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Authors are encouraged to submit high quality, original works that discuss the latest developments in environmental management research and application with the certain scope to share experiences and research findings and to stimulate more ideas and useful insights regarding current best-practices and future directions in Environmental Management.

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The journal takes an interdisciplinary approach and includes planning and policy aspects of international, national and regional tourism as well as specific management studies. Case studies are welcomed when the authors indicate the wider applications of their insights or techniques, emphasizing the global perspective of the problem they address.

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Formation of Tourist Clusters in Ecotourism Centers: Case of Zerenda Resort Center in Kazakhstan

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Abstract: In modern conditions, the development of tourism is undergoing dramatic changes under the influence of a number of exogenous and endogenous factors. For tourists, those tourist areas are becoming more and more attractive, where full-fledged conditions for recreation in a unique natural environment have been created, considering the provision of comfortable stay. Thus, one of the directions of spatial organization of tourism is formation of tourist clusters. In this scientific work, the authors consider the issues of creating tourist clusters in ecotourism centers of Kazakhstan on the example of the Zerenda resort center.
The method of cartographic taxonomy was used as the main research tool, within which taxa were identified that could form the basis of a tourist cluster in a certain geographical environment. Territorial units were included in each taxon, covering territories of the area where tourist resources are located.

As a result of the study, sections of the resort area were identified, which can be covered by a tourist cluster. It is assumed that each section of the cluster has its own specific characteristics and can act as a dominant and serve as a point of attraction for tourists.

In general, given that the clustering process is a rather lengthy and complex process, the authors assume that the creation of tourist ecotourism clusters can not only increase the attractiveness of ecocenters, but also lead to the emergence of new types of recreation, including in the field of green tourism.

**Keywords:** ecotourism; tourist cluster; tourist territory; taxon; ecocenter; tourist product; destination; tourist market.

**JEL Classification:** Z32; Q57; P49; R11.

**Introduction**

Today, the conditions for the development of tourism, as well as economic relations between the subjects of the tourism market, formed as part of serving tourists, are undergoing dramatic changes. The change in the consumer environment of tourists is forcing tourism enterprises to develop tourism products aimed at yet unknown tourist areas, look for new ways to promote products, develop strategies for transforming the territory into an attractive tourist space, etc. Today, tourism enterprises are not able to solve these problems on their own, as a result of which they are forced to integrate with other subjects of the tourism market and form their competitive advantages in interaction with each other.

One of the ways to increase the efficiency of interaction between market entities is the creation of clusters within the tourist area. A cluster today can be considered as a tool for increasing the efficiency of interaction between enterprises operating in a common cultural and social environment within a certain geographical space. The specifics of the geographical space within which a cluster is created often determines the features of building economic relations between subjects and becomes the basis for the formation of a unique area of tourist relations within a certain area. However, despite the fact that the cluster is considered one of the effective ways to increase the competitiveness of not only a separate group of enterprises, but also the tourist territory as a whole, today in foreign and domestic practice there are a number of contradictions regarding the description of approaches to the formation and development of clusters not only in tourism, but also in other sectors of the economy.

Distinctive features of tourist areas, the specifics of economic activity by the subjects of the tourist market, the socio-cultural environment of the area, the role of local government bodies, public associations, movements, and other factors affect the mechanisms and structure of a tourist cluster. In addition, each cluster created within any tourist space has its own unique characteristics and, quite often, is focused on making competitive advantages by creating special recreational conditions that are not available in other territories. The prerequisite to create clusters is determined the need to form a joint winning position in the market of tourist services, the inability of a tourist enterprise to independently influence the change in the trajectory of the tourist flow in its direction, the need to jointly address the problems due to the negative impact of tourism on the environment and the life of the local population with authorities and other institutions.

One of the characteristics of modern tourism clusters is a close integration of tourism business entities among themselves (Bouchra N.H. and Hassan R.S., 2023), as well as cooperation in promoting tourism services. The degree of integration and cooperation of activities of economic entities in the field of tourism is becoming one of the criteria for the effective development of the tourist area. It should be noted that until recently, the subjects of the tourism business were not interested in forming close integration ties with other tourism enterprises. The sustainable nature of the formed tourist flows, the popularity among tourists of destinations that already had a certain reputation and had the necessary infrastructure for serving tourists provided tourism enterprises with a stable income. However, the recent increase in the degree of unpredictability in the development of external environment, the complication of geopolitical situation in a number of states, the introduction of new rules for servicing tourists developed during the COVID-19 pandemic, the manifestation of natural disasters in countries specializing in tourism has led to a sharp increase in demand for domestic tourism products, and at the same time, tourists began to pay great attention not only to the comfort of services provided, but also to the availability of safe sanitary and epidemiological conditions. In addition, there is a formation of new trends related to the fact that more and more tourists today are showing interest in tourism products, providing both recreation in a unique ecological environment and the possibility of implementing cognitive activities. In this regard, travel companies, especially those operating in the countries of the post-Soviet space and specializing in the sale of foreign tours, began to pay attention to the development of territories located within the country.
The development of the territory for tourism purposes, the creation of unique recreational conditions for tourists on the basis of local resources requires the travel company to establish close cooperation with all stakeholders who are interested in developing tourism within a given geographical space. As a result, in a number of states, the issues of clustering tourist territories have become relevant again, especially in those geographic areas where there are unique natural objects that can act as the dominants of the cluster.

1. Literature Review

The concept of a cluster has been discussed in the scientific literature since the end of the 20th century, but to this day there is no generally accepted definition of a cluster, including those formed in the field of tourism. Before revealing the concept of ‘tourist cluster’, it is worth paying attention to the term ‘cluster’ itself and its modern characteristics.

The first prerequisites for studying cluster systems were made in the works of A. Marshall, who drew attention to the fact that the concentration of firms within the boundaries of an industrial region has a positive effect on their economic efficiency (Marshall A., 1920). In other words, firms concentrated in one geographical area, in order to increase their market opportunities, actively enter into integration and cooperation ties with each other, forming certain clusters of intersectoral ties. This, in turn, gives them the opportunity to ensure the stability of their activities.

Developing the theory of industrialization and studying the specifics of the interaction between economic entities within the industrial region, S. Czamanski and L. De Ablas noted that a cluster is a set of industries that are economically connected by flows of goods and services more strongly with each other than with other sectors of the national economy (Czamanski S., De Ablas L.A., 1973).

The term ‘cluster’ in the economic literature began to appear actively due to the fundamental works of M. Porter, who characterized them as a group of geographically adjacent interconnected companies (suppliers, manufacturers) and related organizations (educational institutions, government bodies, infrastructure companies) operating in a certain area and complementing each other (Porter M., 1990, 1998). According to this definition, clusters, regardless of which sector of the economy they operate in, have the following common characteristics: cluster members are localized within the boundaries of a certain geographical space, there are fairly close ties between cluster entities, enterprises operating as part of the cluster are of various types (Mukanov et al., 2022).

Other Western experts point out that clusters should be considered not as systems that provide a fixed flow of goods and services, but as a dynamic mechanism for close partnerships between enterprises based on knowledge creation and aimed at increasing returns through the widespread use of innovation (Krugman P., 1991, Morozini P., 2004). In this case, they pay attention to the fact that a cluster is able to change under the influence of competition and acquire more and more new characteristics that allow it to adapt to a changing external environment, and at the same time, the development of a cluster depends on the degree of involvement of enterprises integrated with each other and operating in the same geographical environment in innovative activity.

Rosenfeld S. under the ‘cluster’ category understood ‘a geographically limited concentration of similar, related or complementary enterprises with active channels of communication and business ties, operating in a common specialized infrastructure and facing common opportunities and threats’ (P. Nie, Ch. Wang, L Lin, 2020: 731-740).

More modern authors represent a cluster as a set of enterprises of various sectors of the economy operating within the same geographical area, united in a single structure, the elements of which are interconnected and interdependent within the framework of the formation of both individual and general competitive advantages (Boja C., 2011, Karpova G.A., 2011, Delgado M. et al, 2014, Beilin I.L., 2019). It should be noted that based on the presented definition, modern clusters have the following main properties: geographical proximity of the location of the entities involved in the cluster structure (Bubnov A.V., 2018); firms that are subjects of the cluster simultaneously compete and cooperate in an effort to create competitive advantages (Boja C., 2011); depending on the specialization of firms, integration links between cluster members are formed both vertically and horizontally; integration processes between enterprises belonging to the same cluster activate the exchange of information; the concentration of cluster entities in one geographic space is one of the reasons why firms can involuntarily involve each other in innovation processes; cooperation and integration of economic relations of subjects within the framework of tourist services creates the preconditions for the transformation of a tourist area into an attractive tourist destination (Hartman S., 2023); joint efforts of cluster members in building up common competitive advantages make them more resilient to rapidly changing environmental conditions (Karanovich M.K., 2019, Kazmina L. et al, 2023); each cluster, based on the unique
The main distinguishing feature of the tourist cluster from other clusters (agro-industrial, manufacturing, etc.) is its route based territorial organization. The tourist route and the corresponding tourist flow connect characteristics of the area, has a special socio-cultural environment, which can increase the attractiveness of the area for tourists, etc.

It should be noted that clusters operating in a particular industry or region have their own specific features, and quite often, these features determine the order of interaction of subjects within the cluster, the formation of competitive advantages, the definition of cluster dominants, etc. If we consider the specifics of clusters operating in the field of tourism, it can be noted that these systems are quite dependent on the geographical characteristics of the area. Traditional package tours classified as the sun, sand, and beach are quite often concentrated in well-defined local areas (Benner M., 2017), which encourages travel companies to concentrate in close proximity to these natural resources. In addition, the tourism product is complex and includes a number of services, the provision of which involves heterogeneous enterprises. On this occasion, F. Capone characterized clusters operating in the field of tourism as a localized group of tourism market entities united by a value chain, the interaction between which includes both competition and cooperation (Capone F., 2016). In this case, it is worth noting that it is the need for the participation of diverse enterprises in the formation and promotion of a tourist product, as well as the desire of subjects to be located close to resources that attract tourists, is one of the reasons for the formation of tourist agglomerations.

Recently, a lot of works have appeared devoted to the study of the specifics in the formation and development of clusters. Some researchers consider the tourist cluster as an economic category, others describe it in terms of geography. From the economic point of view, a cluster is considered as a form of increasing the joint competitive advantages of economic entities operating in interconnection with each other within any tourist area. For example, Beni M.S., considering the problems of globalization of tourism, notes that modern clusters act as an effective territorial form of increasing the competitiveness of tourism enterprises (Beni M.S., 2003). In the geographical sciences, a cluster is used as the creation of a certain area for the functioning of tourism enterprises involved in the process of serving tourists within a geographical area (Kropina Y.G. et al 2009, Konysh E.V., 2020). It should be noted that it is the need for the participation of authors study clusters from the point of view of agglomeration theory (Delgado M. et al, 2014, Gómez-Vega M. et al, 2022, Lomsadze T., 2023) and network theory (García-Villaverde P.M. et al, 2020, Dukhovnaya, L et al, 2023). It is known that the tourism industry is a highly agglomerated industry and entities interested in serving tourists are concentrated where tourism resources are located or there is a greater influx of tourists. Tourist enterprises within the framework of serving tourists begin to cooperate with each other, and the duration of this cooperation leads to the formation of stable network relationships between subjects.

Tourist clusters, as complex organizational structures, where each participant, while maintaining their independence, is involved in a flexible integration process (Kachniewska M., 2013) have a fairly strong impact on the sustainable development of the regional economy. In addition, the attachment of tourism enterprises to the use of resources of a certain geographical area leads to the development of specialization. In this regard, recently, researchers have begun to study tourism clusters through the prism of regional management. Thus, Petrov O.V. indicates that each cluster, including the tourist one, is a growth point for the development of the region's economy, involving other activities into the orbit of its activity and turning a depressed area into a developing and attractive center for investors (Zherukova A.B. et al., 2020). The composition of the cluster may include not only the subjects of the business environment, but also government agencies, public organizations and research centers, whose activities in relation to each other are complementary (Yalçinkaya T. et al, 2019). In some countries (Georgia, Brazil, Portugal), recently representatives of the local community have been actively involved in the formation of clusters (De Santana Ribeiro L.C. et al., 2015, Perkins R. et al., 2022, Lomsadze T., 2023), united in unions or associations whose activities are aimed at promoting certain public initiatives (environmental, social, and other interests) or protecting the values of the population. This gives grounds to judge that the cluster can act as a separate institution with its own characteristics.

The process of managing tourist clusters is rather complicated, since each cluster combines a system of formalized and non-formalized relations of its participants between themselves and the external environment. The tourist cluster is influenced not only by global and regional processes caused by changes in the preferences and opportunities of tourists due to the prevailing economic, political, and environmental circumstances, but also actively adopts the results of the activities of enterprises in other sectors of the economy. Thus, innovative technologies developed by IT enterprises are actively used in the framework of tourist services. In other words, the tourism cluster is an open system, the development trends of which can be determined not only by internal processes, but also by its relationship with the external environment.

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objects, turning them from competing into interacting elements of the system. The dominant of a tourist cluster can be both an infrastructure object (accommodation facility) and an object of tourist interest (ski resort), but in any case, the main condition for the development of a tourist cluster is the presence or appearance of routes and tourist flows (Karanovich M.K., 2019). Enterprises strive to maintain interaction with each other, turning it into sustainable integration ties, which creates the basis for the clustering of the tourist area. Thus, it becomes clear that the tourist cluster and the conditions for its development depend quite strongly on the properties and structure of the tourist product sold within the tourist area. In addition, the closeness of vertical and horizontal ties between enterprises, as well as the degree of their coverage of various processes (from the development of a tourism product to the implementation and service of the end consumer) determine the depth and breadth of the tourism cluster.

In general, in modern conditions, the main features of tourist systems that function as tourist clusters include:

- localization of enterprises and other entities involved in the process of serving tourists in a geographically limited space;
- the presence of an enterprise with sufficient material, information and technological resources that can become the core of the cluster and determine the main development priorities;
- involvement in the process of creating the value of a tourist product of enterprises in related sectors of the economy and the formation of direct and feedback links between cluster members;
- use of unique natural within the framework of economic activity, historical and cultural resources inherent in the territory within the framework of tourist services, and through them the formation of competitive advantages not only of the cluster members, but also of the region as a whole;
- the general socio-cultural environment for the functioning of tourism enterprises, which gives them the opportunity to effectively interact with each other, etc.

These features make it possible to consider the tourist cluster from various angles as: an open system that influences the development of the region's economy and increases its competitiveness; a tool for the formation of an attractive tourist destination, within which the cluster acts as a center of attraction; a mechanism for the formation of competitive advantages for a group of economic entities involved in the process of creating and promoting tourism products; the area of activity of heterogeneous interacting enterprises, whose activities are aimed at ensuring the efficiency of each enterprise through active cooperation and integration.

Within the framework of this work, the tourist cluster is understood by the authors as a group of elements of the tourist infrastructure, localized in a certain geographical space, and which are interconnected with each other through the creation of tourist values based on the specifics of the area.

2. Materials and Methods

It is known that the formation and development of tourist clusters today depends on a number of factors that quite often affect not only the integration links between participants within the cluster, but also determine the general characteristics of development. One of the factors of tourist territory clustering is the characteristics of the geographical environment where tourist services are provided. Within the framework of this study, the authors put forward the following hypotheses using the example of the Shchuchinskso-Borovoye recreation area:

- tightness of placement within the boundaries of a certain geographical environment of natural objects, elements of the infrastructure of tourist services form the basis of clustering. The degree of concentration of natural objects and other cultural and historical monuments can be one of the main reasons for the active interaction of tourism market entities with each other. In addition, the peculiarity of interaction between enterprises depends on the uniqueness of the tourist resources of the territory, because of which specialization is formed;
- in modern conditions, clustering processes can occur in any tourist areas, including ecotourism centers.

Today, ecotourism centers are not only a place where tourists stay independently and spend their holidays in an ecologically clean environment, but also a territory where there is the necessary infrastructure aimed at improving the comfort of tourists' stay. In addition, more and more new services in the field of organizing recreation in ecotourism centers have recently appeared, which forms new integration links between the entities involved in the process of organizing and implementing tourist recreation;

- the ecological environment of the geographical area, as well as the existing tourism infrastructure, make it possible to determine which territorial units can be included in the tourism cluster. In this case, territorial units should be understood as a part of the territory where individual tourist resources are located or a tourist route runs. The set of territorial units included in the cluster can be considered as a geographical field of the cluster,
which has its own boundaries within which integration processes take place between the participants actively participating in the organization of tourist services;

- the composition of the tourist cluster can be determined by the scale of the tourist services provision, i.e. a tourism product, in the implementation of which various enterprises are involved, may affect a different geographical and infrastructural environment, subsequently involving them in clustering processes.

The main research tool is represented by the method of cartographic taxonomy (Morozov M.A. et al., 2012), within which taxa were identified that could form the basis of a tourist cluster in a certain geographical environment. In this case, taxa are understood as a set of objects located in a certain geographical space, and which are characterized by common characteristics. The selection of a taxon can be based on different properties and features of objects. A taxon always characterizes a specific set of objects (Rostom G.R., 2018).

Cartographic taxonomy allows dividing the tourist space into territorial units based on the specifics of the existing infrastructure elements and the characteristics of tourist resources. Each territorial unit has its own unique characteristics and is able, to a certain extent, to form the attractiveness of a tourist territory. A selection of territorial units, the characteristics of which satisfy the conditions for organizing tourist services, makes it possible to determine the contours of the territory where it is possible to develop clustering processes. In general, the method of cartographic information makes it possible to form an array of data on the territory, with a description of the characteristics of each element of the terrain. This makes it possible to: systematize information about the territory and group it based on the characteristics of the sites available on the ground; identify taxa that can be included in the tourism cluster; identify the most attractive areas for tourists; to model the processes of development of certain tourism types within the boundaries of geographical space; manage the process of development of the tourist area and predict its future state, taking into account the rational use of natural and other objects of the natural environment and infrastructure, etc.

The studies were carried out on the territory of the Akmola region of the Republic of Kazakhstan, namely in the Shchuchinsko-Borovoye resort area. Based on the existing elements of the tourist infrastructure and attractive natural resources, the geographical space of the recreation area was divided into territorial units with an area of 1 km2. The coordinates of each territorial unit correspond to their serial number on the map (Figure 1). A set of territorial units with common characteristics was considered as a separate taxon. The combination of taxa made it possible to determine the possible boundaries of the tourist cluster and its geographical area.

Figure 1. Map of the Zerenda district with the designation of territorial units of the ecological recreation zone

Source: compiled by the authors based on the methodology of Morozov M.A. and Lvova T.V.
The research algorithm consisted of several stages, which made it possible to form a sufficient array of data on the area, the characteristics of objects that attract tourists interested in having rest in an ecologically clean environment (Figure 2).

Figure 2. Research algorithm

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<th>Stage 1. Field research.</th>
<th>Study of available resources on the terrain and their classification</th>
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<td>Stage 2. Cartographic work</td>
<td>Division of the researched area into territorial units</td>
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<tr>
<td>Stage 3. Systematization of data</td>
<td>Study of individual characteristics of each territorial unit and identification of similar features</td>
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<td>Step 4. Taxa identification</td>
<td>Grouping of territorial units based on the identified features</td>
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<td>Stage 5. Cartographic designation of the tourist cluster field</td>
<td>Consolidation of taxa into a tourism cluster</td>
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Result:
- defining the tourist cluster composition
- identification of the territorial scale of the cluster.
- cartographic determination of the cluster’s boundaries.
- determining individual features of tourist space clustering.

Source: compiled by the authors

The main materials used are represented by the works of domestic and foreign authors published in various periodicals and covering the problems of the tourist clusters formation and development in various conditions. The analysis of tourism development in the study area is based on quantitative data presented on official sources of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, the Committee of Tourism Industry of the Ministry of Culture and Sport of the Republic of Kazakhstan, the Akimat of Akmola region, etc. The determination of cartographic taxa, as well as the identification of the features of individual areas of the terrain and elements of the tourist infrastructure, was carried out by using the results of field research and exploring topographic material.

3. Research Results and Discussions

Tourism is one of the priority areas for the development of the national economy for Kazakhstan. Located between large countries like China and Russia, the country has significant potential for the development of many types of tourism. The presence of unique natural monuments on the territory of the country, the rich nomadic history of the people with its historical and cultural heritage, the variety of recreational areas that provide for holidaymaking in an ecologically clean environment create favorable conditions for increasing the level of tourist attractiveness of the country. In addition, a sufficiently large territory of Kazakhstan with its diverse landscape, flora and fauna allows tourists to organize their holidays in a different natural environment, and at the same time being on the territory of one state.

Today, the country has more than 12 national natural parks and about 10 nature reserves, the natural and recreational characteristics of which make it possible to implement both active and passive tourist recreation. A number of natural sites, due to their unique characteristics, are included in the UNESCO World Heritage List. For example, on the territory of Northern Kazakhstan, lakes and natural objects located within the boundaries of the...
Naurzum and Kurgaldzhinsky reserves since 2008, and the Turan deserts of the temperate zone in the Altyn Emel National Park), the Ustyurt plateau in the Ustyurst Reserve since 2021 are on this list.

Formation of conditions for the development of the modern tourism industry is one of the priority areas of state policy, implemented in the framework of increasing the competitiveness of the national economy. During the years of independence, a number of state programs and a concept were adopted in the country, the purpose of which was to form the necessary tourist infrastructure in the regions. Thus, the State Program for the Development of the Tourism Industry of the Republic of Kazakhstan for 2019-2025 presented the Touristification Map, where TOP-10 areas were identified, within the boundaries of which it was supposed to create the necessary conditions for the formation of a material and technical base for a comfortable stay for tourists. It should be noted that not only the subjects of the tourism business, but also government agencies, public organizations and national companies are involved in the process of developing the tourism sector in the country today. A special role is given to local authorities, which are directly interested in the formation of attractive tourist destinations based on available local tourist resources (Tleubayeva A. et al., 2023). In addition, in a number of regions, local authorities have developed and are implementing strategies to promote existing tourist centers both at the republican and international levels.

The main tourist centers of the country, which are attractive for domestic tourists and vacationers from neighboring countries, include the Almaty mountain cluster (located in the southern region of Kazakhstan), the Shchuchinsk-Borovoye, Bayanaul, Imantau-Shalkar resort areas (the northern region of the country), Lake Alakol, State national natural park Katon-Karagay (Eastern region), tourist zone of Mangistau (Western Kazakhstan), Astana and Almaty, etc.

According to the Bureau of National Statistics 7.3 million people were served with accommodation in the country in 2022, which is an increase of 25.4% compared to the previous year of 2021. As can be seen in Figure 3, in general, from 2016 to 2022, there is a positive tendency in the number of visitors served by various accommodation facilities. Only in 2020 there was a sharp decline in this indicator, which is associated with the COVID-19 pandemic. During this period, according to various expert data, the profitability of domestic tour operators and travel agents decreased by 50-60%. In different regions, the picture differed for better or worse due to the influence of regional factors, the presence or absence of strict quarantine measures. It should be noted that the COVID-19 pandemic had a rather strong impact on the behavior of domestic tourists. The closure of state borders, the introduction of lockdowns and the restriction of movement in countries that are in demand among Kazakhstani tourists have led to a sharp increase in demand for domestic tourism products. In this regard, quite new trends in the field of organization of tourist services have been formed in the country. For example, in a number of tourist centers based on glampings were formed, allowing tourists to spend their holidays in an ecologically clean environment, taking into account the provision of sanitary and epidemiological safety. In addition, the introduction of the sanctions policy of European countries in relation to Russia became the reason that in 2022 Russian tourists began to consider the countries of Central Asia as a priority destination for tourism purposes.

![Figure 3. Number of visitors served by accommodation facilities in 2016-2022 (million people)](image)

*Source: based on data of the Bureau of National Statistics of the Republic of Kazakhstan*
Unlike other countries of the world, which, due to limited opportunities, specialize only in certain tourist services, Kazakhstan has great opportunities to develop tourism in various directions. Today, based on the characteristics of tourist resources available in the regions, it is possible to create at least two dozen tourist facilities for 10-15 thousand places that meet international standards (Dmitriyev P.S. et al., 2022). In an environment where routes that make it easy to maintain social distancing practices, without public modes of transport and crowded tourist areas oriented to more remote places where tourists are less likely to come into contact with other people are increasingly in demand, issues of developing eco-tourism are becoming more relevant. In the country, today there are several resort areas that can fully meet the needs of tourists in recreation in an ecologically clean environment with the provision of sanitary and epidemiological safety standards. One of these tourist areas is the territory of the Zerenda resort area, located in the Akmola region.

According to its characteristics, the Zerenda resort area has unique natural resources, allowing tourists to combine their holidays both in the forest and in the mountains. Today, more than 200 ecotourist routes are being implemented on the territory of the resort area. This area is located 60 km from the Shchuchinsko-Borovskaya resort area, popular among the inhabitants of the northern region of the country and is of interest not only for domestic tourists interested in relaxing in an ecologically clean environment, but also for guests arriving from neighboring countries (mainly Russia). In addition, it is worth noting that the natural objects available on the ground are being developed by tourists not so long ago. One of the reasons for this is that the Shchuchinsko-Borovskaya resort area cannot cope with the flow of tourists, especially in summer, as a result of which vacationers are forced to look for and explore new territories where it is possible to fully satisfy their tourist needs.

Today, on the territory of the Zerenda resort center there are more than 50 hotels with rooms of various levels of comfort, lodging establishments that can accommodate tourists both in the summer and winter seasons, the roadside service points are organized, the entities that provide services for organizing equestrian, walking and other active tours, as well as sanatoriums that work closely enough with educational institutions that train personnel in the field of tourism operate.

In general, in 2022, in the Zerenda resort area, the volume of services provided by accommodation facilities amounted to 208.7 million tenge, which is 15.9% higher than in the previous period. However, compared to 2016, there is a significant decrease in this indicator. This is primarily due to the fact that the majority of visitors were oriented to rest in the Shchuchinsko-Borovskaya resort area, which is located 85 km from this area. COVID-19 has had a significant impact on the change in consumer preferences of tourists, the demand for visiting areas that allow for recreation in a unique natural environment, taking into account compliance with sanitary and epidemiological safety standards, has increased. This has led to an increase in the number of tourist trips to the considered resort area.

Figure 4. Volume of services rendered by accommodation places in 2016-2022 (million tenge)

Source: based on data of the Bureau of National Statistics of the Republic of Kazakhstan
One of the advantages of the Zerenda resort area is its geographical location. The recreation area is located 60 km from the regional center of Kokshetau, 310 km from the capital city of Astana and 250 km from the state border of the Republic of Kazakhstan with the Russian Federation. This makes the resort area accessible to tourists not only from the cities of Kazakhstan, but also from large agglomerations of the Russian Federation, where the population exceeds 500 thousand people. So, within a 10-hours drive to the Zerenda resort area there are such Kazakhstani cities as Astana, Petropavlovsk, Pavlodar, Kostanay, Karaganda, the Russian cities of Omsk, Chelyabinsk, Kurgan, Tyumen (Figure 2). Statistical studies show that today the main visitors to the resort area are residents of the northern regions of Kazakhstan and the border cities of Russia.

Another advantage is the availability of the necessary infrastructure for the full-fledged organization of ecotourism recreation. On the territory of the resort area today there are both hotel enterprises and sanatorium organizations, as well as centers providing services in the field of hiking, horseback riding and other types of ecotours. In addition, in recent years, local governments have significantly invested in local road infrastructure, which has increased the level of accessibility of the resort area for tourists from other regions.

Despite the fact that the Zerenda resort area has recently significantly increased its level of attractiveness among domestic tourists and visitors from neighboring countries, there are a number of problems that do not allow it to fully develop as a tourist destination. These problems include:

- fragmentation of entities that are involved in the process of serving tourists on the ground. Most subjects are not interconnected and search for their target consumers on their own (Mukanov A. et al, 2022). Most of the tourists staying in medium and small accommodation facilities, due to the lack of proper economic relations of the hotel enterprise with other tourism business entities, cannot receive complete information about local tourism products. As the study shows, each entity provides services only within the framework of its specific activity. In addition, the lack of development, and sometimes the lack of integration links between travel companies and hotel companies, leisure organizations, etc. does not allow comprehensive promotion of the resort area as a full-fledged destination.

- a small number of tourism products that would be promoted jointly by local representatives of the tourism business. Unfortunately, visiting tourists are often left on their own, they look for accommodation, pick up food points, independently determine excursion routes around the area. The development of integrated tourism programs, including accommodation services and other types of tourism activities, would contribute to the full-

Figure 5. Cities located within a ten-hours drive to the Zerenda resort area

Source: compiled by the authors using Google Earth

Despite the fact that the Zerenda resort area has recently significantly increased its level of attractiveness among domestic tourists and visitors from neighboring countries, there are a number of problems that do not allow it to fully develop as a tourist destination. These problems include:

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- a small number of tourism products that would be promoted jointly by local representatives of the tourism business. Unfortunately, visiting tourists are often left on their own, they look for accommodation, pick up food points, independently determine excursion routes around the area. The development of integrated tourism programs, including accommodation services and other types of tourism activities, would contribute to the full-
fledged organization of tourism in the area, and competition would motivate enterprises to actively establish economic ties with each other in order to form a winning position in the market;
- the lack of a clear policy of positioning the area in the market of tourist services. The territory of the resort area has unique natural resources, based on which it is possible to organize tours aimed at a specific target group of tourists who prefer active recreation. Most tourists stay for weekend tours, and quite often they are involved in passive recreation. A certain part of tourists independently turns to individuals who provide excursion services or who are able to act as guides, and thereby try to satisfy their cognitive needs;
- most of the subjects of the tourism business is focused on providing services only in the summer. Despite the existing potential in the territory of the resort area, tours focused on winter types of recreation are practically not implemented. In recent years, Kazakhstan has seen an increase in the level of demand for tours focused on winter holidays. However, residents of large agglomerations in the northern regions of the country are faced with the problem of the lack of a well-equipped center for winter recreation;
- there is no unified policy to increase the competitiveness of the resort area, which would involve representatives of the tourism business, accommodation facilities, active leisure organizations, local authorities, etc. As already noted, not far from the resort area, there is the Shchuchinsko-Borovskaya resort area, in comparison with which the Zerenda resort area is significantly inferior in terms of attendance and volume of tourist services. The definition of a clear competitive policy and the involvement of all stakeholders in its implementation would increase the level of demand for the resort area among potential tourists by an order of magnitude.

One of the directions for addressing these problems can be the formation of a tourist cluster on the territory of the resort area. The clustering of the territory will increase the attractiveness of the resort area not only due to the uniqueness of the available natural and other tourist resources, but also by improving the quality of service based on the active interaction of enterprises and other entities involved in the process of providing tourist and recreational services. As F. Capone notes ‘... all the subjects involved in the tourism cluster are interconnected and interdependent. The services of some tourism organizations are complementary elements of the product of other tourism companies. In this regard, the formation of competitive advantages in one cluster entity directly affects the success of other enterprises, which are also an integral element of this system’ (Capone F., 2016). In addition, the process of clustering the tourist area will contribute to the establishment of effective channels of cooperation between business entities and government agencies, public organizations and other social institutions interested in the long-term development of tourism in the area.

One of the directions for the development of the Zerenda resort center as an attractive tourist destination is the formation of a tourist cluster on its territory, mainly focused on ecotourism. The dominants of the cluster can be unique natural objects available on the ground and around which the activities of the majority of tourism business entities are concentrated. As part of the application of the cartographic taxonomy method, we have identified the main taxa that can form the basis of the cluster and form its initial image:
- taxon 1 - ‘Infrastructure for ecological recreation in the forest zone’. The Zerenda resort area is located in a geographical area where there are unique natural objects that can act as the dominant tourist cluster. Pine forest, adjacent to the resort area, is one of the attractive tourist recreation areas, where tours of both active and passive leisure are implemented. Within the boundaries of the forest zone, the necessary infrastructure has been formed (paved tourist trails, places for short-term parking, zones for passive recreational activities, equipped sanitary and hygienic zones, fire safety facilities, etc.), which contributes to a comfortable and safe rest for tourists. Based on this, this taxon includes territorial units that cover the territory of the forest zone, as well as the locations of infrastructure elements that are designed to create the necessary conditions for tourists to rest in the forest (Figure 6);
- taxon 2 - ‘Infrastructure of active tourism based on mountain objects’. This taxon covers the mountainous areas of the resort area, and also includes territorial units where there is the necessary infrastructure for organizing outdoor activities at mountain sites. The average height of the mountain facilities available in the resort area is 550-600 meters (Zhylandy, Medvezhya hills). The paved trails allow tourists to climb as part of a group or individually and satisfy their needs for outdoor activities. In addition, there are unique sites, such as the Ulgulinsky waterfall and the Dragon Cave, which, due to their characteristics, are attractive not only for tourists, but also for other specialists engaged in research in the field of the environment and the history of the area. It should be noted that on the basis of mountain facilities, students of a number of training centers work out their skills as instructors. For example, every year students of the L.N. Gumilyov Eurasian National University majoring in ‘Tourism’ undergo educational practice in active types of tourism (Figure 6);
- taxon 3 - ‘Roadside service infrastructure’, includes territorial units, within the boundaries of which facilities are located, whose activities are aimed at serving road users and tourists in the roadside. Currently, the resort area is crossed by one main route, along which tourists arrive for recreation either in their own car or by bus. Almost all roadside service facilities (gas stations and repair stations, food points, motels, short-term parking areas, sanitary and hygienic zones, etc.) are located along the highway within the boundaries of the resort area, which has a positive effect on the comfortable travel of tourists, especially during entry into the territory of the resort and the zone and exit from it (Figure 6);

- taxon 4 - ‘Tourist service infrastructure’, including areas where tourist firms, catering establishments, organizations providing excursion services are concentrated. To date, most of the enterprises involved in the process of serving tourists are located within the boundaries of the village of Zerenda, which allows us to consider the settlement as part of the tourist infrastructure (Figure 6);

Figure 6. Projection of cartographic taxa 1 - 4

(a - taxon ‘Infrastructure for ecological recreation in the forest zone’, b - taxon ‘Active tourism infrastructure based on mountain facilities’, c - taxon ‘Roadside service infrastructure’, d - taxon ‘Tourist service infrastructure’)

Source: the figure was compiled by the authors

- taxon 5 - ‘Water tourism infrastructure’. The taxon unites territorial units covering the territory of Lake Zerenda, where tourists have the opportunity to engage in active and passive recreation (boating, fishing, relaxing on the beach, etc.) within the water area of the reservoir. This taxon includes the infrastructure of both the coastal zone and those located directly within the water area (Figure 7);

- taxon 6 - ‘Health tourism infrastructure’. This taxon consists of territorial units where objects providing health services are located. Thus, there are more than 10 health-improving facilities (Zeren-Nur, Karagaily, Sunkar, etc.) on the territory of the resort, which specialize in balneotherapy, mud treatment and other outdoor recreational activities in a pine forest (Figure 7);
- taxon 7 - ‘Infrastructure of passive recreation and general purpose’. The taxon of this category includes the territory where there is infrastructure for passive recreational activities (walks, recreation in the forest zone, etc.). In addition, those areas where general-purpose infrastructure is located (points of short-term rest, leisure, playgrounds for children, etc.) are also covered. It should be noted that, although some of the objects included in this taxon are not of a tourist nature (for example, gazebos, mushroom pickers rest areas, areas with plantations of berry trees, etc.), however, their presence significantly increases the comfort of tourists in the resort zone (Figure 7).

Figure 7. Projection of cartographic taxa 5 - 7

(a - taxon ‘Infrastructure of water tourism’, b - taxon ‘Infrastructure of health tourism’, c - taxon ‘Infrastructure of passive recreation and general purpose’)

Source: the figure was compiled by the authors

Each taxon has specific features and is quite significant in the organization of tourism in the researched area. The taxa are interconnected by processes that arise in the framework of creating conditions for a comfortable rest for tourists, and there is also a certain degree of dependence on each other. Thus, the state of one taxon can influence the demand for another taxon. The interconnection of taxa among themselves is one of the main reasons for the formation and development of integration links between economic entities involved in the process of serving tourists in a given territory. In order to increase the demand for their services, tourism enterprises, together with other tourism business entities, begin to develop and promote tours covering objects of various taxa, which leads to the natural formation of clustering processes within the boundaries of the territory under consideration. In other words, the interaction of taxa with each other leads to the formation of a space within which the processes of production and consumption of tourist services are concentrated. In this case, the tightness of interaction between economic entities and other participants in the local tourism market within the boundaries of taxa creates the basis for the formation of cluster systems, and the area of interaction determines
the geographic field of the cluster. Thus, Figure 8 shows the general cartographic projection of the proposed cluster on the territory of the Zerenda resort center obtained by combining the above taxa.

Figure 8. General view of the cluster, formed by integration of taxa

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Source: the figure was compiled by the authors

The cartographic projection allows to outline the boundaries of the geographical field of the tourist cluster in space. When integrating taxa into a cluster, it is necessary to pay attention to their characteristics. This makes it possible to select territorial units that really have unique properties and include them in the cluster. Each territorial unit has its own coordinates in the presented projection and displays certain areas that are significant for tourist recreation. It should be noted that depending on changes in the conditions for the development of the tourism market, consumer preferences of tourists, the specifics of the functioning of economic entities, certain territorial areas may be included or excluded from the taxa. In some cases, new taxa may form in nearby territories, which may be covered by the cluster in the future. In other words, the geographic field of the cluster is not constant, but may change after a certain time under the pressure of various factors. The cluster matrix is shown in Figure 9 and displays the main territorial units that can be included in the cluster on the territory of the Zerenda resort area.

Today, the Zerenda resort area has a good potential for the formation of tourist clusters. The unique natural objects of the resort area make it possible to form a tourist cluster specializing in ecotourism. The creation of tourist clusters in the territory will allow tourism enterprises to actively interact with each other, participate in the system of accumulating the value of the tourist product, and jointly increase the competitiveness of the territory. It is no secret that the Zerenda resort area is less attractive to domestic tourists compared to the Shchuchinsk-Borovskaya area due to the lack of a well-defined promotion strategy from local authorities and the business community. In this case, the creation of an ecotourism tourism cluster will just enable the participants of the local tourism market to jointly form new competitive advantages and promote the territory as an attractive destination. In addition, the clustering of the territory will allow the subjects of the tourism market to jointly develop and promote new products focused not only on ecotourism, but also on other types of green tourism. For example, in the Napa Valley (California, USA), the clustering of the wine industry led to the emergence of wine tourism (Solazzo G. et all, 2022), and the Kitakyushu cluster (Japan) became the first cluster where advanced information and robotic technologies are concentrated, involved in the process of serving tourists (Nowak J.-J., Petit S., 2021). In addition, the formation of clusters will lead to the fact that tourism enterprises, in order to increase their competitive advantages, will actively integrate with the entities involved in innovation.
Figure 9. The main territorial units that can be included in the cluster on the territory of the Zerenda resort area

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Source: the figure was compiled by the authors

Conclusions and Further Research

World practice shows that one of the effective directions of the spatial organization of tourism in a certain area is the formation and development of cluster systems. Clusters in the field of tourism allow developing and promoting a tourist area through the integration and cooperation of business entities involved in the process of rendering tourism services. In addition, not only representatives of the local business community are involved in the integration processes, but also other stakeholders interested in the development of tourism. As a result, the competitiveness of the tourist territory increases due to the joint efforts of the cluster members.
The Zerenda resort area is one of the ecotourism centers in the Republic of Kazakhstan. Within the boundaries of the resort area, unique natural objects are concentrated that are of interest to tourists. The results of the conducted research allow us to conclude that the Zerenda resort area has all the necessary characteristics for the formation and development of tourist clusters specializing in ecotourism. The creation of an ecotourism cluster will significantly increase the attractiveness of the area for tourists and reorient the flow of tourists from other regions of the country and neighboring countries in their direction. In addition, it is worth noting that the formation of ecotourism clusters will lead to a positive effect of scale, when active cooperation and integration of economic entities can lead to a decrease in the average cost of producing tourism services, which ultimately may affect the final price of the tourism product.

To date, there are a number of natural objects on the territory of the resort area with an established infrastructure for servicing tourists, as well as centers for health tourism and recreational purposes. The characteristics of each object allow them to act as the dominant tourist cluster, around which enterprises involved in the process of serving tourists can be concentrated in cooperation with each other. Natural, historical, educational and other objects used as tourist resources on the territory of the resort area make it possible to form and develop not only passive, but also active types of tourism. This will make it possible to involve enterprises and organizations of various profiles and levels in the structure of the tourist cluster, which will positively affect the demand for the area among tourists.

The results of the analysis show that the geographical field of the proposed tourist cluster can cover infrastructure elements throughout the resort area. Each element has characteristics that can give the cluster distinctive features. In addition, the methodology of cartographic taxonomy applied in the framework of the study made it possible not only to identify the components of the cluster, but to determine the approximate boundaries of the territory where the clustering processes will take place.

Thus, the formation and development of tourism clusters focused on ecotourism can be one of the ways to effectively organize tourism on the territory of the Zerenda resort area and turn it into an attractive destination. However, it must be taken into account that the clustering process is rather long and complex and requires active actions not only from individual economic entities, but also from other stakeholders engaged in the development of tourism in the territory. In addition, to ensure the sustainable development of the tourism cluster in the long term, it is necessary to conduct more detailed scientific research in the field of determining the tools to motivate economic entities to cooperate and develop integration ties between them, rational development of the territory for tourism purposes, identifying the features of the socio-cultural environment of the tourism cluster, etc.

Credit Authorship Contribution Statement

Aidar H. Mukhanov: Conceptualization, Methodology, Writing – original draft, Supervision, Data curation.
Kamshat P. Mussina: Project administration, Software, Validation, Writing – review and editing, Visualization.
Lyailya M. Mutaliyeva: Investigation, Methodology, Supervision, Funding acquisition.
Yerzhan N. Sagatbayev: Conceptualization, Formal analysis, Visualization, Funding acquisition.
Darken A. Seidulain: Data curation, Project administration, Validation, Methodology.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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