South Ozereyevka, Shirokaya Balka, Myshako.

3. District of the city of Gelendzhik: beaches of Gelendzhik (including Blue Bay microdistrict), villages Dzhankhot and Betta, Kabardinka, Divnomorsky, Praskoveyevka, Krinita and Arkhipo-Osipovka.

4. Tuapse district: beaches of city Tuapse and villages Dzhubga and Novomikhailovsky, Lermontovo, Olginka, Nebug, Agoy, Dederkoy and Shepsi, Bay Inal.

5. District of the city of Sochi. Beaches of Lazarevskoe district in the neighborhoods Vishnevka, Magri, Makopse, the Soviet-kvadzhe, Adler, Saloniki, Golovinka, Vardane, Lower Horse, Loo, Dagomys, from Chemitokvadzhe to Yakornaya Shel, in the villages of Volkonka and Detliazhka. The beaches of the Khosta district in the neighborhoods Hosta and Kudépsta. Beaches of the Adler district in the Adlerkurort, beaches of the Imeretinskaya Bay: village of Veseloye.

According to the portal of the government of the Krasnodar territory, in the Krasnodar region, work is underway to classify beaches. The measures are aimed at increasing the competitiveness of tourist industry facilities and providing consumers with the necessary and reliable information about the quality of services offered. The procedure of classifying beaches was established by the Order of the Ministry of culture of the Russian Federation dated July 11, 2014. No. 1215 "on approval of the procedure for classification of tourist industry objects, including hotels and other accommodation facilities, ski trails and beaches, carried out by accredited organizations". The current order of classification of tourist industry objects provides for three categories of beaches: the first, second and third. The highest category is the first. For the convenience of tourists, a flag corresponding to the assigned category is displayed at the entrance to the beach or in the most accessible place for informing consumers: 1st category has a blue flag, 2nd category has a green flag, 3rd category has a yellow flag. The category of the beach depends on its equipment inventory and equipment that provides an appropriate level of comfort for guests, as well as the range of the provided services. At the moment, it is necessary to establish work on the facilities construction and classification of beaches in the Krasnodar territory.

The rating of beaches of the Black Sea does not exist, if desired, you can use the rating of the TurStat agency (TOURist STATistics), which researched the beach holiday market and found the most popular and best beaches in Russia in 2016. According to the rating, only 4 beaches of the Azov and Black sea coast were included in the Top 10 in Russia, which, given the number of beaches, tourists and the coastline, is not the best indicator.

After evaluation of the beaches of the Black sea coast of the Krasnodar territory, it should be taken into account that their condition directly depends from the situation of the Black Sea. The Black Sea region is one of the main recreational areas of the Krasnodar territory. Currently, this zone is experiencing a strong anthropogenic effect. The waters of the Black Sea are characterized as "moderately polluted", but, unfortunately, they have a predisposition to increase pollution [4].

The beaches of the Black sea coast of the Krasnodar region are quite diverse, but there is an array of factors that negatively affect the development of beaches and swimming recreation in this territory. These include a narrow coastline, a large number of wild, uncomfortable beaches, and special attention should be paid to the problem of pollution of beaches. At the moment, the overall condition of beaches depends more from private entrepreneurs who rent beaches, so the beaches of cities such as Gelendzhik and Sochi are in a satisfactory condition. It should also be noted that the average congestion on the beaches exceeds the sanitary standards norms by 2.7 times. So, the Black Sea coast of the Krasnodar region is in need of new beaches and infrastructure on existing beaches that are not officially used. This, in turn, will lead to a significant inflow of investment and, consequently, to increased competition, and therefore to an increase in the quality of service.

The Azov Sea coast of the Krasnodar region is less popular than the Black Sea coast. The coast of the Azov Sea is a promising area of the Krasnodar territory, which has unique recreational opportunities. On the coast and its multiple spits and peninsulas, there are sandy and shell beaches, and in the nearby estuaries, lakes and bays there are concentrated large reserves of therapeutic silts and mud; there are also sources of mineral water.

Over the past few years, the Azov Sea coast of the Krasnodar region has shown significant improvements in the development of TRC. This is largely due to the policy of redistributing tourist flows, which practiced by the Ministry of resorts, tourism and Olympic heritage of the Krasnodar territory.

The specific weight of the Azov recreational area in the total area of the region is 10.9%. The recreational capacity of the territory (the ability of the territory to provide recreation and health restoration for a certain number of recreants per year without serious environmental consequences) is

2.5–3.0 million people [7]. The capacity of collective accommodation facilities in comparison with the regional indicators is not very large.

But you need to keep in mind that collection of the official statistic is not takes into account all accommodation facilities: individual accommodation facilities, the number of which exceeds the number of collective accommodation facilities, and therefore their capacity.

In our time, among the municipal districts within the Azov sea coast of the Krasnodar territory, the leading position is occupied by the Temryuk district (washed by two seas). In terms of the number of specialized accommodation facilities, Temryuk district occupies a leading position in the Azov recreational zone, but the number of places for accommodation and their comfort are much lower than in the Black Sea resorts. This does not prevent it to take the tourists, the number of which is higher than in other resort areas of the region, but many times lower than the number on the Black Sea coast. The number of tourists visiting this district is steadily growing; the number of hotels and similar accommodation facilities is also growing. Recreation in the resorts of the Krasnodar region is a long-term practice of many generations of citizens of the Russian Federation.

The natural conditions of the Taman peninsula are favorable for the development of recreation. The development of recreation in the Temryuk district can provide a significant increase in retail trade and paid services by growing of tourist spending. But recreational institutions of the Temryuk district are mainly represented by recreation centers and are designed for seasonal operation in the warm season.

Yeiskiy district is of particular importance in the development of the Azov sea tourist zone. The catalyst for this development was both the available natural tourist and recreational resources, and managerial and administrative factors. Special attention is paid to the development of the Dolzhanskaya village, in particular, tourist and recreational facilities using the Dolzhanskaya spit. Dolzhanskaya village is located in the NW part of the Yeisk district. Dolzhanskaya village is located 36 km from Yeisk, 290 km from Krasnodar. The nearest railway station is located in the city of Yeysk, the nearest airport are Rostov-on-Don (179 km) and Krasnodar (290 km). The airport in Yeisk is not currently used for receiving civil aircraft [8].

Yeisk district has traditionally been known as a resort since the Soviet period. The city of Yeisk and the village of Dolzhanskaya have the strongest positions for the development of tourist and recreational activities within the municipal district.

The beaches of the Azov Sea coast are now objectively the main recreational resources that attract the tourists. As mentioned earlier, the Krasnodar region is working on the classification of beaches [9]. The results of the classification of beaches of the Azov Sea coast of the Krasnodar region reflect the territorial division of the Azov sea zone: at the moment, we can talk about two main developed areas of beach and bathing recreation – Yeisk and Temryuk districts. According to the rating of the agency "Turstat" in 2016, the beach of the Dolgaya spit takes the seventh place. However, the main difficulty in evaluating this rating is that specific section of beach is included in the rating. The beach areas used by tourists in the resort *Dolgaya Spit* are rented from several organizations and the level of comfort at different parts of the beach is very different. One of the beaches of the Azov coast that passed classification is in the village Dolzhanskaya, it is a beach resort "Kazachiy Bereg".

In general, the resource potential of the territory of the Azov recreational zone is used in the development of beach-bathing, extreme sports and agro-ethnographic types of tourism. In our opinion, when developing the tourist and recreational complex of the Azov Sea coast, more attention should be paid to cultural and educational components of the recreational activities. The development of a network of excursion routes (radial), the creation of cultural and educational attractions will get the tourists by diversifying the offers for spending time, increase the average duration of tourists stay in the territory of resorts, as well as more evenly distribute the flow of tourists in time and space – that is, it will reduce the load on the beach area of resorts to some extent.

4. Discussion

It is expected that with the increasing popularity, development of transport infrastructure and improvement in quality of tourist beaches, "the pressure" on coastal areas will be significant, maybe

even several times exceeding the current level. As a result, not only a reduction in the effectiveness of the recreation, but also the following degradation of the natural and cultural components of the recreational resource are inevitable. Using the mechanisms of the Federal program, the Krasnodar region is able to increase its beach area, which will prevent the destruction of the natural recreational resource (beach), reduce the environmental load in the territory, increase the beach thickness, improve the attractiveness of beaches, and as a result – increase the tourist flow in the region.

The most promising direction for the development of nature management within the coastal zone of the Krasnodar region is the development of additional types of tourist and recreational activities. That will allow to redistribute the flow of recreants, which will reduce the load on the natural complexes of coastal geosystems in the recreational industry. We are talking about such types of recreational using as marine tourism, agrotourism, gambling tourism.

Sea tourism. Cruise and yacht tourism has become one of the new and economically profitable directions in water transport in the Krasnodar territory.

Yacht tourism is considered more profitable than usual, cruise and excursion, because foreign cruise ships needs hundreds of convenient berths, hotels, coastal yacht parking, new water routes, and this is additional revenue to the budget of resort cities. Passengers of yachts, as a rule, when they go ashore, need to rent a hotel, to have lunch at a restaurant, to refuel, to buy the souvenirs, to visit local museums – all these are now unclaimed services, lost profits. While the network of marinas on the Black sea coast does not exist – yachts from the Mediterranean Sea reach the Turkish port of Trabzon and turn back. Every year, passengers of cruising yachts leave up to \$200 million in Turkish ports. Without a developed system of yacht tourism and recreation of coastal navigation, Russia cannot compete even with Turkey, where 70 yacht ports are already being designed and built.

The Black Sea coastline of the Krasnodar region has its own characteristics: there are almost no natural bays. The prospect of building new marinas according to international standards will certainly attract foreign yachtsmen to the Krasnodar territory, who will be able not only to visit the Black sea coast cities, but also to continue their journey along Russian rivers with access to the northern seas.

The concept of yacht tourism development in the Krasnodar region supposes that 11 equipped yacht marinas (four basic and seven guest marinas) will be built on the Black Sea coast. In addition to Sochi, they will be located in the Tuapse district, Gelendzhik, Novorossiysk and Anapa (Blagoveshchenskaya station, Vysoky Bereg microdistrict in Anapa, Cape Bolshoy Utrish, Aleksino village near Novorossiysk (the largest one), Thin Cape in Gelendzhik, village Krinitza, Lermontovo, village 1 May near Tuapse, Lazarevskoye, the port of Sochi and the new port in the Imeretinskaya Bay near the border with Abkhazia republic. Each of these marinas will accommodate from 300 to 1500 cruising yachts [2].

Port modernization projects are available in all coastal cities. Currently, cruise liners come only in Sochi, sometimes in Novorossiysk, but in the future, they may come in Anapa, Gelendzhik and Tuapse. It can be concluded that a new and cost-effective direction in water transport in the Krasnodar territory, despite the listed problems, will develop slowly, but still.

Agrotourism (agricultural tourism). Agricultural tourism is an independent type of tourism based on special forms of leisure activities (for example, caring for pets, sampling local cuisine, hiking and picnics in the village's areas) and motivation for tourist trips (a desire for familiarity with the countryside and rural lifestyle). The types of tourism that have a direct connection with rural areas include: recreational, active, educational and environmental consumer tourism, gastronomic tourism, ethnographic tourism, activities in country and garden area, etc. In the territory of the Krasnodar region, there is active work ongoing on development of agrotourism.

Agrotourism is a complex stimulus for the development of rural areas and the region's economy and contributes to creating a positive image of the territory, making it attractive not only for tourism but also for investment in other sectors of activity. It increases tax revenues in budgets of all levels, improves employment for citizens, raises educational and cultural level of the population [10].

Gambling tourism. One of the promising trend of recreational development of the investigated territory is the development of gambling business. Initially, the gambling zone was located on the coast

of the Azov Sea in two districts: Shcherbinovsky (one of the most backward districts of the Krasnodar territory) and Azov city (Rostov region).

The area of the zone is 2000 hectares, the estimated capacity of the project's accommodation facilities is 25000 people. The estimated amount of investment until 2040 year is 380 billion USD. Krasnodar region has invested 400 million rubles in infrastructure development. By 2014, three casinos were opened for 4 thousand people. The amount of investment of the two investors by the middle of 2016 was about 2.4 billion rubles, and the first two casinos have already paid off. The current accommodation facilities are designed for 110 people. Every day the zone is visited by an average of 500-600 people, but the flow is almost not growing.

In May 2016, a federal bill was signed on the liquidation of Azov-city, which was extended until January 1, 2019. It was decided to move the gambling zone to Sochi. Due to the gambling zone, the authorities expect to attract additional tourist traffic to load accommodation facilities and tourist facilities, which is quite problematic without it, because we are talking about ski resorts that are not popular in the summer. The idea to attract gamblers and rich tourists to Sochi was publicly approved and supported by Rosturizm. Gorki Gorod is an all-season mountain resort, a new tourist brand in Russia, named the best megaproject in the category "Integrated development of territories" by Urban Awards in 2011.

5. Conclusion

We came to the following conclusions: a distinctive feature of the tourist and recreational complex of the Azov and Black Sea coast is the concentration of millions of tourists on a narrow strip, while much larger territories with unique tourist and recreational resources are used partly for the organization of one or two types of recreational activities. In view of this, a comprehensive policy is needed to attract recreationists and tourists to the region, not only in the areas used, but also offering a new tourist and recreational product, using the existing opportunities and potential of the tourist and recreational complex. The first steps in this direction have already being taken. An example is the introduction of a resort fee in the most visited municipal areas and the intensification of measures to develop alternatives to beach and swimming recreation [11].

The strategic mission of the development of the tourist and recreational complex of the coastal zone of the seas within the Krasnodar region are:

- ensuring comprehensive development of existing and new resort areas;
- providing conditions for business development and creation of new accommodation facilities in the most demanding quality and mass segment of tourists;
 - development and promotion of a unified advertising and marketing concept of resorts on the Russian and foreign tourist markets, focusing on the specifics of particular resort territories;
- ensuring the development of existing and construction of new enterprises of the TRC, to overcome the problem of seasonality; development of new types of tourism, additional services and entertainment industry;
- modernization of infrastructure and improving the quality of service at existing facilities of the tourist and recreational complex;
- modernization and expansion of the territory's life support infrastructure;
- solution of the problems of beaches by carrying out the necessary coastal protection measures, creating and equipping new beaches, as well as getting rid of non-purpose beach structures.

Today, the beach tourism within the Krasnodar region territory is one of the most significant and dynamically developing types of tourism. A huge number of factors, both internal and external, facilitates this [12, 13].

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References

- [1] Volkova T 2018 Dolgaya spit: Tourism on the Azov seacoast *Journal of Environmental Management and Tourism* **9(6)** 1228-1235 DOI: 10.14505/jemt.v9.6(30).12
- [2] Kuskov A and Lisikova O 2016 *Balneology and health tourism: educational manual* (Rostov-on-Don) pp 54-56
- [3] Gura D, Kuzyakina M and Gribkova I 2019 Assessment of bioclimatic comfort of the Krasnodar Krai *IOP Conf. Series: Earth and Environmental Science* **403** 012176 DOI: 10.1088/1755-1315/403/1/012176
- [4] Antipceva J, Volkova T, Lipilin D and Yarotskaya E 2019 Tourist potential of specially protected areas of the Black Sea coast *14th MEDCOAST Congress on Coastal and Marine Sciences, Engineering, Management and Conservation* **1** 233-240
- [5] *Official website of the Ministry of resorts, tourism and Olympic heritage of the Krasnodar region*, retrieved from: www.kurort.krasnodar.ru
- [6] Maksimov D, Belikov M and Minenkova V 2016 Statistic and dynamic of tourism and recreation system development in the region: Krasnodar region, in: *Collection of scientific works of Kuban State University* ed D Maksimov (Krasnodar: Kuban State University) pp 150-180
- [7] Koshutina A 2015 Analysis of the quality of recreation in the Azov recreational zone, in: *Geographical research of the Krasnodar territory: Collection of scientific works* vol 9 (Krasnodar: Kuban State University) pp 281-285
- [8] Arakelov M, Arakelov A, Yayli E, Yayli D, Merzakanov S, Gogoberidze G, Dolgova-Shkhalakhova A, Ahsalba A, Zhiba R and Krylenko M 2017 *Advances in current natural sciences* **12** 106-110
- [9] Kasyanov V, Merzakanov S, Arakelov M and Ahsalba A 2018 Tourist attraction of the beach resorts of Krasnodar region: the potential and prospects for development *Historical and Social-Educational Idea* **10(6/2)** 81-86 DOI: 10.17748/2075-9908-2018-10-6/2-81-86
- [10] Solomina Z and Shastina G 2016 Rural settlement recreational space *Bulletin of Saint Petersburg University. Series 7. Geology. Geography* **2** 85-97 DOI: 10.21638/11701/spbu07.2016.208
- [11] Shipilova N A, Savenko A A, Shikhovtsov A A, Sekisov A N, Popov R A and Mikheev G V 2017 Organizational and technological aspect of innovation development of resort-Tourist locations of the Russian black sea *International Journal of Applied Business and Economic Research* **15(23)** 173-183
- [12] Kuzyakina M, Gura D, Sekisov A and Granik N 2019 *Advances in Intelligent Systems and Computing* **983** 403-416 DOI: 10.1007/978-3-030-19868-8_41
- [13] Kuzyakina M, Gura D and Zverok D 2019 *E3S Web of Conferences* **138** 02004 DOI: 10.1051/e3sconf/201913802004