

## ISSUES OF ASSESSMENT OF THE NATURAL RESOURCE POTENTIAL OF THE REGION FOR RECREATIONAL PURPOSES

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**Abstract.** *The article focuses on the evaluation of the recreational potential of regional natural resources in Uzbekistan, emphasizing its favorable geographical location and rich cultural heritage. It reviews methodological approaches, including economic evaluation and cadastral systems for assessing both natural and anthropogenic recreational resources. The study highlights the challenges of objective evaluation and underscores the importance of developing comprehensive frameworks to boost sustainable tourism and regional development in the post-pandemic period.*

**Key words:** *tourism, recreational potential, natural resources, economic evaluation, regional development, methodology, post-pandemic.*

## ВОПРОСЫ ОЦЕНКИ ПРИРОДНО-РЕСУРСНОГО ПОТЕНЦИАЛА РЕГИОНА ДЛЯ РЕКРЕАЦИОННЫХ ЦЕЛЕЙ

**Аннотация.** *В статье рассматриваются вопросы оценки рекреационного потенциала природных ресурсов региона Узбекистана, характеризующегося благоприятным географическим положением и богатым культурным наследием. Анализируются методологические подходы, включая экономическую оценку и использование кадастровых систем, для комплексного изучения как природных, так и антропогенных рекреационных ресурсов. Особое внимание уделено проблемам объективной оценки и необходимости разработки комплексных методик для устойчивого развития туризма и регионального развития в постпандемический период.*

**Ключевые слова:** *туризм, рекреационный потенциал, природные ресурсы, экономическая оценка, региональное развитие, методология, постпандемия.*

**Introduction.** Uzbekistan has a great potential for tourism and recreation, along with its favorable natural and geographical location, rich historical heritage. The country has about 7,500 cultural heritage sites and unrepeatable natural and climatic tourism resources. Such a huge potential, in turn, means that there are many opportunities for our country to become one of the leading tourist regions of the world.

Due to the development of foreign and domestic tourism, the increase in the number of foreign and local tourists, the need to use the natural conditions and natural resources of various regions for the purposes of recreation and tourism, along with the effective use of cultural and historical tourism objects in our country, is increasing. This, in turn, requires the assessment of the natural conditions and resources of the regions for the purposes of recreation and tourism.

The nature and natural resources of the regions of our country have not been evaluated for recreational and touristic purposes, and from this point of view, the topic of this article is relevant.

Each region will have its own recreation resource potential. Recreational resources are understood as resources that contribute to the improvement and restoration of a person's ability to work and live. Recreational resources are formed naturally and anthropogenically. While anthropogenically formed recreation objects are aimed at improving people's health and mood, natural recreation resources serve to restore people's health, mental mood, and work ability.

Tourism, as one of the important sectors, is of great importance in the conditions of sustainable development for the economy of the world, its regions, and various countries. There is no country, no region, no corner of the world that tourists are not interested in. From the cold deserts of the Arctic, to the hot savannahs of Africa, from the impassable jungles of the Amazon, to the barren deserts of Kyzylkum and Karakum, all regions have their own recreational potential.

Currently, experts in the field of world tourism are conducting various studies on the ways and methods of restoring and revitalizing tourism in post-pandemic conditions and recommending their proposals. In order to implement the various proposed scenarios and options, it is necessary to thoroughly study the social-economic, natural-ecological conditions of each region, as well as the natural-recreational quality.

The effectiveness of tourism and recreation development of each region depends on the level and scale of its tourist resources and conditions serving tourists. For this reason, in order to determine the prospects for the development of certain types of tourism in the region, it is necessary not only to describe the existing tourist resources, but also to evaluate them at a comprehensive level, which, in turn, will ensure the effective use of these resources.

**Methodological basis of the research.** In the course of the research, the laws of the Republic of Uzbekistan, decisions and decrees of the President of the Republic of Uzbekistan, works, decisions of the Cabinet of Ministers, scientific works of well-known scientists in the economic, social, and political fields, their content and essence were studied, and the available indicators were analyzed statistically.

At the same time, methods such as logical thinking, scientific observation, systematic approach, and comparative analysis were used in the study of information and theories related to the topic.

**Literature review.** The issues of evaluating the natural resources of the regions for the purposes of recreation and recreational resources for the purposes of tourism are being conducted by various scientists and research institutions based on different approaches. We analyze the research of a number of scientists in this regard.

I.I. Ziganshin and D.V. Ivanov's article on the topic "Methodology of comprehensive assessment of the recreational potential of specially protected natural areas" discusses the author's methodology for comprehensive assessment of the recreational potential of specially protected natural areas on the example of specially protected natural areas<sup>1</sup>.

In the case of the Republic of Tatarstan, when assessing the recreational potential of an area or object, it is proposed to take into account indicators such as natural attractiveness, cultural and educational value, the convenience of transport and infrastructure, the presence of environmental hazards for protected natural objects and their visitors.

In the research work of I. Koroleva on the topic "Functional model of recreational evaluation of rural areas"<sup>2</sup>, in the world experience, only 12-15% of the population's demand for recreation in rural areas is satisfied, which is related to the fact that rural tourism resources are not used effectively and the absence of a comprehensive methodology for evaluating rural tourism resources at the federal and regional levels. It is emphasized that the methods of evaluation of recreational potential do not evaluate tourism resources in rural areas, the potential of rural tourism should be evaluated by the quality of services provided by rural properties. The author analyzed the literature on rural tourism and studied the phenomenon of rural tourism. He argued that the term rural tourism can be seen from two perspectives. In the first case, it is necessary to take into account the attractions specific to the village (village), and in the second - non-urbanized (city) areas.

The issue of recreational evaluation of regions is studied in the thematic research paper "On the issue of recreational evaluation of territories" written by Porosenkov and Mishon<sup>3</sup>. It covers the issues of technical, aesthetic and economic, social evaluation.

R.I. Geta, A.V. Egorina, K.T. Saparov, N.J. Jensikbaeva's research "Method of assessing the recreational potential of the Kazakh part of Altai based on the information theory"<sup>4</sup> based on

<sup>1</sup> Зиганшин И.И., Иванов Д.В. Методика комплексной оценки рекреационного потенциала особо охраняемых природных территорий". <https://cyberleninka.ru/article/n/metodika-kompleksnoy-otsenki-rekreatsionnogo-potentsiala-osobo-ohranyaemyh-prirodnih-territoriy>.

<sup>2</sup> Королева И. Функциональная модель рекреационной оценки сельской местности.

<sup>3</sup> Поросенков Ю.Б.ва Мишон Е.Б. "К вопросу об оценке рекреационного потенциала территории". <http://www.vestnik.vsu.ru/pdf/geograph/2009/02/2009-02-02.pdf>.



information theory, issues related to the methodological basis of assessing the recreational potential of the Kazakh part of Altai are considered. Analysis of certain methods of evaluation of recreation systems is carried out. The entropy method, which is the fundamental basis of information theory, was chosen as the most suitable method. It is based on the fact that the results of this method can be used as a characteristic of the landscape diversity of natural areas in relation to recreational systems.

The results of the study of theoretical approaches to the problem of economic evaluation of the tourism and recreation potential of the region are presented in the thematic research work "Methodological features and problems of the evaluation of touristic and recreational resources of the regions" by N.Grdzelishvili and L.Kvaratskhelia<sup>5</sup>. The authors identify approaches to the economic evaluation of recreational resources and present a developed classification of methods of economic evaluation of recreational resources. The classic approach of vertical zoning of geographical landscapes of the territory of the Republic of Georgia has been implemented.

In the article<sup>6</sup> "Methodological fundamentals of the assessment of the recreational territories resource potential" by N. Stupen, it is noted that the methodological approach to the comprehensive assessment of the resource potential of recreational territories implies the use of an integrated index that takes into account the system of indicators according to the following, based on analytical generalizations and problems identified in the study of recreational resources: nature and resource, historical-cultural, socio-economic and ecological. An assessment of the level of resource potential of recreational areas in Ukraine was carried out. Integral index calculations carried out in the regions of Ukraine are grouped according to the resource potential of recreational areas into high, medium, low and very low levels.

All tourist resources are evaluated in three groups: natural-climatic, historical-cultural, socio-economic. In practice, the methodology of economic evaluation of tourism resources is relatively fully developed. Based on this methodology, 4 main types of tourism resource evaluation are distinguished: medical-biological, aesthetic, technological and economic. The most difficult of these is the economic evaluation.

In the conditions of the market economy, every product and service should have its own value, including natural and recreational resources. For each service provided, for each product used, it is necessary to pay according to its specific value, otherwise, these services and products

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<sup>4</sup> Гета Р.И. , Егорина А.В., Сапаров К.Т., Женсикбаева Н.Ж. Метод оценки рекреационного потенциала казахстанской части алтая на основе теории информации. <https://expeducation.ru/ru/article/view?id=8666>.

<sup>5</sup> N.Grdzelishvili va L.Kvaratskhelia. Methodological features and problems of assessment of tourist and recreational resources of the territory. <https://cyberleninka.ru/article/n/methodological-features-and-problems-of-assessment-of-tourist-and-recreational-resources-of-the-territory>.

<sup>6</sup> Stupen N. Methodological fundamentals of the assessment of the recreational territories resource potential <https://www.cabidigitallibrary.org/doi/pdf/10.5555/20193245047>.

will be used inefficiently and barbarically. Therefore, another goal of the economic evaluation of natural and recreational resources is to properly organize their protection.

Recently, most of the experts in various fields of science - economists, ecologists, doctors, geographers - have been attracted to the development of recreation. Recreational activities are aimed at restoring human health, restoring physical and, most importantly, mental strength. In order to strengthen the protection of these resources and encourage their rational use (by setting fees for the use of natural resources), their economic evaluation is necessary.

Such evaluation allows to determine the effectiveness of various measures aimed at more complete and rational use of resources. Economic evaluation of natural resources is also referred to as investment evaluation. Capital expenditure and natural resources are mostly used together.

The transition from some technological methods of extracting and using natural resources to others may cause different needs for additional capital investments or, on the contrary, may be exempt from some parts of capital costs. In addition, almost all natural resources can be used alternatively.

The main problem is that it is very difficult to economically evaluate natural recreational resources. To date, approaches have been developed to evaluate the resources in question based on the point method. However, these evaluation methods are not recognized as complete, because they are not free from subjectivity and cannot fully provide indicators that are suitable for economic analysis. At the same time, many properties of natural resources can be measured only with relative values, for example, the value of the landscape. Therefore, when quantitative methods are not yet possible or have not yet been developed, the use of scoring methods is a relatively superior method of assessment.

International and local experts emphasize that the Republic of Uzbekistan has a rich tourist potential. This mainly refers to the general characteristics of the country's nature along with our existing historical and cultural potential. However, the natural conditions and resources of the republic and its regions have not yet been evaluated for tourism and recreational purposes.

For us experts, it is necessary for the Republic of Uzbekistan to be a region with developed tourism in the future, effective and full use of the existing capacity, full economic evaluation of the touristic potential of the regions in this regard, when creating network programs aimed at the development of the industry and regions.

The cadastral system of accounting and assessment of natural resources ensures the collection and effective use of a large amount of data. In general, the cadastre should not only reflect information about the natural state of the resource, but also include the approximate characteristics of their use. Current problems of nature management are that the cadastre cannot fulfill only the role of registration.

The composition of the cadastre must also meet the requirements of economic and environmental efficiency of resource use. The biggest difficulties are related to determining the composition of cadastral indicators, selecting technical and economic parameters, calculating and determining the evaluation criteria. Qualitative and quantitative indicators serve as the basis for grouping and classification of natural resources. At the same time, the estimated data should be compared, providing the possibility of natural and economic zoning. Thus, the methodological basis of the cadastre is a collection of accounting, production and estimated indicators of economic content. The main task here is to ensure the protection of the natural resource and increase the efficiency of its rational use.

*Natural conditions and use of resources require their assessment. The evaluation procedure consists of the following stages:*

1. Selection of evaluation objects - natural complexes, their components and properties;
2. To isolate the subject to be assessed;
3. Formation of assessment criteria determined by the research scope, purpose and features of the topic;
4. Development of parameters of gradation grading scales. The scale shows the approximate relationship between the subject and the object.

Each stage indicates the intensity of the interaction of this particular feature of the object with the subject. A five-level scale for evaluating the conditions for recreation includes the following gradations: the most comfortable; convenient; moderately comfortable; low convenience; uncomfortable.

There are three main types of assessment of natural resources: medical-biological, psychological-aesthetic and technological. The medical-biological type reflects the effects of natural factors on the human body, its comforts. Assessment of recreational climate resources plays a leading role in this process.

Climate is a long-term weather pattern characteristic of a certain area. Its impact on a person can be manifested through specific weather, which is understood as a set of interrelated meteorological phenomena (the state of the lower layer of the troposphere in a certain area).

Special attention is paid to the condition of the human body as a response to weather conditions. Climatologists and balneologists in assessing the climate attach great importance not only to the physical aspects of the weather, but also to its emotional state. The comprehensive evaluation method uses the conditional (effective) temperature system. They are characterized by the complex influence of meteorological elements: air temperature, relative humidity, wind speed, sunlight and long-wave radiation.



A complex indicator describing the effect of temperature and humidity is called effective temperature (ET); temperature, humidity and wind speed - equivalent effective temperature (EET); temperature, humidity, wind speed and solar radiation - radiative equivalent temperature (RET).

The concept of "comfort zone" for many people is related to the concept of conditional temperature between 17 and 23 °C. Outside of it, a person feels cold or hot. A comfortable zone for active recreation is around 12-16 ° EET. The variety of weather is analyzed using 16 classifications defining weather classes, which in turn form three groups: non-cold weather (8 classes), air temperature exceeding 0°C (2 classes) and frosty weather (6 classes).

All classes of weather are most comfortable for people, when there is a lot of sun during the day, the visible and ultraviolet rays are very good, the light and the surrounding landscapes are especially attractive. According to the value of contrast variability, the following weather regimes are distinguished: very stable (up to 25%), stable (25-34%), variable (35-50%), very variable (more than 50%).

When assessing the effect of weather conditions on the body, much attention is paid to the body's heat exchange with the environment, because ultimately the body's condition is mainly determined by sensitivity to heat.

To objectively assess the effect of weather on the human thermal state, it led to such a criterion as the tension level of the thermoregulatory mechanisms of the body, which is determined by the change in the average weighted temperature of the human body or the change in the amount of sweating.

Depending on the average temperature measured taking into account heat perception, the types of weather encountered were divided into 9 categories - from very cold to very hot. "Comfortable state" is the most pleasant thermal sensation, which occurs when a person feels neither heat nor cold - when the average skin temperature is 31-33 °.

In hot weather, the tension of the body's thermoregulatory mechanisms is characterized by the amount of sweating, and in cold weather, it is characterized by the value of the average measured temperature of the skin. A survey method is also used based on the subjective assessment of various climate factors by a group of subjects. Psychological-aesthetic assessment examines the emotional impact of the specific features of the natural landscape or its components on a person. We are talking about the emotional reaction of a person to a certain natural complex.

Thus, it would not be wrong to say that there is a great demand for places with high aesthetic value.

Uzbekistan, including the Bukhara region, is considered to have favorable climatic potential. We will try to evaluate the climatic indicators of the Bukhara region for the purposes of recreation.

The climate of the Bukhara region is definitely created and manifested under the influence of the mutual cooperation of several factors. The geographical position of the territory of the country is of leading importance in this regard. If we consider that Central Asia is located in the interior of the Eurasian continent, then the territory of Bukhara region is located in the middle of Central Asian deserts and has climatic characteristics typical of southern (subtropical) deserts.

The region is characterized by a harsh continental desert climate with subtropical characteristics. The tension between night and day, winter and summer temperatures, relatively warm, capricious spring, long-lasting (VI-XI months), dry, scorching hot, very bright summer, short (X-XI months) and unstable autumn, warm and sometimes frosty unstable winter are the main features of the climate.

Additionally, Bukhara is considered one of the prosperous regions. During the year in Bukhara, there are 2,800-3,000 hours of sunny days, compared to 2,852 hours in Tashkent and 3,053 hours in Termiz. The total amount of radiation from the sun is 150-160 kcal/cm<sup>2</sup>. The annual sum of the useful temperature, i.e. the average daily positive temperature of more than 10 degrees, reaches 4800-5100 degrees. This makes it possible to grow very heat-loving cultural plants. The coldest period in our region is January, and the hottest is July.

We suggest that the following statements in order to develop tourism in post-pandemic conditions, effectively use the tourist potential in the regions, and properly protect natural and recreational resources:

- formation of a list of natural and recreational resources and facilities for all regions;
- formation of cadastral data (ecological, technological, natural, economic) of natural and recreational resources and objects in the regions;
- development of economic assessment of natural and recreational resources in the regions;
- allocating grants of the Ministry of Innovative Development for the implementation of the above-mentioned activities, conducting project competitions;
- to establish the use of the obtained data and the results of the evaluation works in regional development programs.

### **Conclusion and Recommendation.**

The analysis demonstrates that the comprehensive evaluation and effective management of regional natural-recreational resources are crucial for fully manifesting the tourism potential



of Uzbekistan, ensuring efficient resource utilization, and safeguarding natural assets. The research confirms the relevance of employing methodological approaches, including cadastral systems and economic evaluation methods to assess and optimize the natural resource base. In the post-pandemic era, it is essential to develop scientifically grounded and well-planned strategies to revive and enhance tourism. And we suggest following recommendations:

Conduct a comprehensive inventory and create a detailed registry of regional natural-recreational resources.

Develop economic evaluation models for natural assets and refine the cadastral system.

Modernize recreational and tourism infrastructure, and design as well as implement investment projects.

Enhance regional adaptability to tourism development through innovative grants and dedicated development programs.

Strengthen local and international cooperation to formulate and implement regional strategies.

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