

Zh.N. Aliyeva<sup>1,\*</sup> , M.G. Adilbek<sup>2</sup> ,

I. Akbar<sup>1</sup> , Zh.B. Aliyeva<sup>3</sup> 

<sup>1</sup>Al Farabi Kazakh National University, Kazakhstan, Almaty

<sup>2</sup>Narxoz University, Kazakhstan, Almaty

<sup>3</sup>Jean-François Champollion National University Institute, France, Albi

\*e-mail: [aliyeva.zhannat@kaznu.kz](mailto:aliyeva.zhannat@kaznu.kz)

## EVALUATION OF TOURIST AND RECREATIONAL RESOURCE POTENTIAL FOR ECOTOURISM DEVELOPMENT: A CASE STUDY OF SOUTH KAZAKHSTAN

This article is devoted to the development and use of the natural environment for ecotourism purposes, which is one of the most actual problems of our time. In this context, the development of such types of nature conservation tourism, such as eco-tourism, is a particularly important task. Besides, ecotourism today represents one of the fastest growing sectors of the world industry of tourism. Kazakhstan possesses big possibilities for organization of this kind of tourism. In particular, Southern Kazakhstan is the most attractive from the ecotourist point of view. Therefore, the authors have carried out work on an assessment of the potential of tourist and recreational resources of Southern Kazakhstan for the purposes of ecotourism development. The relevance of the theme of the study increases due to the fact that South Kazakhstan, with its great potential for the development of ecotourism, is at the same time the most densely populated region of Kazakhstan. Therefore, the development of ecotourism in this region should be considered as one of the priority ways to reduce the negative impact on ecological systems as a result of tourism activities. In this article natural and socio-economic recreational resources of ecotourism are analyzed and systematized, and also zoning of considered region on a degree of saturation by objects of tourist service is conducted, the total tourist-resource potential on which basis perspective areas on development of ecotourism are defined, the attractiveness map of tourist-recreational resources of Southern Kazakhstan is made.

**Key words:** ecotourism, South Kazakhstan, natural tourist and recreational resources, socio-economic tourist and recreational resources, tourism infrastructure, zoning.

Ж.Н. Алиева<sup>1,\*</sup>, М.Г. Әділбек<sup>2</sup>, И. Акбар<sup>1</sup>, Ж.Б. Алиева<sup>3</sup>

Әл-Фараби атындағы Қазақ ұлттық университеті, Қазақстан, Алматы қ.

Нархоз университеті, Қазақстан, Алматы қ.

Жан-Франсуа Шампольон Ұлттық университетінің институты, Франция, Альби қ.

\*e-mail: [aliyeva.zhannat@kaznu.kz](mailto:aliyeva.zhannat@kaznu.kz)

### Экотуризмді дамыту үшін туристік-рекреациялық ресурстардың әлеуетін бағалау: Оңтүстік Қазақстан мысалында

Бұл мақала қазіргі заманның ең өзекті мәселелерінің бірі болып табылатын табиғи ортаны экотуристік мақсатта дамытуға және пайдалануға арналған. Бұл тұрғыда экологиялық туризм сияқты табиғатты қорғау және дамыту аса маңызды міндет болып табылады. Сонымен қатар, экотуризм бүгінгі таңда әлемдік туризм индустриясының ең жылдам дамып келе жатқан секторларының бірі. Қазақстан туризмнің осы түрін ұйымдастыру үшін үлкен мүмкіндіктерге ие. Атап айтқанда, Оңтүстік Қазақстан экотуристік тұрғыдан ең тартымды болып табылады. Сондықтан авторлар экотуризмді дамыту мақсатында Оңтүстік Қазақстанның туристік-рекреациялық ресурстарының әлеуетін бағалау бойынша жұмыс жүргізді. Зерттеу тақырыбының өзектілігі экотуризмді дамыту үшін орасан зор әлеуетке ие Оңтүстік Қазақстан сонымен қатар Қазақстанның ең тығыз қоныстанған өңірі болып табылатындығына байланысты даму деңгейі артып келеді. Сондықтан осы өңірде экотуризмді дамытуды туристік қызмет нәтижесінде экологиялық жүйелерге теріс әсерді төмендетудің басым жолдарының бірі ретінде қарастырған жөн. Бұл мақалада экотуризмнің табиғи рекреациялық және әлеуметтік-экономикалық ресурстары талданды және жүйеленді, сондай-ақ қарастырылып отырған өңірді туристік қызмет көрсету объектілерімен қанықтыру дәрежесі бойынша аудандастыру жүргізілді, жиынтық ретінде туристік-ресурстық әлеует айқындалды. Оның негізінде экотуризмді дамыту бойынша

перспективалы аудандар айқындалды және де Оңтүстік Қазақстанның туристік-рекреациялық ресурстарының тартымдылығының картограммасы жасалды.

**Түйін сөздер:** экотуризм, Оңтүстік Қазақстан, табиғи туристік-рекреациялық ресурстар, әлеуметтік-экономикалық туристік-рекреациялық ресурстар, туристік инфрақұрылым, аудандастыру.

Ж.Н. Алиева<sup>1\*</sup>, М.Ғ. Әділбек<sup>2</sup>, И. Акбар<sup>1</sup>, Ж.Б. Алиева<sup>3</sup>

<sup>1</sup>Казахский национальный университет им. аль-Фараби, Казахстан, г. Алматы

<sup>2</sup>Университет Нархоз, Казахстан, г. Алматы

<sup>3</sup>Институт Национального университета Жана-Франсуа Шампольон, Франция, г. Альби

\*e-mail: aliyeva.zhannat@kaznu.kz

### Оценка потенциала туристско-рекреационных ресурсов для развития экотуризма: на примере Южного Казахстана

Данная статья посвящена развитию и использованию природной среды в экотуристских целях, что является одной из самых актуальных проблем современности. В этом контексте развитие таких видов природоохранного туризма, как экологический туризм, является особо важной задачей. К тому же экотуризм на сегодняшний день представляет собой один из наиболее быстрорастущих секторов мировой индустрии туризма. Казахстан обладает большими возможностями для организации данного вида туризма. В частности, Южный Казахстан является наиболее привлекательным с экотуристской точки зрения. Поэтому авторами была проведена работа по оценке потенциала туристско-рекреационных ресурсов Южного Казахстана для целей развития экотуризма. Актуальность темы исследования возрастает в связи с тем, что Южный Казахстан, обладая огромным потенциалом для развития экотуризма, в то же время является наиболее плотно заселенным регионом Казахстана. Поэтому развитие экотуризма в данном регионе следует рассматривать как один из приоритетных путей снижения отрицательного воздействия на экологические системы в результате туристской деятельности. В данной статье проанализированы и систематизированы природные и социально-экономические рекреационные ресурсы экотуризма, а также проведено районирование рассматриваемого региона по степени насыщенности объектами туристского обслуживания, определен совокупный туристско-ресурсный потенциал, на основе которого определены перспективные районы по развитию экотуризма, составлена картограмма привлекательности туристско-рекреационных ресурсов Южного Казахстана.

**Ключевые слова:** экотуризм, Южный Казахстан, природные туристско-рекреационные ресурсы, социально-экономические туристско-рекреационные ресурсы, туристская инфраструктура, районирование.

## Introduction

The International Ecotourism society defines ecotourism as responsible travel to natural areas which conserve the environment, support the well-being of the local community and involve sightseeing and educational activities. Natural-geographical factors in the development of tourism are reflected in the geographical location (the banks of rivers, lakes and seas), in underground resources (mineral waters, caves, etc.), in flora and fauna and in beautiful rich nature. The natural and geographical conditions of the object play a decisive role in the choice of the tourist destination. The wealth of natural resources and the possibility of their use have a huge impact on the tourism development rate (AZBANTAYEVA, SAGYNBAYEVA, SAGATBAYEV, & PASHKOV, 2022). As one of the important components of the tourism system, the evaluation of tourist attractions is very impor-

tant for the planning and operation of the tourism sector (Nguyen, To, Nguyen, & Tran, 2023). In order to achieve a balance among the various components of tourism development, it is necessary to carefully consider and develop methodologies and integrated approaches to assess the prerequisites and prospects for utilizing tourism as a systemic factor ensuring sound economic and social development (Gamidullaeva, Vasin, Tolstykh, & Zinchenko, 2022).

Natural resources are “the mineral, plant, and animal formations of the earth’s biosphere to produce oxygen, filter water, prevent erosion, or provide other ecosystem services.” (Neverov, Masilevich, & Ravino, 2020). Ecological resources are “ecosystem resources capable of maintaining and reproducing ecological balance and associated ecological benefits.” (Neverov, Derevyago, & Neverov, 2010), these are especially relevant in the context of sustainable tourism development. Recreational re-

sources are considered a part of natural and cultural resources to provide recreation as a means of maintaining and restoring the human capacity for work and health. Recreational natural resources related to the field of tourism can be considered from the point of view of the possibility of using general natural and recreational resources in tourism activities without harming the territory itself and, accordingly, the population (Gamidullaeva et al., 2022).

Socio-economic resources are social relations between people or groups of people associated with a certain area, whose life activity is promoted along with sustainable development. An important component of social resources is related to kinship, relationships between representatives of a certain territory, networks of informal relations between contractors of business relations, common interests, needs, etc. which are all system of social relations to be described. As for the tourism industry, this potential can be demonstrated by specific national-cultural foundations and the goodwill of the local population, as well as the existence of guarantees for the safety and comfort of tourists (Gamidullaeva et al., 2022).

The infrastructural potential is a system of material objects with extensive internal (between infrastructure objects of the same or different types) and external (with other objects of the regional economic environment) connections (Malafeev & Baskakova, 2017). It is a set of requirements, norms, rules and regulations that affect business processes in the region and establish the rules of interaction between entities, as well as aspects related to transport security and logistics access. These types of tourism potential are characterized by the presence of modern tourism infrastructure; the number of tourist enterprises, including their ability to accommodate a large number of tourists and satisfy their needs; satisfactory transport infrastructure; and the availability of a sufficient number and range of tourism products, etc. (Savelyeva & Tolstoguzova, 2008).

The potential for the development of tourist and recreational activities in a certain territory is characterized by the presence of tourist resources there. Such resources include natural, historical, and socio-cultural objects, which include the basic objects necessary for tourists, as well as other objects capable of satisfying the spiritual and other needs of tourists, supporting their lives, and restoring and developing their physical activity. Their quality, location in space and degree of provision determine the natural tourist and recreational potential of the territory, and their rational implementa-

tion is a very important scientific and practical task facing the tourism business and tourism science in the current socio-economic conditions (Erdavletov S. R., Aliyeva Zh. N., & Zhumadilov A. R., 2019). Identification and assessment of regional tourist and recreational resources and their features is one of the most important issues in the development of tourism in Kazakhstan. In particular, we can mention the territory of South Kazakhstan. And it is an important part of studying the suitability of the region for the purpose of development of recreation and ecological tourism. In Western countries, ecotourism is widely spread through the concept of sustainable development. Ecotourism is an alternative to mass tourism and meets the principle of meeting the needs of today's generation without harming future generations. Currently, ecotourism is one of the most rapidly developing types of tourism, which is an indicator of the development of public consciousness in an ecological sense (Aliyeva Zh. N., 2019). The basis of the scientific development and relevance of the problem is the study of the two territories as separate ecotourism destinations on the basis of the division of the former Almaty province in Kazakhstan today into Almaty and Zhetisu provinces.

Many scientists are looking for evaluation criteria for the natural potential for recreation and ecological tourism. Among such studies, it is worth noting the work of L.I. Mukhina "Principles and Methods of Technical Evaluation of Natural Compounds" (Mukhina, 1973). L.I. Mukhina places the issue of recreational assessment among social issues. It is possible to evaluate the objects of ecological tourism on the basis of blocks of natural tourist-recreational, socio-economic and tourist-economic facilities. The article analyzed the area using the point evaluation proposed by M. Mileskoi (1967) in determining the ecotourism attractiveness of the natural landscapes of South Kazakhstan, considering the natural prerequisites (topography, climate, water resources, flora and fauna).

In order to determine what issues should be prioritized in the development of regional ecotourism in Kazakhstan, it is necessary to assess the resources available to each region. However, regional climate, existing industrial infrastructure and current socio-economic conditions are unique to each region. From such a natural point of view, we can see the studies of the tourist flow and the recreational potential of the region in the works of Yegorova E. N. and Motrich O. V. In their research tourism opportunities are defined as a combination of natural, climatic, historical, cultural, social and economic

resources in a particular place. The authors take into account that the sum can be changed because depending on the tourism in the region, tourists can use different resources (Egorova E. N. & V., 2010).

During the study and assessment of ecological tourism in South Kazakhstan, we reviewed the works of several other foreign scientists and researchers. In particular, (Bavykin E. N. & M., 2015; Komarov M. E., 2015; Kulakov L. I. & A., 2017; Kulgachev I., Zaitseva N., Larionova A., Yumatov K., & L., 2017) and (E. Kusen & P. Tadei, 2003) developed their own method of classification of the tourist resource base. They proposed the possibility of determining the tourism attractiveness of the destination and then adding it to the tourism product based on its evaluation and importance. And (M. Rivero, 2016) present a graded response model (GRM), which allows for establishing a hierarchy of resources by creating a continuous latent scale.

### Materials and methods

South Kazakhstan region is one of the most developed regions of the Kazakhstan Republic in the economic and tourist spheres. This economic district includes Zhetisu, Almaty, Zhambyl, Turkistan and Kyzylorda provinces (Figure 1). Its territory is 712.2 thousand square kilometers. The region of South Kazakhstan occupies a huge territory from the Aral Sea in the west, to the Dzungar Gate in the east, and from Lake Balkash and the Betpak steppe desert in the north to the borders of China, Kyrgyzstan and Uzbekistan in the south of the republic. The territory of South Kazakhstan stretches for about 2000 km from west to east and about 700 km from north to south. The size of its territory takes second place in the republic after the West Kazakhstan region. There are many ecotourism destinations that are located in the southern regions of Kazakhstan. Most of them cover the north-western mountain chains of the Tian-Shan mountain (Akbar & Yang, 2022). One of the most important ecotourism destinations in the South Kazakhstan region is the Aksu-Zhabagyly State Nature Reserve, which is included in the list of natural world heritage by UNESCO, and it is located in the territory of one of our research areas, Turkistan Province (Akbar et al., 2022).

*Almaty Oblast (AlmP)*: There are “very fashionable” unique stock links of tourist demand in accordance with modern requirements in the Almaty province. According to the international program, the main 23 landscape-recreational zones of different functional significance have been established in

the territory of the region at a suitable level and in different sizes for year-round tourist-recreational activities. Ecotourism resources in Almaty province mainly include reserves, national parks, small reserves, natural monuments and state-registered hunting. For example, Balkash State Nature Reserve, Sharyn Shagan Grove State Natural Monument, Shynturgen Spruce State Natural Monument, Singing Sand State Natural Monument, Medeu Gorge, Esik Fortress, Golden Man and Tamgaly Archaeological Complex (included in the UNESCO list of cultural heritage), etc (<https://visitkazakhstan.kz>).

*Turkistan Oblast (TurP)*: Turkistan Province is one of the golden places that unite and bring together Turkic countries. One of the main directions of the tourism cluster of TurP is convenient to transport routes. The city of Turkestan, the capital of the province, is a symbol of cultural and historical tourism. The city has a lot of entertainment centers, modern hotels, cultural and historical centers, drama theaters, restaurants, water parks, sports and recreation facilities, markets and eco-tourism facilities for guests and residents. The mausoleum of Khoja Ahmet Yasawi (included in the UNESCO list of cultural heritage), ancient Otyrar, Sauran towns, Arystan bab mausoleum in Otyrar district, Akmeshit cave in Baidibek Bi district, Aksu-Zhabagyly, Karatau nature reserves, Sairam-Ogem state national park in TurP are the main resources of tourism (<https://7kun.kz>).

*Zhetisu Oblast (ZheP)*: Zhetisu Province is considered one of the most important regions in the Republic of Kazakhstan in terms of tourist flow. In the territory of the region, beach tourism is developed on the shores of Alaköl and Balkash lakes, ecological tourism is developed in the state national natural parks “Zhungar Alatau” and “Altyn Emel”, and mountain tourism is developed in Zhungar Alatau. There are tourist objects such as the Alaköl and Balkash coasts, “Altyn Emel” and “Zhungar Alatau” state national natural parks, Korin Gorge and Burkhan Bulak waterfall. The natural and climatic conditions of Zhetisu are suitable for the development of various types of tourism. Among them, there is an opportunity to develop recreational, cultural-historical, health-rehabilitation, eco, agro and sports tourism (<https://qazaqstan.tv>).

*Kyzylorda Oblast (KyzP)*: Kyzylorda province has a lot of natural, historical and socio-economic recreational resources for tourist excursion purposes (Aidarov, 2015). KyzP differs from other regions of the Republic in its nature, socio-economic and his-

torical conditions. This region is geographically located within the Turan basin, on the western slope of Karatau, in the lower reaches of the Syrdarya River. The northern branch of the Great Silk Road passed through the territory of the province. Chinese silk and Indian precious stones were delivered to Europe

and Great Siberia through this region. The convenience of the settled area has a great influence on the development of tourism. Based on the interest and demand of tourists, there are many opportunities to organize historical, cultural-artistic, eco- and ethno-tourism in this province.

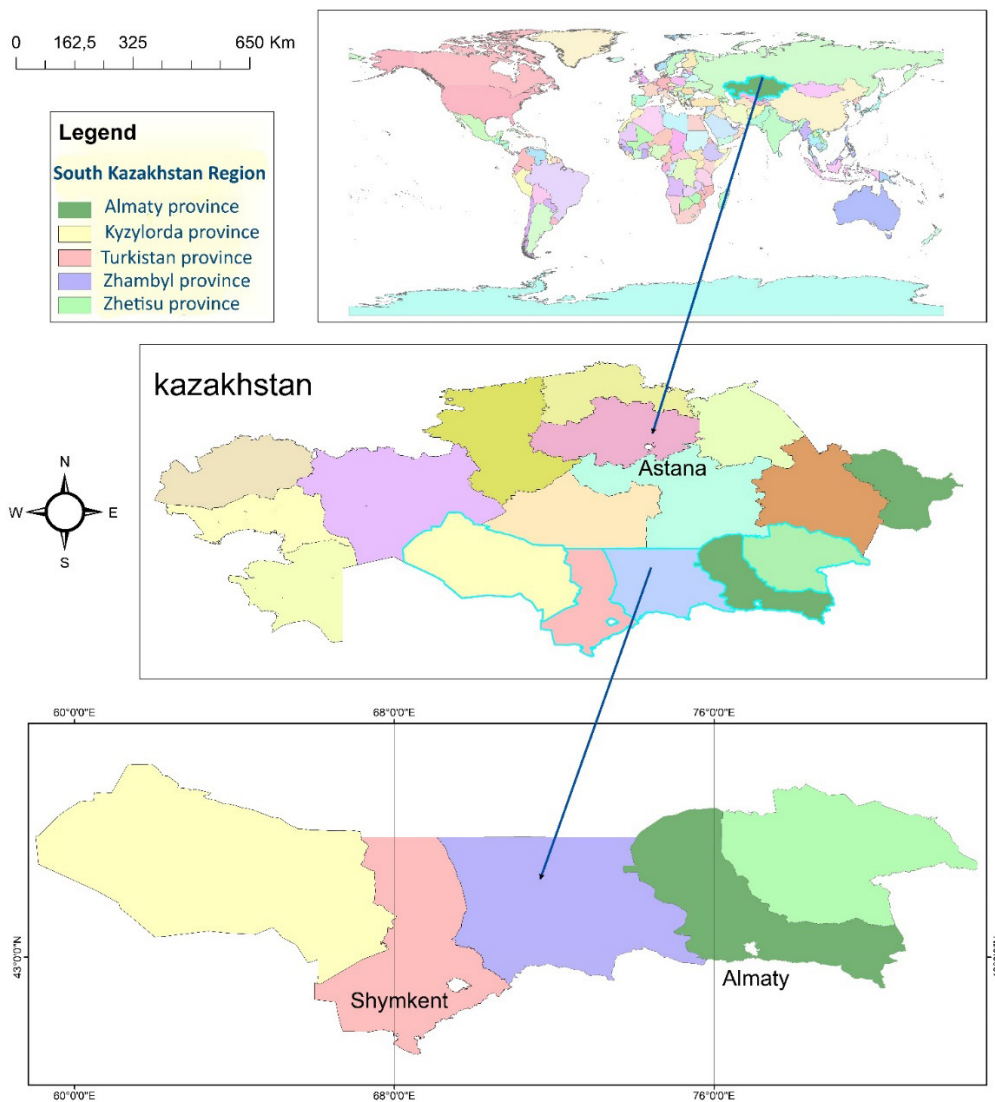


Figure 1 – The map of the south Kazakhstan region. © Imanaly Akbar

*Zhambyl Oblast (ZhaP):* Zhambyl Province ranks 10th in the Republic of Kazakhstan in terms of area and 5th in terms of population. The possibilities of tourism development in ZhaP are primarily determined by the tourist potential, which consists of a group of attractive sights for tourists. Thus, the tourist potential of ZhaP is determined by the following main groups of visual objects: a)

natural-recreational; b) historical and cultural; c) sacred places of worship; d) medical treatment; e) gastronomy; f) crafts; g) musical (Ableeva, 2020). The natural and recreational sights of ZhaP can be directed toward the development of ecological, natural-cognitive, scientific, and mountain tourism, as well as to the development of water recreation. The region has a rich history and many

historical monuments due to the fact that it is on the ancient Silk Road Sayram – Taraz – Aksholak – Akyrtobe – Kulan – Merki – Shu – Aspara – Kordai. Among them, “Aisha Bibi”, “Babazhi Katyn”, “Karakhan”, “Davitbek” and the mysterious town “Akyrtas” contribute to the development of historical and cultural tourism in the country, while the wonderful landscape for ecotourism and fishing affects the development of domestic and inbound tourism (<https://visitkazakhstan.kz>).

Determining the ecotourism attractiveness of natural landscapes in South Kazakhstan, we chose the assessment method of the territory by means of a score evaluation proposed by M. Mileskoi (1967). The classification of natural landscapes in the administrative regions of South Kazakhstan was made according to the given methodology.

During the recreational assessment of the natural tourist and recreational potential, the following stages should be noted:

- determination of the form of evaluation – natural complexes and their components and properties;
- identification of subjects from the point of view of assessment;
- development of price measurements defined as the scale and purpose of the research and the property of the subject;

- improvement of the parameters of the graded assessment scale;
- drawing up a regionalization map.

The classification of natural landscapes of the administrative regions of South Kazakhstan was made according to the given methodology. The result of the classification of the landscape type is the sum of the evaluation points for terrain, water, forests, the animal world and additional attractive natural objects (nature monuments, reserves, sanctuaries, national parks, etc.).

Taking into account the four-step rating scale from 0 to 3 points, we define 4 types of the tourist attractions for the territory:

- 3 points – very suitable;
- 2 points – suitable;
- 1 point – low suitable;
- 0 points – unsuitable.

Very suitable – landscapes that have the ability to create conditions for all types of long and short-term recreation, that is a landscape with all components of the natural complex. Suitable – a landscape in which one component of the complex is missing (for example, mountains). Low suitable – only 1-2 components of the complex. An unsuitable landscape is a landscape that does not have any attractive components for recreation or tourism at all (Aliyeva Zh. N., 2019).

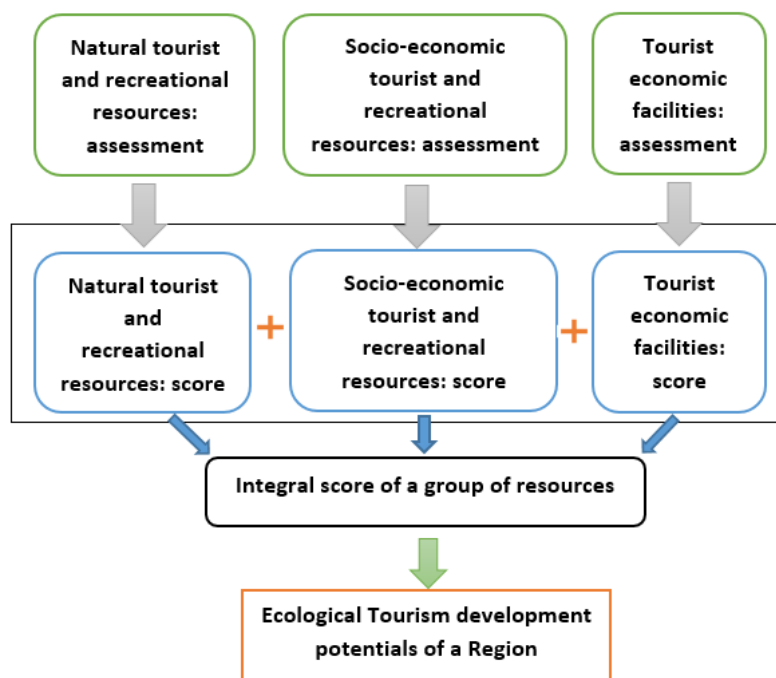


Figure 2 – An assessment model of ecological tourism development potentials. © Imanaly Akbar

The cartographic materials and data collected under the block “Natural tourist and recreational resources” represent the information necessary for the organization of work at the second stage of using the cartographic method in the intermediate study of the tourist attractiveness of the natural resources of the district. When considering the natural prerequisites (relief, climate, water resources, flora and fauna) and determining the tourist attractiveness of natural resources, we used both the description method and the point assessment method proposed by M. Mileska (Erdavletov S.R., Zhylybayeva M.I., & Sh., 2009).

Our main goal in this research is to assess the potential of ecological tourism in the southern regions of Kazakhstan. In order to achieve this goal, we will evaluate the resources necessary for the development of eco-tourism according to the three main groups shown in the model in Figure 2. First of all, we will calculate the scores of the classified needs in three groups separately, then we will create a new group of resources by taking the sum of the scores of the individual groups, and finally, we will evaluate the potential of the region for the development of eco-tourism using the total scores of the identified groups of resources.

## Results and discussion

The potential of natural tourism and recreation resources was classified according to their attractiveness for recreation and ecotourism. The classification of natural landscape types in five regions of the territory was carried out according to this

methodology. The result of the classification of landscape types was the sum of the points used to evaluate the terrain, water, forests and additional attractive objects of nature. On a scale from 0 to 3 points, five regions with different types of landscape were identified, as shown in Table 1. The applied system of assessment of natural conditions and resources made it possible to compare different areas and identify potential.

The table is filled in the following way: the total score of the landscape type is calculated by the number of landscape contours in the given points (where the sum of points is multiplied by the set number of contours). According to M. Mileskaya’s methodology, a three-level scale of landscape assessment for recreation and tourism was adopted: very suitable (3 points); suitable (2 points); unsuitable (1 point). For example (for the TurP), 1 point \* 2=2., the number 2 is written in the first column; or 2 points \* 3=6., the number 6 is written in the second column; or 3 points \* 3=9., the number 9 is written in the third column. The most attractive landscapes with ideal conditions for all types of long and short vacations are rated with 3 points. These include plains, forest-steppe landscapes, mountain forests and river floodplains. Landscapes with favorable conditions (2 points) are suitable for all types of short-term individual and mass recreation. They include steppe landscapes of plains and mountains, sea coasts, lakes and reservoirs. Landscapes with unfavorable recreation conditions (1 point) include dry steppe, dry steppe plains, semi-desert small hills and semi-desert flat landscapes.

**Table 1** – Coverage of South Kazakhstan with natural tourist and recreational resources

South KZ Regions	Landscape types			Natural monuments	State nature reserve	Regional nature reserve	National parks	Arboretum	Botanical gardens	Bodies of water of state significance	Origins of mineral waters	Professional hunting animals	Total
	1point	2 point	3 point										
TurP	2	6	9	-	2	5	1	1	-	-	5	6	36
AlmP	2	24	14	4	2	4	4	1	2	4	-	15	72
ZheP	2	22	9	-	-	4	-	-	-	-	-	6	42
ZhaP	-	6	18	-	1	3	-	-	-	1	2	8	37
KyzP	8	-	12	-	1	2	-	-	-	1	-	7	30

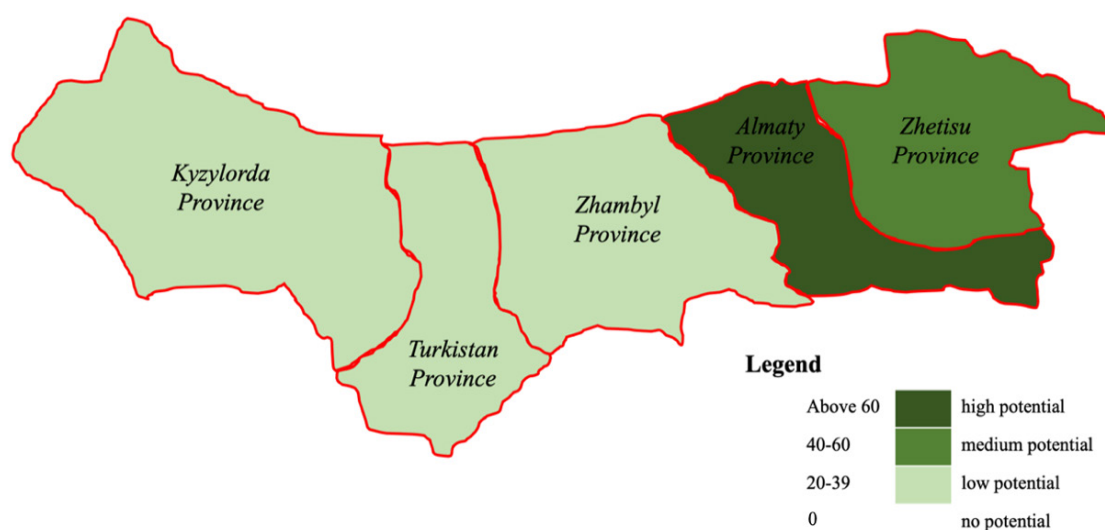
Note: compiled by authors based on data sources from (<https://www.stat.gov.kz>)

The number of objects marked from the 5th to the 12th column is counted for 1 point. For example, 2 nature reserves on the territory of the district are calculated for 2 points; or if there are 3 types of commercial animals in the territory, then 3 points will be given to it, and so on.

13 columns are the evaluation scale that is the basis for making a final assessment. Based on this, natural tourist and recreational resources in the regions of Kazakhstan can be divided according to the degree of tourist attractiveness. After analyzing the

last columns (13), we created a four-step equal interval rating scale. Intervals are above 60, 40-60, 20-39 and below 20 as shown in Figure 3.

A map of the attractiveness of the natural tourist and recreational resources of South Kazakhstan was created using the above interval rating scale (Figure 3). Landscapes with tourist attractions were presented with a different color background, which describes different attractiveness levels of natural tourist and recreational prerequisites in the region.



**Figure 3** – Attractiveness of tourist and recreational resources of South Kazakhstan  
Note: Compiled by authors based on data from (Table 1)

According to the conducted study, the rank of the regions in terms of natural tourist and recreational resources in South Kazakhstan was determined. In terms of natural tourist and recreational resources, we attribute Almaty province to regions with high potential, Zhetisu province to the regions of medium potential, and Zhambyl, Turkistan and Kyzylorda provinces to the regions with low potential.

The concept of recreational resources includes anthropogenic objects and phenomena other than the components of the natural complex. However, regardless of the importance of cultural and historical objects in tourist-recreational resources, natural conditions have priority because they are the material basis of tourism and recreation development. Therefore, the assessment of the natural structure of recreational resources is widely covered in the geographical literature of domestic and foreign researchers. In other words, the assessment of socio-economic recreational resources is less developed

than the assessment of natural recreational resources.

“Socio-economic recreational resources” include historical and cultural objects (monuments and commemorative places, museums, exhibitions, etc.) and other cultural attractions located in nature. These resources are also divided into material and spiritual, movable and immovable. Types of socio-economic recreational resources were selected depending on the scope of the main environmental tourism research: archaeological monuments, architectural monuments, sacred objects, monumental art constructions, museums in nature and petroglyphs (Table 2).

The next important stage of the evaluation of cultural and historical objects is typology (including uniqueness, recognition, attractiveness, educational value, and external appearance) based on their recreational value. The attractiveness of socio-economic facilities for recreational purposes is also determined by the time limit required to visit them.



**Table 2** – Coverage of South Kazakhstan with socio-economic recreational resources

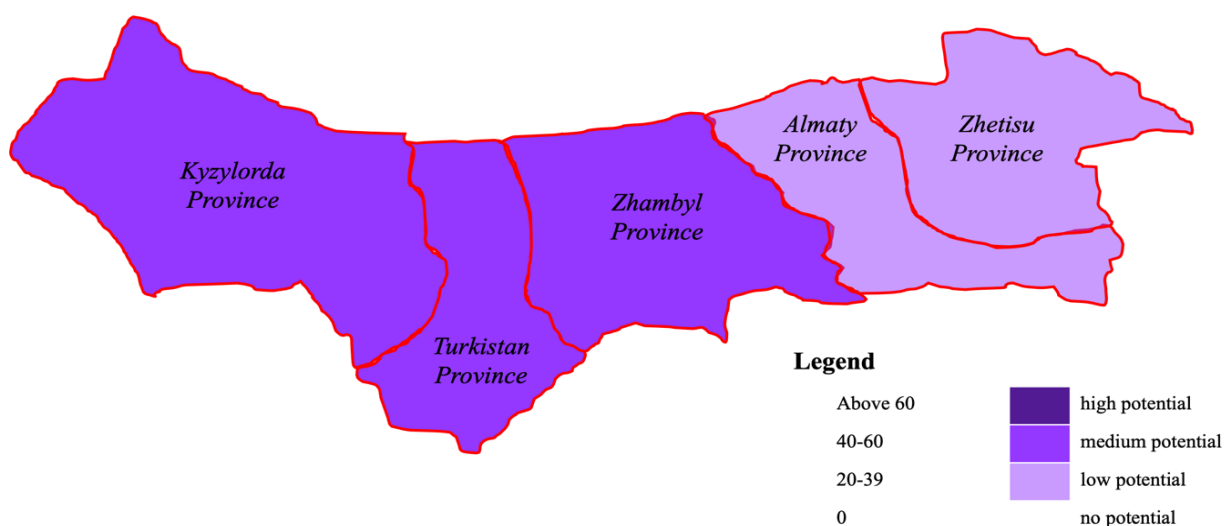
South KZ Regions	Archaeological sites	Architectural monuments in nature	Sacred places in nature	Memorial art construction in nature	Nature museums	Petroglyphs	Natural heritage monuments	Mausoleums	Temples and mosques	Medieval city/town centers	Total
TurP	6	12	-	-	6	2	2	6	15	5	54
AlmP	3	-	-	1	11	4	3	-	12	2	36
ZheP	2	2	-	1	5	8	1	1	10	1	31
ZhaP	13	5	-	1	3	4	-	2	12	4	44
KyzP	7	7	11	-	2	1	-	5	9	3	45

Note: compiled by authors based on data sources from (<https://www.stat.gov.kz>)

Analyzing the data in the total points column of Table 2, setting an interval of the same size accordingly, a 4-step scale was created: from high to low (for example, above 60, 40-60, 20-39, below 20).

A map of the capacity of socio-economic recreational resources in the territory of South Kazakhstan was compiled using the interval rating scale shown above (Figure 4). The capacity of socio-economic recreational resources on the territory of the region

is presented with a different color background. According to the conducted research, the rank of regions was determined based on the capacity of socio-economic recreational resources in South Kazakhstan. Zhambyl, Kyzylorda and Turkistan provinces are considered medium potential regions for the capacity of socio-economic recreational resources, whereas Zhetisu and Almaty provinces have low potential.



**Figure 4** – Capacity of socio-economic recreational resources of South Kazakhstan

Note: Compiled by authors based on data from (Table 2)

The tourist economic facilities play a key role in the territorial system as one of the main elements of the tourist offer. The suitability of the territory for the development of tourist movements is assessed not only by natural and cultural values but also by the development level of its tourist economic facilities. Tourist economic fa-

cilities can be divided into two main categories such as direct and indirect. They are closely related. Institutions and objects for providing services to tourists can be attributed to the group of direct tourist facilities, for example, campsites, hotels, camping, special roads, transportation centers, etc.

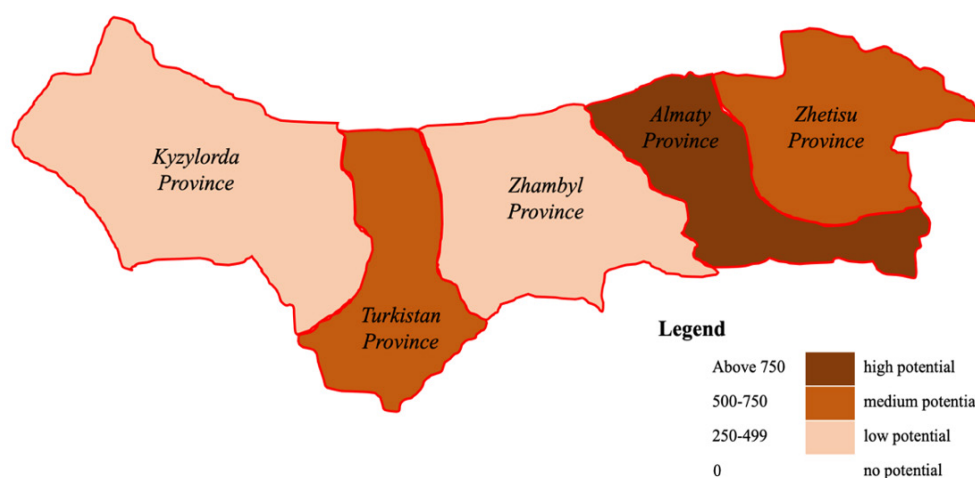
**Table 3** – Coverage of South Kazakhstan with tourist economic facilities

South KZ Regions	Travel agencies	Accommodation facilities	Airports	Railway stations	Bus stations	Service stations	Gas stations	Catering establishments	Large commercial fishing sites	Hunting bases	Large supermarkets	Customs ports	Ski resorts	Health camps	Total
TurP	101	104	1	24	32	8	28	193	12	2	8	2	-	17	532
AlmP	197	179	2	42	9	6	56	345	37	18	17	1	4	6	919
ZheP	123	80	1	30	8	8	41	240	4	3	6	3	-	4	551
ZhaP	30	62	1	46	-	6	35	155	26	6	4	4	-	4	379
KyzP	11	58	1	53	14	7	41	125	4	10	4	-	-	9	337

Note: compiled by authors based on data sources from (<https://www.stat.gov.kz>)

And the group of indirect tourist economic facilities includes institutions and objects that are not tourist oriented but are used by tourists. They are general state roads, transport, communication, a network of restaurants, shops, communal services, and household and cultural institutions (Table 3). Tour-

ist economic facilities are certain complexes consisting of various economic sectors, their creation and development are determined by the constant arrival of tourists. This sector consists of production branches that complement each other and can satisfy the demand of tourists only in a complex situation.



**Figure 5** – Saturation of South Kazakhstan with tourist economic facilities.

Note: Compiled by authors based on data from (Table 3)

Column 15 in Table 3 is the evaluation scale that is the basis for making the final assessment, and it is also the basis for the regionalization of the selected provinces according to the saturation degree of tourist economic facilities. The background of the assessment map of the tourism industry of South Kazakhstan is the level of “saturation” of tourist facilities in the region. For this, we analyzed the total score of indicators (15th column) and compiled a

four-step scale with the same interval of “satiation” level. The intervals are divided into four categories such as above 750, 500-750, 250-499 and below 250 according to the calculated sum score and painted with the corresponding color (Figure 4). Then they were displayed in the form of a graphic map. The gradation intervals on the cartogram are different from each other, they are distinguished from each other by the background color (Figure 4).

**Table 4** – Total tourist and recreational resource potential score of South Kazakhstan by regions

South KZ Regions	Total score for natural resources	Total score for socio-economic resources	Total score for tourist economic facilities	Total score for tourist and recreational resource potential
TurP	36	54	532	622
AlmP	72	36	919	1027
ZheP	42	31	551	624
ZhaP	37	44	379	461
KyzP	30	45	337	412

*Note:* Calculated based on data from (Table 1,2,3)

According to the conducted research, the degree of saturation with tourist economic facilities IN South Kazakhstan was determined. In terms of saturation with tourist economic facilities, we attribute only Almaty province to high potential, Zhetisu and Turkestan provinces to medium potential, and Zhambyl and Kyzylorda provinces to low potential regions.

The ecotourism potential of South Kazakhstan provinces was determined by analyzing the data in Table 4 and Figure 6. One of the main goals of the research was to determine the overall ecotourism potential of South Kazakhstan based on the sum of points in the first three tables, and finally, we made a table of total points and a cartogram according to those results (Figure 6), (Table 4).

The total score in Table 4 was calculated by adding the sum of the scores of the 3 tables above and then 4 scales were created by dividing the scores into equal intervals. The intervals are above 900, 600-900, 300-599 and below 300. The highest value scale is “high potential”, the next is “medium potential”, then “low potential” and the lowest value scale is “no potential”. According to the saturation level of the resources necessary for the development of ecological tourism, the background of the cartogram was painted with different colors based on the gradation intervals.

According to the conducted research, the degree of saturation with the necessary resources for the ecotourism of South Kazakhstan was determined. The potential of the region was determined based on its saturation with the necessary resources. The results of the study showed that Almaty province is a high-potential area, Zhetisu and Turkistan provinces are medium-potential areas, and Kyzylorda and Zhambyl provinces are low-potential areas in the region.

The transition to ecologically safe and sustainable development is one of the main directions of the foreign and domestic policies of the Republic of Kazakhstan. Currently, there are significant opportunities to start the process of improving the living environment of Kazakhstani people, to integrate the activities of the departments and to unite the society, to solve the national priorities for the future of the country. Assessment of the current state of the environment requires attention to the most important issues. The examination of the state of the environment by the relevant organizations identified priority environmental problems that require solving in the first place. Based on our research, they are summarized as follows:

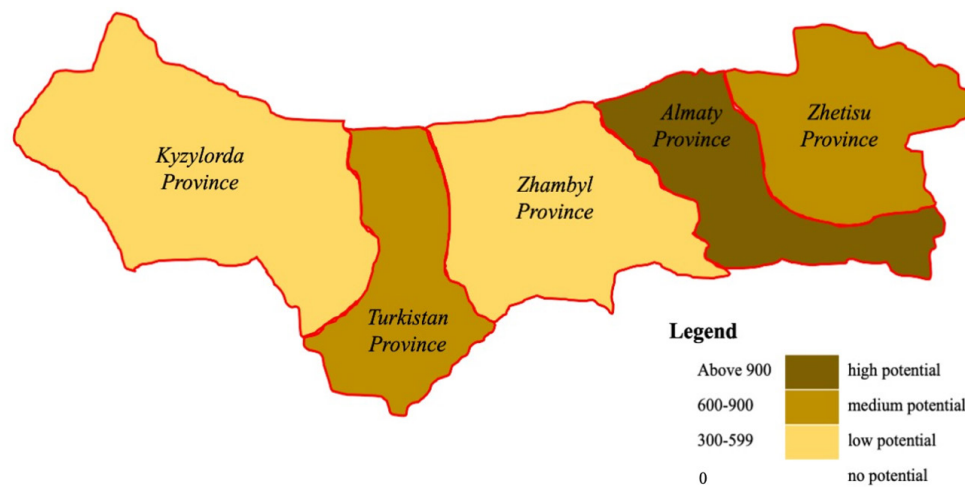
- scarcity of water resources;
- degradation of pastures and fields;
- atmospheric air pollution in urban areas;

- pollution of water bodies with wastewater;
- pollution of the environment with solid industrial and household waste;
- lack of forests and specially protected natural areas.

The development of ecotourism is the most effective way to reduce the negative impact on the ecosystem as a result of tourist activities. Almost all countries of the world pay great attention to the development of ecotourism (Nazarchuk M. K., 2001). As we observed in our research, with its own characteristics, there is a great opportunity to create a competitive tourism industry in South Kazakhstan.

They can be described as follows:

- favorable geopolitical situation of the region, which requires the passage of international tourist and commercial flows through this territory;
- political stability, implementation of democratic changes and economic reforms;
- various natural landscapes, diversity of flora and fauna for the organization of ecological tourism;
- diversity of various cultural and historical recreational resources that are objects of ecological tourism;
- availability of free labor resources.



**Figure 6** – Saturation of South Kazakhstan with ecotourism facilities

Note: Compiled by authors based on data from (Table 4)

However, despite this, there are a number of problems with the development of ecological tourism. The current tourism system in Kazakhstan cannot fully satisfy all the needs and wishes of tourists. Most recreational resources require the creation of a fairly complex material base.

### Conclusion

The pandemic has exposed the extreme vulnerability of the tourism industry. Never before has global tourism experienced a setback of this magnitude, and this makes analysis of demand for individual destinations extremely important, as the results can help identify potential target markets and new demand segments (Csobán et al., 2022). In order to develop, plan, manage and monitor ecotourism and ensure its long-term development, UNWTO has defined the following basic principles:

- ecotourism should contribute to the protection, improvement and sustainable development of natural territories;
- ecotourism requires the implementation of specific policies, strategies and programs for each country, region and territory;
- ecotourism requires harmonious and effective coordination systems with all interested parties, including government agencies, non-governmental organizations and local communities;
- ecotourism planning should include specific criteria for the division of territories into districts, should designate specially protected areas and areas with a low tourist impact;
- infrastructure in the field of ecological tourism should be developed in such a way that natural landscapes do not undergo significant changes; it is necessary to use energy sources that do not pollute the environment;

- means of transport and communication used in ecotourism areas should have a low level of pollution;
- it is necessary to introduce organizational, financial, tax and other mechanisms that allocate monetary income from ecotourism mainly to the needs of specially protected natural areas;
- education and professional training are necessary conditions for sustainable development and management of ecotourism;
- ecotourists need complete and specific information “before the trip” and “during the trip”. Providing detailed information is one of the elements that distinguish ecotourism from traditional tourism, and this information can be provided in various forms (brochures, guides, maps, booklets, etc.);
- advertising materials about ecotourism should include sufficient information about the visited area.

Taking into account these recommendations and principles, the development of eco-tourism in South Kazakhstan and the effectiveness of nature protection work will increase, and at the same time, it can play a major role in improving the environmental situation and stimulating the sustainable development of the country (Sustainable development).

We evaluated the main tourist and recreational resources necessary for the development of ecotourism in this region. As a result, South Kazakhstan is considered to be one of the great special and high-potential regions for the development of ecological tourism. As a basis for this, we can say that the region is very rich in tourist-recreational and socio-economic resources, at the same time, it has enough tourist economic facilities compared to other regions in the Republic of Kazakhstan. If we use these resources efficiently and economically, the ecological tourism of the territory will develop faster.

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