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# Interconnection of the natural agro-tourist potential of the rural territories of Western Siberia and the living standards of the rural population

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**Abstract.** The methodological approach to the study of the relationship between the natural agro-tourist potential of rural areas and the standard of living of the rural population is justified in the article. Methodology for estimating the natural agro-tourist potential of rural territories and the methodology for assessing the living standard of rural population of municipal districts are developed. In accordance with the proposed methodology, an assessment was made and the relationship was identified between the natural agro-tourist potential of rural areas and the level of life of the rural population. The higher assessment of natural potential shows the higher living standards of the rural population. At the same time, it was revealed that the effective implementation of high natural agro-tourist potential and the increase of the level of life of the rural population on this basis have a significant impact on the remoteness of rural areas from the regional center and the development of transport infrastructure.

## 1. Introduction

The natural potential of the rural territories of Russia is characterized by considerable diversity, and in the last 5-10 years, along with the minerals, it becomes an important factor in the socio-economic development of the regions. The decision of the problem of diversification of regional economic complexes and the search for effective models of sustainable development of rural territories forced the leaders of the municipal, regional and federal levels to pay close attention to the possibility of involving in the economic activity of existing natural and climatic features of non-resort regions. A significant number of legal acts of all levels aimed at the development of agro-tourism in the regions is a consequence of this process [1].

An important role in the development of rural agro-tourism, along with the natural potential, is played by the subjects of the agro-industrial complex, since the availability of agricultural production and processing of agricultural products in itself can become the center of attraction of tourists to the countryside.

The study of the relationship between the natural agro-tourism potential of rural areas and the standard of living of the rural population is the purpose of this study.

The following tasks were solved to achieve the goal:

1. The methodological approach is justified to conduct the study;
2. A methodology for assessing the natural agrotourism potential of rural areas and the standard of living of the rural population is developed;



3. The assessment was carried out in accordance with the developed methodology, and the relationship between the natural agro-tourism potential and the standard of living of the rural population was revealed.

The subject of the research is the relationship between the natural agro-tourism potential of rural territories and the standard of living of the rural population. The object of the research is the interrelations and interrelations of the subjects of rural territories in the process of involving the natural agro-tourism potential in the economic activity of the region, the socio-economic effects caused by this process.

The study was carried out on the materials of the Omsk region, which is located in the south of Western Siberia. The area of the region is 141 thousand km<sup>2</sup>, the length from north to south is 600 km, from west to east is 300 km. The region includes 32 municipal districts located in four climatic zones: Northern, Northern Forest-Steppe, Southern Forest-Steppe, and Steppe. The peculiarities of the geographical location of the region led to significant natural diversity: the north of the Omsk region is taiga and swamps, the south is endless steppes, and one of the largest rivers in Russia, the Irtysh, flows through the region and flows into the Ob river. The “Ob-Irtysh” watercourse is the first in length in Russia and the sixth in the world. The listed climatic features significantly increase the natural agrotourism potential of rural areas of the region.

## 2. Materials and Methods

The methodology of the study is based on the post-non-classical type of scientific rationality, in which the object of study is considered as a self-developing environment, and the relationship between the subjects is defined through the paradigm “subject - polysubject environment” [2]. This study was carried out in the framework of the subject-oriented scientific approach, the basic model of which is “human-sized” (combined) systems.

Within the framework of the accepted methodology of research, the natural agrotourism potential of a region can be defined as a combination of natural and climatic conditions, as well as interconnections and interrelations of subjects in the implementation of all activities based on the use or critically dependent on the natural and climatic conditions of rural areas.

Based on the formulated definition of natural agritourism, the potential of rural areas includes [3]: (1) unique natural objects or climatic conditions that are a factor in attracting tourists to rural areas; (2) existing agrotourism projects based on the involvement of the climatic features of rural areas in economic activities; (3) ecological well-being of rural areas, which is expressed in minimizing the negative impact on natural and climatic conditions as a result of economic activity (minimizing emissions to the environment, minimizing fertilizer application in the production of agricultural products), (4) road infrastructure of the region, which allows potential tourists to get to unique natural sites or existing agrotourism projects (provision of local roads and the proportion of local roads with hard surface). Assessment of the natural agrotourism potential is carried out within the boundaries of the municipal districts of the region.

Table 1 presents indicators for assessing the natural agrotourism potential of rural territories.

**Table 1.** Indicators for assessing the natural agro-tourism potential of rural territories.

№	Indicator Name
1	The number of unique natural objects or climatic conditions in the territory of the municipal district, units;
2	The number of existing agrotourism projects, units;
3	The share of captured and neutralized pollutants obtained as a result of economic activities and not released into the environment, %;
4	The amount of fertilizer applied to 1 ha of the sown area, kg. a.s. (active substance);
5	Provision of motor roads of local importance, km per 1 sq. km of area;

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## 6 The share of local roads with hard surface, %.

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The rating scale for each indicator is the rating of municipal districts, built from the lowest to the highest. The integral point estimate of the natural agrotourism potential of the rural territories of each municipal district is formed as the sum of the places in the rating for each indicator. The higher the integral score, the higher the natural agrotourism potential.

The development of the natural agro-tourism potential of rural areas inevitably affects the standard of living of the rural population. The indicators presented in Table 2 are indicators of this impact.

**Table 2.** Indicators of an estimation of a standard of living of rural population which are influenced by the development and realization of natural agro-tourism potential.

№	Indicator Name
1	The rural population of the municipal district
2	The proportion of the working population in the total population of the district, %
3	Share of rural population living in dilapidated housing, %
4	The average wage level of the population working in the field of realization of agro-tourism potential, rub.
5	The proportion of employed workers in the implementation of agrotourism potential of the total number of employees, pers.
6	The total number of buildings and structures involved in the development and implementation of natural agro-tourism potential, units

The rating scale for each indicator is the rating of municipal districts, built from the lowest value to the highest (except for the share living in dilapidated housing). The integral point estimate of the standard of living of the rural population of each municipal district is formed as the sum of the places in the rating for each indicator. The higher the integral score, the higher the standard of living.

A comparison of the two integral assessments will make it possible to identify the relationship between the natural agro-tourism potential and the standard of living of the rural population.

### 3. Research Results

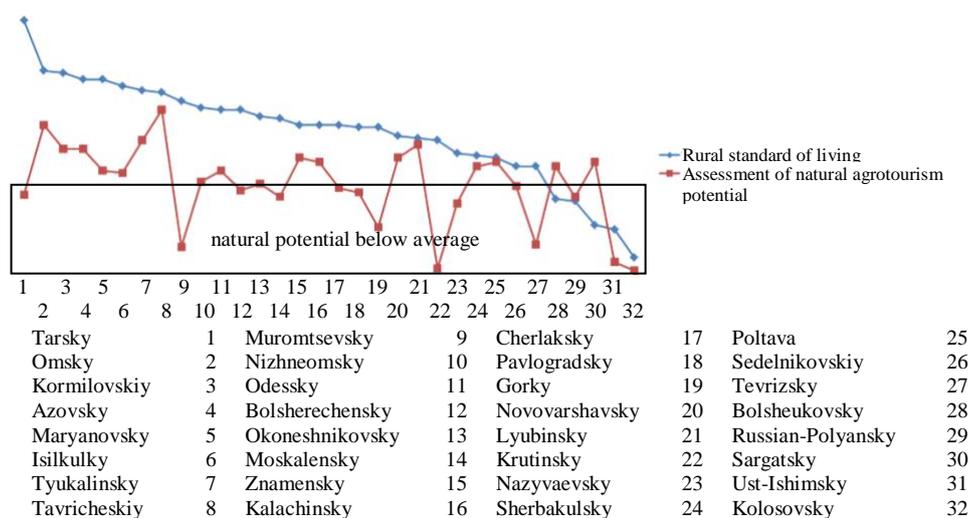
The results of the assessment of the natural agro-tourism potential are presented in Figure 1.



**Figure 1.** The results of the assessment of the natural agrotourism potential of rural territories of municipal districts of the Omsk region.

According to the level of development of natural agrotourism potential, the entire set of municipal districts of the Omsk Region can be divided into 4 groups. The first group includes 6 areas in which the level of development of natural potential is the highest. In the next two groups, there is a gradual decrease in agrotourism potential; in areas of the fourth group, the natural agrotourism potential is the lowest.

Figure 2 presents data characterizing the dependence of the standard of living of the rural population and the level of development of the natural agro-tourism potential.



**Figure 2.** Data characterizing the dependence of the standard of living of the rural population and the level of development of the natural agrotourism potential.

The analysis of the data presented in Figure 2 allows us to draw the following conclusions: a high standard of living for the rural population is typical for municipal districts with an agro-tourist potential estimated above the average. The exceptions are the Bolsheukovskiy and Sargatskiy districts,

which have a high agro-tourism potential, but with the lowest standard of living of the rural population in the Omsk region. This is due to the low availability of unique natural sites for potential tourists due to poorly developed road network and low length of local roads with hard surface.

#### 4. Conclusions

The analysis showed that a certain relationship between the natural agro-tourism potential and the standard of living of the rural population in the municipal districts of the Omsk region is traced. With rare exceptions, the higher the estimate of the natural agrotourism potential, the higher the standard of living of the rural population. At the same time, this pattern is typical only for those municipal districts in which the transport infrastructure is well developed. Otherwise, the high agrotourism potential cannot be fully realized, as potential tourists have difficulty in visiting the unique, inaccessible natural complexes [3]. In addition, the farther the district is located from the regional center (the city of Omsk), the fewer opportunities there are to reach the agro-tourism potential. As a result, in remote areas with poorly developed infrastructure, the standard of living of the rural population is lower.

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