

DOI: 10.46299/ISG.2023.MONO.ECON.1.10.1

10.1 Efficiency of the use of tourist and recreational potential in the Lviv region

Tourism and recreation potential is the natural, cultural and social resources that can be used to develop tourism and recreation activities in a particular area. This potential includes picturesque landscapes, historical sites, cultural events, natural resources, and opportunities for recreation and tourism. The purpose of developing tourism and recreational potential is to create attractive tourist destinations and incredible experiences that will encourage visitors to visit and participate in various activities.

The tourism and recreational potential can be assessed by several criteria, among which accessibility, attractiveness, and availability of infrastructure such as transportation, housing, and facilities can significantly affect the effectiveness of a tourist destination. Good infrastructure can attract more visitors and encourage them to stay longer. Developing tourism and recreation potential requires careful planning and management. This may include identifying and preserving important natural and cultural resources, improving infrastructure, and promoting sustainable tourism practices. The development of tourism and recreation potential has a positive impact on the local economy by creating jobs and generating income, as well as providing visitors with unique and memorable experiences.

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Tourism and recreation potential can vary depending on the location and available resources in a particular area. For example, coastal regions may have potential for beach and water activities, while mountainous regions may have potential for hiking and winter sports. Identifying and developing a region's unique tourism and recreational potential can help create a distinctive tourism destination and enhance the visitor experience.

The effectiveness of the use of tourism and recreational potential is an understanding of how effectively a particular tourist destination or recreational facility uses its resources to attract visitors and generate revenue. The main factors that influence the efficiency of using the tourist and recreational potential of a territory are

- infrastructure and ease of access to a tourist destination affects its effectiveness, as destinations that are difficult to reach or require complex logistics can deter visitors.
- marketing activities are crucial for the promotion of goods and services in the tourism sector,
- a diversity of offerings offering a variety of experiences, such as cultural, recreational or adventure activities, can attract a wider audience and keep visitors interested,
- environmental development, such as ecotourism, responsible tourism and nature conservation, can positively affect the efficiency of a tourist destination by attracting visitors looking for environmentally friendly and socially responsible experiences [466],
- safety, as ensuring the safety of visitors is crucial to the effectiveness of a tourist destination.

Lviv region is one of the most developed regions of Ukraine in economic, tourism, cultural and scientific terms. The natural conditions of the region are diverse and favorable for the development of agriculture, recreation and tourism. A number of important waterways in Central and Eastern Europe - the Dniester, Western Bug and Syan - originate in the region. Lviv region has a favorable geographical location. Part

of its territory is made up of the Ukrainian Carpathians with significant recreational resources, and the other part is located in the forest-steppe physical and geographical zone, which facilitates the economic activity of the population [467].

Lviv region has significant natural resources, which gives it the potential to become a world-class tourist region. This is facilitated by the efficient and rational use of the region's natural tourist and recreational potential. In terms of natural and recreational resources, Lviv region is one of the leading regions in the country: their share in the natural resource potential of Ukraine is about 5.4%. The natural recreational potential of the region is represented by healing mineral waters, therapeutic mud, ozokerite, climatic, water and forest resources [468. 469].

It is important to determine the structure of the entire natural resource potential (NRP) of the Lviv region and to identify the place occupied by one or another of its components in the integral (total) value. The methodology for determining the component structure of the territory's NRP on the example of Ukraine was developed by V. Rudenko [470]. For a comprehensive and general characterization of the assessment of the TFP of the Lviv region, the entropy measure of diversity calculated by the Shannon formula was used (1.):

$$H = \sum_{i=1}^n p_i \log_2 P_i \quad (1.)$$

where, n – is the number of types of natural resources,

P_i – is the share of a natural resource in the integrated natural resource potential of the territory.

The total potential of Lviv region in Ukraine is 3.8%. Lviv region ranks eighth among the regions of Ukraine. Land (29.2% of the total resource potential), water (22.7%), and mineral (22.5%) resources account for the largest share in the component structure of Lviv region's resources. The indicated potential of natural recreational resources (14.3%), forest (11.1%) and faunal (0.2%) is lower (Table 1).

Table 1

Natural resource potential of Lviv region [470, 471, 472]

Indicators		Ukraine	Lviv region
Total potential, % of the total for Ukraine			3,8
Resource potential, %.	Mineral	28,3	22,5
	Water	13,1	22,7
	Land	44,4	29,2
	Forest	4,2	11,1
	Faunal	0,5	0,2
	Recreational	9,5	14,3

The total TFP in Lviv Oblast is higher in its mountainous part (53.6%) than in the plain part (35.9%). This situation is due to the higher potential of water (28.5%), forest (13.2%), and natural recreation (16.9%) resources in the mountainous part of the region. In the plain part of Lviv oblast, these types of resources account for a much smaller share - 16.0, 8.7, and 11.2%, respectively. However, mineral (25.8%, in the mountainous part 19.7%), land (38.0%, in the mountainous part 21.6%) and faunal (0.3%, in the mountainous part 0.1%) resources prevail in the plain part of Lviv oblast [472]. Component structure of the natural resource potential of Lviv region by administrative districts.

The available natural resources of the region (mineral, water, land, forest, faunal and recreational) have a significant impact on the formation of the spatial and sectoral structure of the economic complex, and determine the priority areas for the development of various tourism sectors, including ecological and rural tourism and agritourism.

Lviv region has a strong potential for recreational resources based on the landscape attractiveness of mountainous areas, the possibility of developing summer and winter tourism, and the reserves of medicinal mineral waters. There are about 4 thousand historical, cultural, and architectural monuments in the region (25% of those registered in Ukraine), including more than 800 of national importance that attract tourists [468, 473]. The territory of the region is an excellent base for the development of various types and forms of tourism and recreation.

The tourism and recreational potential of Lviv region is based on natural

(climatic, balneological, landscape, water, forest, nature reserve fund) and historical and cultural (archaeological, historical, artistic, event and information, cultural and household, sacred and architectural) tourism resources. This also includes the tourist infrastructure, which is formed through the effective functioning of hotel and restaurant facilities, sanatoriums, transport system and tourist enterprises, entertainment industry and consumer services. [469]

The region is located in the zone of deciduous and coniferous forests and is one of the most forested regions of Ukraine. The forests of Lviv region perform an important recreational, phytosanitary and health-improving function, and are used for tourism, sports, health and recreation purposes. The forest coverage of the Lviv region is 28%, while in Ukraine it is about 14.5%. The area of the forest fund of Lviv region is approximately 706 thousand hectares, and the area covered by forest is 623 thousand hectares [474]. The species composition of the forests of Lviv region is favorable for the development of various types of tourism in rural areas, with a focus on mushroom, berry, medicinal herb, hunting, etc.

The leading place among the components of the natural potential of Lviv region belongs to water resources (surface runoff of rivers, groundwater, lakes and swamps). The Lviv region is one of the most water-sufficient regions, as it has approximately 3 thousand m³ of fresh water per capita per year, which is 3 times higher than the average water availability in Ukraine [475]. There are 8950 rivers flowing through the region, 216 of which are more than 10 km long, belonging to the Black and Baltic Sea basins. The vast network of rivers, of which the largest are the Dniester, Western Bug, Stryi, Bystrytsia, Styr, Vyshnia, Rata, Solokia, and Svicha, are suitable for active tourism, recreation, and health improvement. The total length of the rivers is 16343 km. The rivers Stryi, Opir and their mountain tributaries, the Dniester River and the Stryvigor River (Strviah) are among the most valuable river stretches. These rivers are located within protected areas and are habitats of rheophilic fish included in the Red Data Book of Ukraine.

The region's tourist and recreational value is provided by parks, reserves, natural monuments, the Roztochia Nature Reserve, which is included in the UNESCO World

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Network of Biosphere Reserves, the Skole Beskydy National Nature Park, the Northern Podillia National Nature Park, the Yavoriv National Nature Park, and the Ravske Roztochia. In addition, the regional landscape parks "Dniester Beskydy" and "Znesenie" are of great importance [468]. Objects of the nature reserve fund of Lviv region (Table 2).

Table 2

Objects of the nature reserve fund of Lviv region [468, 478]

	Number of objects			Area, ha		
	2010	2015	2018	2010	2015	2018
In total	329	353	377	148539	157511	158314
Of national importance	25	25	25	64552	64552	64552
Roztochya Nature Reserve	1	1	1	2085	2085	2085
National natural parks	3	3	3	58351	58351	58351
"Yavorivsky"	1	1	1	7079	7079	7079
"Skole Beskydy"	1	1	1	35684	35684	35684
"Northern Podillya"	1	1	1	15588	15588	15588
Customers	9	9	9	3303	3303	3303
Natural monuments	2	2	2	593	593	593
Botanical gardens	2	2	2	41	41	41
Dendrological parks	2	2	2	64	64	64
Parks-monuments of landscape art	6	6	6	115	115	115
Local importance	304	328	352	83987	92959	93762
Regional landscape parks	4	5	5	47379	56289	56289
"The Demolition"	1	1	1	312	312	312
"Nadsyansky"	1	1	1	19428	19428	19428
"Upper Dniester Beskydy"	1	1	1	8536	8536	8536
"Ravske Ravske"	1	1	1	19103	19103	19103
"Stilske Hilly"	-	1	1	-	8910	8910
reserves	33	34	48	27563	27602	27956
Natural monuments	164	183	193	1772	1768	2241
other objects	103	106	106	7273	7300	7276

Lviv region is one of the leading regions in the country in terms of health and wellness resources. These include more than two hundred healing springs of 7 types of mineral waters, therapeutic mud and the largest deposit of ozokerite in Ukraine. These unique resources are the basis for the development of Truskavets, Skhidnytsia,

Morshyn, Nemyriv, Velykyi Liubin, and Shklo, which are well-known in Ukraine and abroad. The highlight of the Truskavets and Skhidnytsia resorts is the Naftusia mineral water. [476].

As of January 1, 2019, the nature reserve fund of Lviv region included 377 sites with a total area of 158313.7 hectares. The ratio of area The nature reserve fund occupies 7.25% of the total area of Lviv region. The territories of the reserve fund are located throughout the region, but their largest number is located in the Carpathians and Roztochchia [478]. Distribution of the area of the nature reserve fund of Lviv region by categories (Fig. 1).

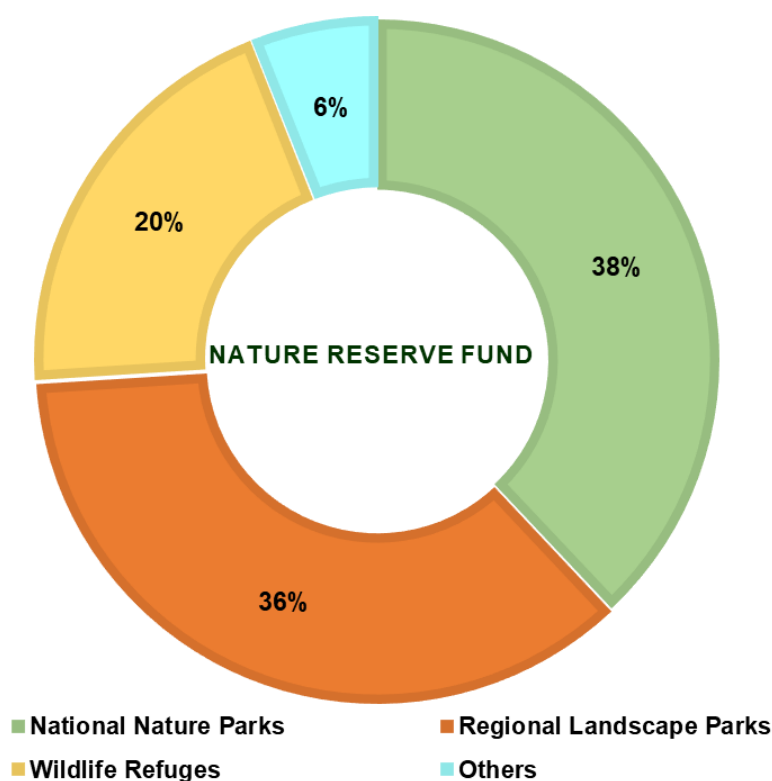


Figure 1. Distribution of the area of the nature reserve fund of Lviv by categories [478]

The territory of the mountainous part covers 17% of the area of Lviv region, where 210 settlements are located, which is about 11% of the total number of settlements in the region [479]. Today, 245 tourism enterprises, 124 sanatoriums and resorts, more than 1,100 rural tourism estates, 250 accommodation facilities, 12 tourist information centers, 280 catering establishments, more than 162 state and public

museums and galleries, 10 theaters, etc. are fully operational in Lviv region. Interesting tourist routes are well developed and organized in the region, served by 750 qualified guides and tour guides and interpreters.

In terms of tourism and recreational potential, Lviv region is one of the leading regions in the country. More than a quarter of Ukraine's historical and cultural heritage is concentrated in the region. Lviv region has a significant cultural potential. The total number of monuments of history, archeology, urban planning and architecture, and monumental art in the region is 3934, including 816 of national importance. On the territory of Lviv region there are: 886 archaeological monuments, 3822 historical monuments, 3431 architectural and urban planning monuments, and 302 monumental art monuments [468].

The tourism and recreation potential of the region is one of the leading and most profitable in the western region. Taking into account the peculiarities of the study area, it should be noted that the tourism and recreation industry of Lviv region has developed significantly due to its favorable geographical location, rich natural resources, historical and cultural potential. The diversity of natural conditions and the richness of recreational resources in the Lviv region create favorable conditions for the development of various types of tourism, including ecotourism, skiing, sports, rural tourism, and agritourism.

It has been established that a certain share of tourists who used the services of travel agencies spent their vacations in rural green estates of Lviv region. The number of tourists served by tour operators and travel agents in Lviv region in 2012-2020 by type of tourism (Table 3).

The city of Lviv is particularly popular with tourists, with about 2.5 million visitors in 2019 (2018: 2.2 million), mostly residents of other Ukrainian cities, as well as Poles (27.3%), Belarusians (9.5%) and Turks (9.2%). The share of foreign tourists is about 65%, while domestic tourists are 35%. Tourists more often choose to stay in hostels (31%) and apartments (30.1%). At the same time, 29.5% of visitors prefer hotels [480].

**Number of tourists served by tour operators and travel agents
in Lviv region, persons [480]**

Year	Number of tourists served by tour operators and travel agents, total	Including.		
		Inbound (foreign) tourists	outbound tourists	domestic tourists
2012	124013	19033	63706	41274
2013	188520	16162	131530	40828
2014	92128	2015	61465	28648
2015	112472	3057	60830	48585
2016	181827	8370	74877	98580
2017	175150	6042	82653	86455
2018	182255	7617	112757	61881
2019	249442	7929	159164	82349
2020	100824	357	76729	23738

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It is worth noting that due to the pandemic (COVID-19), the number of tourists in Lviv alone decreased by about 10 times in the first 6 months of 2020! The share of foreign tourists decreased to 6.7%. However, the share of domestic tourists has increased by 3.2 times, which in the context of the pandemic actually develops domestic tourism in all its directions. This situation is an impetus for the development of domestic tourism, which is primarily due to the closure of borders and the risk of traveling abroad. However, poor service and high prices for travel services scare off domestic tourists, who often organize their own vacations without contacting tour

operators, hotels, or travel agencies.

In 2018, the average expenditure per tourist was 74 euros per day, while in 2019 it increased to 94 euros. At the same time, foreigners spend more in Lviv than Ukrainian tourists. Overall, in 2019, Lviv's city budget received UAH 196 million from tourism, which is UAH 45 million more than in 2018. The average length of stay of tourists in Lviv is 3-4 days. A significant number of tourists who have visited Lviv recommend it to their friends. The index of tourist attractiveness of Lviv is defined at 4.76 out of 5, while the index of tourist satisfaction with services is 4.25 out of 5 [477].

According to the Lviv Regional State Administration, in 2018 Lviv region received UAH 13.4 million in tourist tax. In the first 11 months of 2019, tourists who visited the region paid almost UAH 21 million in tourist tax. In 2019, Lviv region received UAH 20.8 million from the tourist tax. This is 57.8% more than in the first 11 months of 2018. Visitors paid the most tourist tax in the cities of Lviv (UAH 10.1 million), Truskavets (UAH 5.5 million), Boryslav (UAH 1.4 million), and Morshyn (UAH 300 thousand) [480].

A number of problems and obstacles have been identified for more efficient use of the tourist and recreational potential of Lviv region and development of the tourism business:

- irrational use of the tourist and recreational potential of rural areas of Lviv region;
- a large concentration of tourists in the city of Lviv and tourist centers, as well as their uneven distribution across the region;
- the inadequate state of the region's tourist and recreational infrastructure (lack of medical facilities, poor condition of roads to tourist sites, lack of coordinated tourist routes, uneven concentration of tourist sites in the region)
- lack of staffing of specialists in the field of tourism, resorts and recreation;
- irrational use of natural resources and lack of effective state control;
- low level of readiness of the region to serve tourists with inclusive needs;
- decreased attractiveness of landscapes due to a number of environmental problems, including water pollution, land contamination, deforestation, reduced

biodiversity, excessive load on certain tourist sites, etc.

Overall, the effective utilization of tourism and recreation potential depends on a combination of factors that together create a positive experience for visitors, encourage repeat visits, and generate revenue for the destination.

Thus, tourism and recreation potential and a rich historical and cultural heritage, together with a favorable geographical location, are key prerequisites for the development of the tourism business. Lviv region is one of the leading regions in Ukraine in terms of tourist and recreational resources. Overall, the region's tourism and recreation potential is strong, but its use should be made more efficient.