

Strategy for the functioning of the tourist ecological and recreational cluster of rural areas of the Rostov region

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Abstract. The article discusses the main aspects of the strategy for the functioning of the tourist eco-recreational cluster in rural areas of the Rostov region. A review of the research base on which research related to the study of tourism clusters is based. The possibility of functioning of the ecological and recreational cluster is also substantiated, its functions and significance for the development of inbound and domestic tourism, the economy and the social sphere of rural areas are determined. The zoning of the territory of the Rostov region according to the prevailing types of emerging ecological and recreational clusters is proposed and the specifics of their activities in rural areas are indicated. The article also presents a typical scheme for the functioning of a tourist ecological and recreational cluster with the identification of the main relationships of objects of a different nature. The economic and social effect of the organization of ecological and recreational clusters in rural areas is shown. Keywords: tourism cluster, eco-recreational cluster, rural areas, domestic tourism, eco-tourism, zoning.

1 Introduction

One of the most effective tools for tourism development is the implementation of the cluster approach, which ensures the harmonization of private and public interests, diversification of risks and better use of regional potential.

The clustering process is the consistent adoption of a number of management decisions related to the specifics of the industry, composition of participants, location, capacity and a number of other indicators. A rational cluster policy in the field of tourism development helps to increase its competitiveness and innovation.

An ecological and recreational cluster is a form of a tourist cluster, a system of interconnected natural resources, tourist enterprises, excursion routes, eco-trails, transport networks, accommodation facilities, catering establishments, tourist information centers and government bodies located in a certain area.

At the same time, it should be noted that ecological tourism is the most optimal form of nature-oriented tourism. This type of tourism is implemented not only in specially protected natural areas, but also in other natural objects, including rural ones.

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The formation of an ecological and recreational cluster takes place under certain conditions, which include the degree of economic development of the region, the density of the transport network, the population of the territory, the level of income of the population, which allow maintaining and increasing the demand for an ecological tourism product.

The functioning of ecological and recreational clusters can become a "catalyst" for the sustainable development of rural areas and a "growth point" for the tourism industry, the economy and the social sphere of municipal districts.

The purpose of the article is to analyze the strategy of functioning of the tourist ecological and recreational cluster in rural areas of the Rostov region.

The main objectives of the study:

- analysis of the research base of the development of tourism clusters;
- characterization of the conditions for the formation of an ecological and recreational cluster in rural areas of the Rostov region;
- zoning according to promising types of ecological and recreational cluster in rural areas;
- modeling the structure of emerging tourist ecological and recreational clusters and determining the mechanism for effective interaction of structural links.

2 Background and methods

The issue of the cluster approach in tourism is becoming increasingly relevant. In world and Russian practice, the cluster approach is a tool for the sustainable development of territories. This is especially true for rural areas, which are often economically depressed. For them, the development of tourist clusters can become the engine of integrated development. In rural areas, the ecological and recreational orientation of tourist clusters is optimal. The formation of the concept of this article is based on a review of scientific works by a number of authors. First of all, attention is drawn to the scientific works, which outline the basic approaches to the theory of territory clustering. For planning and managing tourist clusters in natural destinations, as well as taking into account the social characteristics of the area, the views of Marta Derek, Edyta Woźniak, Sylwia Kulczyk, 2019 [1], as well as Juan B. Duarte-Duarte Leonardo, H. Talero-Sarmiento Diana C. Rodriguez-Padilla, 2021 [2]. Research experience in the development of tourist clusters in Russia is reflected in the works of L.N. Kazmina, V.S. Makarenko, V.V. Provotorina, T.N. Grigorenko, A. Petrenko, 2021 and others [3, 4]. A sustainable trend in the world is the growing popularity of rural areas for tourism. This is stated in the writings of N.T. Farsani, S.S. Ghotbabadi, M. Altafi H., Choo, J.F. Petrik, [5, 6, 7]. In scientific works, attention is paid to the practice of rational nature management in the organization of tourism in rural areas [8]. When forming tourist clusters of an ecological and recreational nature, an ecological approach should be taken into account, especially when it comes to protected natural areas [9]. This study takes into account the features of the practical experience of organizing tourism in areas that are specially protected [10, 11, 12]. A number of scientists emphasize the close connection between tourism in rural areas near popular, large natural objects and environmental degradation, 2020 [13, 14]. At the same time, the need for a balanced policy in planning tourism in natural areas is emphasized.

A review of literary scientific sources showed the recognition of the importance of sustainable development of tourism [15, 16, 17]. It is important to understand the optimal interaction between the implementation of the needs of tourists, the preservation of the environment and the socio-cultural protection of the local population. This statement is fundamental in the concept of sustainable tourism development. Tourism in rural areas can positively influence their economic development. The formation of clusters in the tourism sector can attract investment and develop many additional industries [18, 19, 20]. A tourist cluster should be distinguished by a common social and cultural environment, specialization, geographically concentrated tourism enterprises and related organizations, as well as a single

management mechanism [21, 22]. It should be noted that the tourist cluster of ecological and recreational orientation is connected with the general principles of organizing ecological tourism and the general principles of organizing tourism in rural areas [23, 24, 25].

The review of scientific works in the field of tourism clusters shows the insufficient degree of research and the need for further development of this issue. The research methodology is based on the application of methods:

- comparative analysis used in the comparison of natural resources in rural areas of the Rostov region;
- descriptive, implemented when characterizing the conditions for the formation of an ecological and recreational cluster;
- zoning of the territory used in identifying the main types of ecological and recreational clusters in rural areas;
- promising, applied in the selection of promising types of tourist ecological and recreational clusters in rural areas of the Rostov region.

3 Results

The concept of "ecological and recreational cluster" comes in its essence from the cluster approach to the development of territories. A similar approach is applicable in the tourism sector.

The starting point for using the cluster approach to the tourism sector was the study by A.Yu. Alexandrova, who outlined the main conceptual apparatus of this approach, the structure of the tourist cluster, its system elements, etc. In the mentioned article, the cluster was understood as "a special form of territorial organization (self-organization) of production in a market economy" [26].

The tourist cluster combines in one territory such interconnected components as tourist resources (natural, cultural, historical, socio-economic), tourist information centers, accommodation facilities, catering establishments, objects of cultural events, souvenir shops and others. At the same time, natural components are most fully represented in such a cluster form as ecological and recreational.

The ecological and recreational cluster will be a combination of interconnected objects of ecological tourism in a certain area - tourist resources of a natural nature, ecological trails, transport routes, accommodation facilities, environmental education centers, museums, venues for ecological festivals, etc.

In the work of Afanasiev O.E. and Afanasyeva A.V. There are three forms-clusters of ecotourism, depending on its priority types in a particular territory. These are cognitive-educational types, recreational-cognitive and scientific [27]. From the above classification it can be seen that with a basic nature-oriented orientation, ecological tourism can also perform related functions - cognitive, educational, scientific, etc. natural resources, limited recreational anthropogenic load.

The development of a tourist eco-recreational cluster can also be one of the factors in the development of rural areas, since eco-tourism contributes to the construction of tourist infrastructure, roads, accommodation facilities and other material objects. In turn, agriculture in areas located near such clusters must comply with certain environmental parameters and, thus, follow the principles of a "green" economy.

The strategy for the functioning of the tourist eco-recreational cluster in rural areas should be to harmoniously involve them in environmental protection activities and eco-tourism while greening agriculture.

The existing ecological and recreational cluster must be constantly developed, new ecological paths laid, landscape design carried out to give an aesthetic appearance and perform a contemplative and creative function (this is important in such forms of ecological

tourism as byrdwatching). Thus, the activity of the cluster will be continuously optimized and enter the vector of sustainable development of tourism, the economy and the social sphere of the region.

In the Rostov region, certain socio-economic conditions have developed for the formation of an ecological and recreational cluster. In particular, the factors contributing to the creation of a cluster and its effective functioning include:

- availability of a unique natural and recreational resource base;
- favorable economic and geographical position (connection of the region with the center of Russia, the Urals, the North Caucasus and Transcaucasia);
- a developed transport network that allows for the organization of inbound (including tourists from abroad) and domestic tourism, using modern infrastructure;
- a full range of offered tourist services that can be sold on the territory of the region;
- the presence in the Rostov region of zones favorable for the development of ecological tourism in specially protected natural areas (SPNA);
 - experience in organizing and holding nature-oriented events in the region, such as the ecological tourism festival “Glorified Steppe”, “Don River Festival”, etc.;
 - high scientific and educational potential for training personnel in the field of ecological tourism.

At the same time, a number of factors limiting the formation of an ecological and recreational cluster of factors should be noted:

- low level of development of tourist infrastructure in the rural administrative districts of the region, in particular, accommodation facilities, catering and entertainment facilities;
- absence of a regional tour operator in the field of ecological tourism;
- poorly represented assortment of multi-day ecological tourism product;
- unformed image of the Rostov region as a center of ecological tourism both in the Russian and international markets;
- the absence of a unified cadastre of natural and cultural-historical recreational tourist resources of the region.

The constituent elements of the cluster relate to the sphere of management, infrastructure, tourist facilities, transport, hospitality industry, food, information (Fig. 1). Each element must also be improved depending on changes in the internal and external environment, existing innovative technologies, demand dynamics and environmental conditions.

The structure of the eco-recreational cluster can become a reference model for other types of tourist clusters. This conclusion comes from the fact that for the functioning of various types of tourism - educational, rural, gastronomic, ethnic, it is necessary to have the same elements of management, formation and organization of the tourist product. Therefore, in the future, based on the proposed scheme, it is possible to design similar clusters and the mechanism of their interaction in the Rostov region.

For a full-fledged tourist activity in rural areas, it is necessary to build accommodation facilities, catering establishments, tourist information centers, points of sale of souvenirs located in the park area (but not on the territory of the parks themselves). It is also possible to hold events and festivals that reflect local specifics and offer guests an extensive entertainment program.

The development of tourism in such areas will require the creation of specialized ecological trails that allow tourism activities to be carried out without harming the environment. At the same time, ecological trails should pass in places of interest to tourists and present the uniqueness of natural resources.

At the same time, in accordance with the current legislation, the territory of the planned park will have all the required functional zones: a protected area in which economic and recreational impact is completely prohibited, a specially protected zone that serves as a buffer for sections of the protected area, where economic and recreational use is strictly regulated,

educational tourism zone, where it is possible to create various museums, tourist information centers.

4 Discussion

Despite the general structure, ecological and recreational clusters in rural areas are different in content, depending on the conditions of formation and functioning. Such a difference is determined by the existing ecosystems, the prevailing landscape, the implemented forms of ecological tourism, as well as the specialization of rural areas.

On the territory of the Rostov region, several zones can be distinguished with characteristic features of the formation of potential ecological and recreational clusters in rural areas. It seems appropriate to single out 4 zones: southwestern, eastern, southern and northern (Table 1).

Zoning tourist eco-recreational clusters of the Rostov region in rural areas by type will allow developing a point approach to designing their activities, on the one hand, and diversifying the forms of eco-tourism, on the other hand. The formation of each cluster should be based on the development of its main tourist resources with simultaneous environmental protection of rural areas. Therefore, for classification by types of ecological and recreational clusters, the basic forms of landscapes were chosen, on the basis of which priority areas of ecological tourism will be determined.

Table 1. Zoning of potential ecological and recreational clusters in rural areas of the Rostov region.

Zone name	Municipalities	Cluster type	Cluster name
Northern	Sholokhovsky, Bokovsky districts	Landscape (steppe)	"Don steppe"
	Kashar Soviet districts	Landscape (steppe)	"Farm wealth"
Southwestern	Azov, Aksai, Bagaevsky, Neklinovsky, Myasnikovsky, Ust-Donetsky districts	Water (river)	1. «the Don River delta» 2. «Valley of the Manych»
Eastern	Orlovsky, Remontnensky, Tsimlyansky, Volgodosky districts	Ornithological (birdwatching), Plants, Water	1. "Reserve" Rostovsky " 2. "Tsimlyansk nature"
Western	Belokalitvinsky district	Forrest (floodplain forests)	«Black gully»
	Krasnosulinsky	Water Biological	1. "Eldorado" 2. "Gornensky"

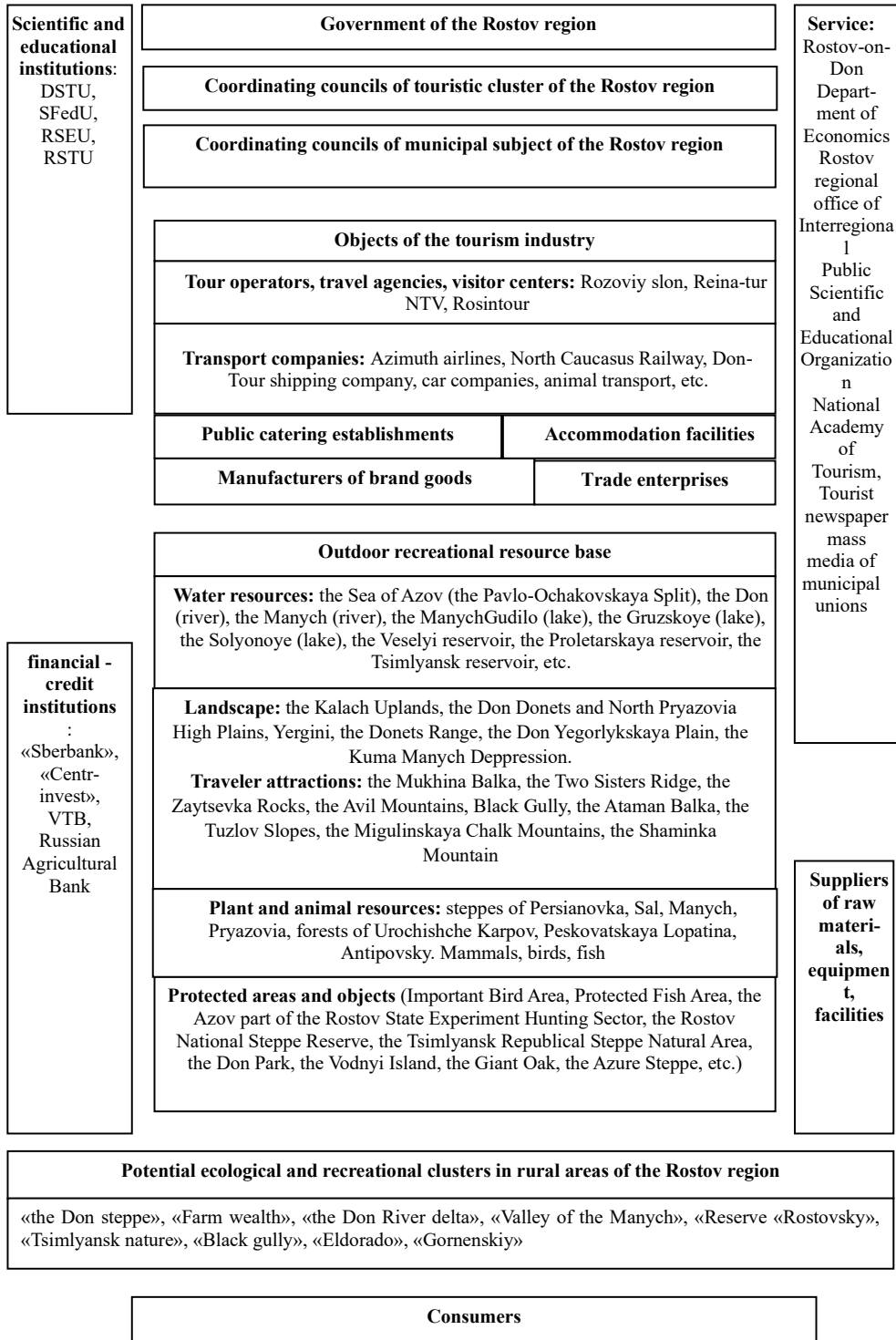


Fig. 1. Typical structure of the ecological and recreational cluster of the Rostov region.

The location of ecological clusters in rural areas will provide an opportunity for recreation and outdoor recreation for residents of the Rostov region. In addition, the priority will be the formation of ecological thinking, love for nature, awareness of the consequences of anthropogenic pressure on the environment.

It should be noted that the formation and development of an ecological and recreational cluster in rural areas will provide:

- creating an image of the districts as centers of ecological tourism, contributing to the growth of their economy;
- a significant contribution of tourism to solving the problems of employment in rural areas, not only in quantitative terms, due to the creation of new jobs, as a result of the growth in the number of small and medium-sized enterprises, but also structurally;
- modernization and expansion of the tourism infrastructure, by attracting extra-budgetary sources of financing in the distribution of investments;
- increase in demand for the formation of tourist personnel of international level, through retraining and advanced training in the field of ecological tourism, a system of continuous professional tourism education;
- increasing the innovativeness of the sphere of ecological tourism and rural areas;
- implementation of environmental protection activities, including at the expense of funds received from the sale of tourist and excursion services;
- increase in the amount of tax revenues from organizations in the field of ecological tourism and related industries;
- the growth of the welfare of the rural population of the Rostov region.

With optimal development, the eco-recreational cluster can become the basis for the sustainable development of tourism in rural areas, as well as contribute to an additional flow of inbound tourism to the regions of the Rostov region and support the development of domestic tourism.

5 Conclusions

As a result of the study on the analysis of the strategy of functioning of the tourist ecological and recreational cluster in the rural areas of the Rostov region, a number of conclusions can be drawn.

1. The Rostov region has the necessary conditions for the formation and further development of an ecological and recreational cluster, such as: a combination of natural recreational resources, a favorable economic and geographical position, a developed transport network, a large number of potential consumers of ecological tourism products, etc.

2. The selected structure of the ecological and recreational cluster, presented in the form of a diagram, can become a model for the formation and development of clusters in rural areas associated with other types of tourism, such as agrotourism, gastronomic, ethnic.

3. The conducted zoning of the territories of the Rostov region by types of ecological and recreational clusters made it possible to identify four main zones and several types of clusters in rural areas. The most representative of them are landscape, biological, water, ornithological, plant, forest. Designated areas are characterized by a combination of natural resources and tourist sites.

4. Cluster policy, including the implementation of a set of measures of state support for the formation and development of rural areas, is a promising direction for increasing the competitiveness of the region. The formation of a tourism eco-recreational cluster will entail the creation of a modern competitive tourism market in rural areas of the Rostov region.

References

1. A. Tisca, N. Istrat, C. Dan Dumitrescu, G. Cornu, *Procedia Economics and Finance* **39**, 427-432 (2016) [https://doi.org/10.1016/S2212-5671\(16\)30344-6](https://doi.org/10.1016/S2212-5671(16)30344-6)
2. G. Ioppolo, G. Saija, R. Salomone, *Land Use Policy* **31**, 460-471 (2013) <https://doi.org/10.1016/j.landusepol.2012.08.010>
3. F. Sørensen, T. Skou Grindsted, *Annals of Tourism Research* **7(91)**, 103307 (2021) <https://doi.org/10.1016/j.annals.2021.103307>
4. N. Shafieisabet, S. Haratifard, *Journal of Hospitality and Tourism Management* **45**, 486-498 (2020) <https://doi.org/10.1016/j.jhtm.2020.10.007>
5. K. Kronenberg, M. Fuchs, *Tourism Management Perspectives* **39**, 100831 (2021) <https://doi.org/10.1016/j.tmp.2021.100831>
6. K.C. Birendra, A. Dhungana, T.B. Dangi, *Tourism Management Perspectives* **38**, 100822 (2021) <https://doi.org/10.1016/j.tmp.2021.100822>
7. M. Canteiro, F. Córdova-Tapia, A. Brazeiro, *Tourism Management Perspectives* **28**, 220-227 (2018) <https://doi.org/10.1016/j.tmp.2018.09.007>
8. M. Xiaobin, S. Biao, L. Li, *Ecological Indicators* **131**, 108190 (2021) <https://doi.org/10.1016/j.ecolind.2021.108190>
9. Y. Zeng, V. Filimonau, L. Zhong, *Journal of Environmental Management* **304**, 114275 (2021) <https://doi.org/10.1016/j.jenvman.2021.114275>
10. Z. Yuxi, Zh. Linsheng, *Ecological Indicators* **109**, 105791 (2020) <https://doi.org/10.1016/j.ecolind.2019.105791>
11. Sh. Liu, J. Zhang, J. Zhang, *Ecological Indicators* **132**, 108253 (2020) <https://doi.org/10.1016/j.ecolecon.2021.107054>
12. Sh. Liu, Y. Geng, J. Zhang, *Ecological Economics* **185**, 107054 (2021) <https://doi.org/10.1016/j.ecolecon.2021.107054>
13. Q. Ali, M. Rizwan Yaseen, M. Tariq Iqbal Khan, *Resources Policy* **74**, 102365 (2021) <https://doi.org/10.1016/j.resourpol.2021.102365>
14. Y. Zhang, H. Yang, G. Wang, *Displays* **70**, 102089 (2021) <https://doi.org/10.1016/j.displa.2021.102089>
15. L. Adrianto, F. Kurniawan, S. Kleinertz, *Ocean & Coastal Management* **212**, 105844 (2021) <https://doi.org/10.1016/j.ocecoaman.2021.105844>
16. T.H. Lee, F.-H. Jan, J.-T. Liu, *Ecological Indicators* **125**, 107596 (2021) <https://doi.org/10.1016/j.ecolind.2021.107596>
17. N. Lazzari, M.A. Becerro, B. Martín-López, *Science of The Total Environment* **784**, 147078 (2021) <https://doi.org/10.1016/j.scitotenv.2021.147078>
18. W. Ruan, Y. Li, Ch.-H. Liu, *Tourism Management* **75**, 609-625 (2019) <https://doi.org/10.1016/j.tourman.2019.06.021>
19. V. Caponi, *Ecological Economics* **192**, 107262 (2022) <https://doi.org/10.1016/j.ecolecon.2021.107262>
20. D. Mwesiumo, J. Halfdanarson, M. Shlopak, *Tourism Management* **89**, 104456 (2022) <https://doi.org/10.1016/j.tourman.2021.104456>
21. R. Scheyvens, A. Carr, J. Paul Mik, *Annals of Tourism Research* **90**, 103260 (2021) <https://doi.org/10.1016/j.annals.2021.103260>
22. O. Khairabadi, H. Sajadzadeh, S. Mohamadianmansoor, *Land Use Policy* **99**, 105045 (2020) <https://doi.org/10.1016/j.landusepol.2020.105045>

23. P. Paul, T.K. Kar, K. Pujaru, *Ecological Informatics* **60**, 101171 (2020)
<https://doi.org/10.1016/j.ecoinf.2020.101171>
24. N. Paresashvili, *Procedia - Social and Behavioral Sciences* **156**, 170-173 (2014)
<https://doi.org/10.1016/j.sbspro.2014.11.164>
25. L.N. Kazmina, V.S. Makarenko, V.V. Provotorina, T.N. Grigorenko, *International Journal of Economics and Business Administration* **7**, 510-520 (2019) doi:
10.35808/ijeba/297
26. V. Provotorina, L. Kazmina, A. Petrenko, V. Makarenko, *Lecture Notes in Civil Engineering* **130**, 20–32 (2021)
27. L. Kazmina, V. Makarenko, V. Provotorina, E. Shevchenko, *E3S Web of Conferences* **175**, 10001 (2020)
28. V. Provotorina, L. Kazmina, A. Petrenko, G. Ekinil, *E3S Web of Conferences* **175**, 10002 (2020)
29. L. Kazmina, V. Makarenko, V. Provotorina, E. Shevchenko, *E3S Web of Conferences* **210**, 12002 (2020) doi: <https://doi.org/10.1051/e3sconf/202021012002>