

The Natural Tourism Potential of Galați City and Its Sustainable Capitalization

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Abstract

This study analyzes the natural tourism potential of Galați Town within the context of sustainable development, starting from the quantitative and qualitative assessment of the natural tourist patrimony, with the purpose of highlighting the elements of attractiveness, as well as the local factors that encourage or hinder tourist functionality. The qualitative assessment of the tourist potential, undertaken by quantifying the tourist sights, which were grouped into several types, has allowed the identification of the tourist attractions. A particular attention has been paid to the natural vegetation, which has not been seriously impacted by the human society and which has been protected and preserved within the framework of the Natura 2000 European Programme. The analyses undertaken and the bioclimatic indicators computed based on the existing data prove that in this area the local climate is favorable for the tourist activities. Our interest on this topic stems from the desire to highlight the tourism potential of this geographical space and to promote it at the national level.

Keywords: *natural tourism potential, tourist sights, geosites, protected natural areas, climate favourability*

Rezumat. Potențialul turistic al orașului Galați și valorificarea sa durabilă

Acest studiu analizează potențialul turistic natural al orașului Galați în contextul dezvoltării durabile, pornind de la evaluarea cantitativă și calitativă a patrimoniului turistic natural, cu scopul de a evidenția elementele de atractivitate, precum și factorii locali care încurajează sau împiedică funcționalitate turistică. Evaluarea calitativă a potențialului turistic, realizat prin cuantificarea atracțiilor turistice, care au fost grupate în mai multe tipuri, a permis identificarea atracțiilor turistice. O atenție deosebită a fost acordată vegetației naturale, care nu a fost foarte afectată de societatea umană și care a fost protejată și păstrată în cadrul Programului european Natura 2000. Analizele întreprinse și indicatorii bioclimatici calculați pe baza datelor existente dovedesc că în această zonă climatul local este favorabil pentru activitățile turistice. Interesul nostru pentru această temă provine din dorința de a evidenția potențialul turistic al acestui spațiu geografic și de a-l promova la nivel național.

Cuvinte-cheie: *potențial turistic natural, atracții turistice, geosituri, arii naturale protejate, favorabilitatea climatului*

Basic notions

Tourism, as a form of capitalizing the natural resources, has become an economic branch with major impact on the contemporary society.

According to Ielenicz and Comănescu (2009), the tourism potential is “the aggregate of the natural and anthropogenic elements lying on a certain territory, which arouse the interest of tourists and lead to the development of tourist activities”. P. Cocean defines the tourist potential in a more synthetic manner as being “the result of the spatial association of the tourist patrimony with the

corresponding material and technical base”. The narrowness of these definitions can be explained by the fact that the respective authors refer only to a part of the tourist sights, more exactly to the known elements. M. Ielenicz (2011) completes the definitions starting from the necessity to separate two groups of components within the tourist potential: the known and capitalized ones, on the one hand, and the less known and still scarcely visited, or dormant, so to speak, on the other hand. Therefore, depending on the degree of recognition, one can speak of a dormant tourist potential (consisting of less known elements) and a known tourist potential (formed of those elements that are

known and promoted, which boost the development of tourist activities).

The natural tourist potential that can be taken into account by tourist activities includes the natural tourist attractions, i.e. those elements of the natural setting having a touristic value (Ielenicz, Comănescu, 2009).

The geographical environment with its components, topography, climate, hydrography and vegetation, is not only the supplier of natural tourist sights, but it also represents the background and the origin of the tourist phenomenon, which groups into a whole the multitude of elements that bring their contribution to the development of tourist activities.

Of the elements that form the geographical environment, the most widespread in the area of Galați Town are those belonging to the vegetation. In other words, besides its economic and protection functions the vegetation has an obvious tourist potential expressed by the beauty of the landscape, as well as by its aesthetic and scientific value. At the same time, the vegetation has always offered spots for rest, recreation and leisure activities. But the vegetal cover is the most sensitive element of the geographical landscape, as it suffers the impact of both the natural controls (topography, climate, hydrography, soil) and the human pressure (Cocerhan, Fluțar, Spănu, 2012).

Raised issues

The natural tourist potential of Galați Town

The natural tourist potential of Galați Town is given by its geographical location, which makes it a transit zone to other regions with more diversified tourist potential, such as the Danube Delta and the Black Sea Coast. The natural tourist potential includes the beautiful scenery that can be seen when looking down from the Brateș cliff to the floodplains of the Siret and Prut, as well as the reserves protected by law. We can also add to these the improved cliff promenade of the Danube (3 km long) and the Public Gardens.

The bio-geographical component, although known to a certain extent, is poorly capitalized. The most important attractions included in this category are the following: the Gârboavele Forest, located in the outskirts of the city, visited mostly at the end of the week for recreation; the Botanical Garden, a scientifically designed park having also a leisure

function; the parks used for resting and recreation; and last, but not least, the natural reserves (fig. 1).

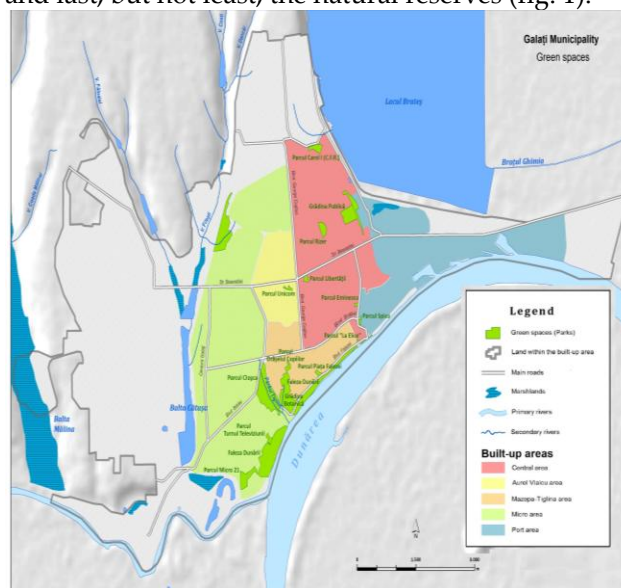


Fig. 1: The green areas of Galați Town

The protected natural areas of national interest and the nature monuments are important both from the aesthetic point of view, as elements of tourist attraction, and from the scientific and educational standpoint, as a basis for ecotourism and scientific school travel. Sometimes, these stand as distinct tourist attractions, but usually they are associated with other landscape components (fig. 2).

The situation of the protected natural areas on the territory of Galați County was assessed based on the data posted by the Ministry of Environment and Water Management on its internet page. The gathered information highlights the fact that there are two sites of community interest (SCI), namely the Lower Prut floodplain and the Prut River Island, and one site of avifauna protection (SAP), represented by the Brateș Lake (fig. 3). The special protection areas of the "The Lower Prut Floodplain" Natural Park are the following: Lake Brateș, including the fish hatchery in the south, as well as the reed and swamp vegetation areas; the Prut River Island; and the dammed stretch of the Prut River, between Punct Vama Giurgiulești and Vlădești.

The capitalization of the natural tourist potential

Galați Town benefits from a valuable natural capital, characterized especially by a high variety of bio-geographical resources, including unique elements (species and habitats), although the areas

occupied by the natural and semi-natural ecological systems are small (only 19.8% of the entire area).

Methods for estimating the value of the natural tourist potential

The attractiveness of the tourist potential may be assessed based on the following elements: accessibility (location, transportation infrastructure),

terrain conditions (hypsothetic steps), rivers, lakes, nature monuments, reserves and parks, climate conditions (weather parameters, seasonal features, air purity, the frequency of sunny days, snow cover depth and duration), microclimate and topoclimate, the beauty of natural landscape and the cultural-historical heritage.

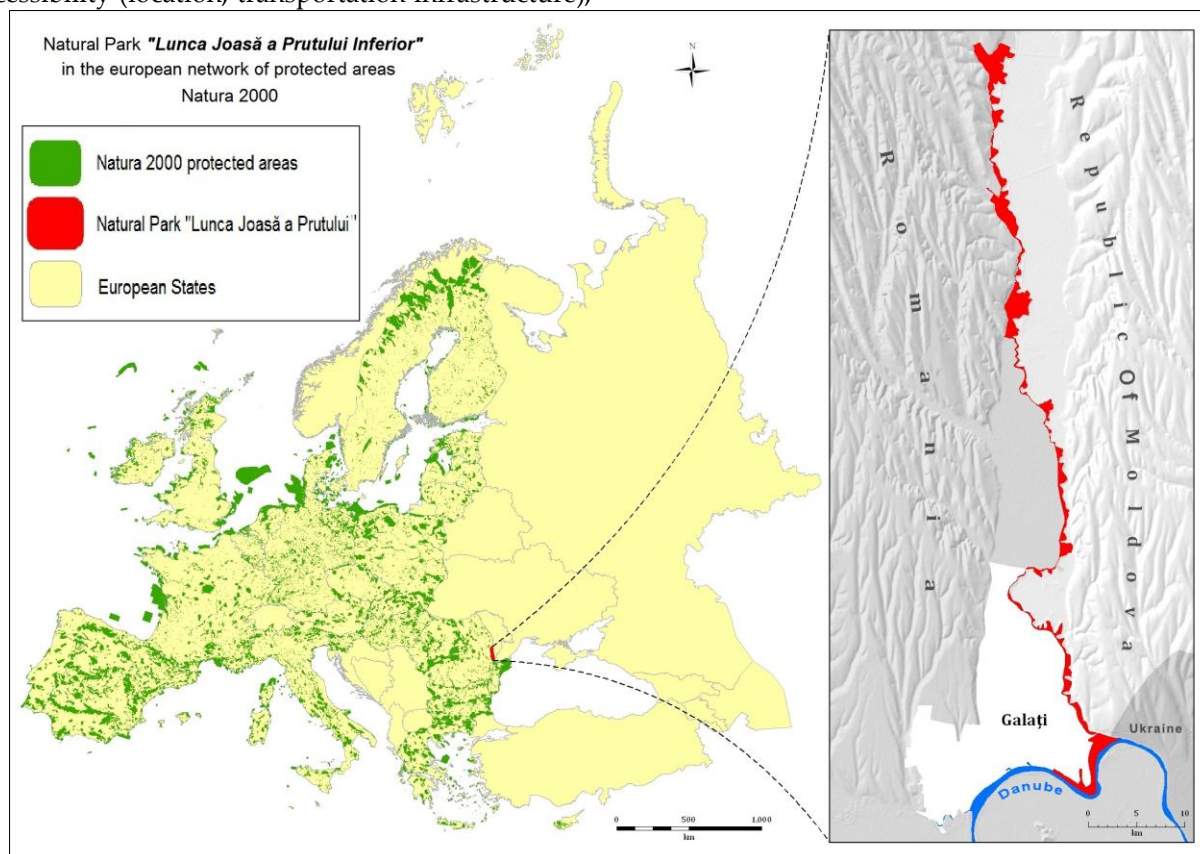


Fig. 2: "The Lower Prut floodplain" Natural Park and Natura 2000 network

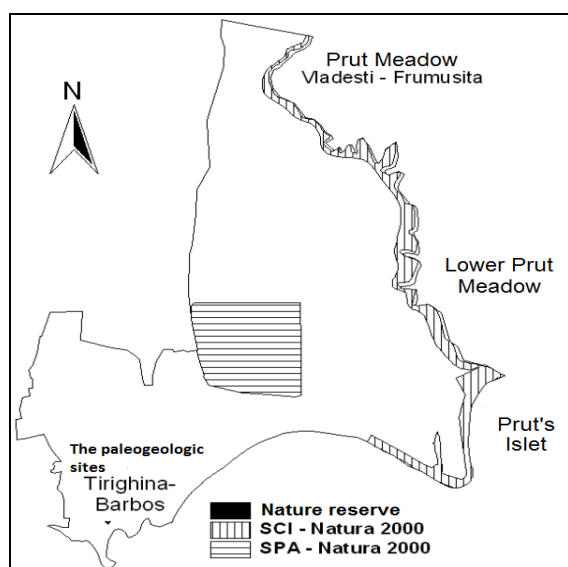


Fig. 3: Types of protected natural areas in Galați Town (source: Petrișor Al., 2009)

Clearer criteria associated with some well-defined features for assessing the value of the tourist sights were first introduced in 2009, then in 2011, by Ielenicz M., who considered the geosites and anthropogenic sites as elements of the tourist potential, which in their turn were classified into sub-types. The topic of this paper centers on the geosites, which have been classified by M. Ielenicz into geological and geographical geosites. In Galați Town, the geological geosites are represented by the paleogeologic sites, like the fossiliferous point at Tighina-Barboși.

Of the geographical geosites, better represented are the coastal sub-type geomorphosites, as is the case of the Danube cliff. The geomorphosite is a type of geosite that differs from the other categories either by topography or by the geomorphological processes that act within it. On Galați territory, the ecosites

include the following areas: “The Lower Prut Floodplain” Natural Park, the “Prut River Island” natural reserve and the protected natural areas of county interest created in 1994. The last ones consist of the Botanical Garden (22.2 ha), the Public Gardens (16 ha), the Railway Park (2.9 ha), the Mihai Eminescu Park (0.8 ha) and the TV Tower Park (6 ha).

The hydrosites are represented in this area by the Brateș Lake and the Mălina and Cătușa fluvial limans. As natural attractions, the lakes have manifold tourist features, which turn them into recreation or resting places. During weekends, people use to come on their banks for fishing, boating, swimming etc.

According to Ielenicz (2011), there must be assigned a value from 0 to 2 to each criterion used for the analysis; all the values are then added together for each type of geosite and finally for the entire geosite. In order to highlight the value of each type of geosite the individual values must be

expressed as percentages of the total value of the geosite. (Ielenicz, Săftoiu, 2011)

Applying the criteria to the most representative geosites of Galați City, we have come out with the conclusion that the Brateș Lake is a hydrosite, the Lower Prut Floodplain is an ecosite, while the Danube cliff is a geomorphosite. Although the Danube cliff is the most accessible and the most important for the citizens, from the touristic point of view it comes after the Brateș Lake and the Lower Prut Floodplain, as the last ones are capable of supporting more activities. And this happens despite the fact that they are lying outside the city and the modern transportation and tourist infrastructure are lacking. The Brateș Lake, which has a particular character in relation with the large areas of the local landscape, has a higher tourist value in comparison with the Lower Prut Floodplain (table 1), although greater attention has been paid to the latter through the Natura 2000 network (fig. 2).

Table 1 The criteria for selecting the valuable tourist sights (according to Ielenicz, 2011)

Feature		Criteria	Score	The Danube cliff geomorphosite	The Brateș Lake hydrosite	The Lower Prut Floodplain Ecosite
Aspect		ordinary	0	2	2	2
		strange	1			
		unusual	2			
Frequency		high in the local environment	0	1	2	1
		unique in the local environment	1			
		unique on large areas	2			
Relationship with other geosites		support	1	1	2	2
		association	2			
Accessibility	Transport infrastructure	lacking	0			
		unmodernized	0.5		0.5	0.5
		modernized	0.5	0.5		
Tourist facilities		lacking	0	1	1	1
		scarce	1			
		good	2			
Types of tourist activities		trekking	0.5	0.5	0.5	0.5
		resting, recreation			0.5	0.5
		education			0.5	0.5
		investigation			0.5	0.5
Importance for the regional development		no importance	0	1	1	1
		weak for the present	0.5			
		significant for the future	1			
Total			10 p	7 p	10.5 p	9.5 p

Factors that hinder the capitalization of the natural tourist potential

The capitalization of the natural potential of Galați Town through specific tourist activities depends to a certain extent by the thermal comfort induced by the weather parameters of the local climate. The climate favorability or restrictivity for tourism and the degree of thermal comfort of the tourists can be assessed based on the bioclimatic indices (Voicu). In order to establish the thermal comfort or discomfort for Galați Town we have used the datasets recorded at the Galați weather station over the period 1990-2010.

The thermal comfort indices most employed for our bioclimatic research take into account the correlation between air temperature, atmospheric humidity and wind speed. One of these indices is the **Missenard index**, computed based on the following formula (Missenard, 1937; Kravczik, 1975; Ciangă N., 1998; Cheval S., 2003; Elena Teodoreanu, 2003, quoted by Voicu M., 2011):

$$T_{ee} = 37 - \frac{37 - t}{0,68 + 0,00014 \cdot f + \frac{1}{1,76 + 1,4v^{0,75}}} - 0,29t(1 - \frac{f}{100})$$

where t = air temperature (°C); f = relative humidity (%); v = wind speed (m/s).

The obtained values suggest a thermal discomfort for most of the year, the equivalent effective temperature being less than 16.8° EET (fig. 4).

Another index taken into account was the **temperature-humidity index (THI)**, which is calculated based on the air temperature and the relative humidity, according to the following formula, which was developed in Romania by the National Institute for Meteorology and Hydrology (I.N.M.H.):

$$THI = (T \cdot 1,8 + 32) - (0,55 - 0,0055 \cdot U) \cdot [(T \cdot 1,8 + 32) - 58],$$

where THI – the temperature-humidity index; T – air temperature; U – the relative humidity of air.

The air is pleasant and the breathing is easy when the index values are less than 75%. Beyond 80%, the people start to feel a discomfort, as the high temperatures and the relative humidity values make the air unbreathable.

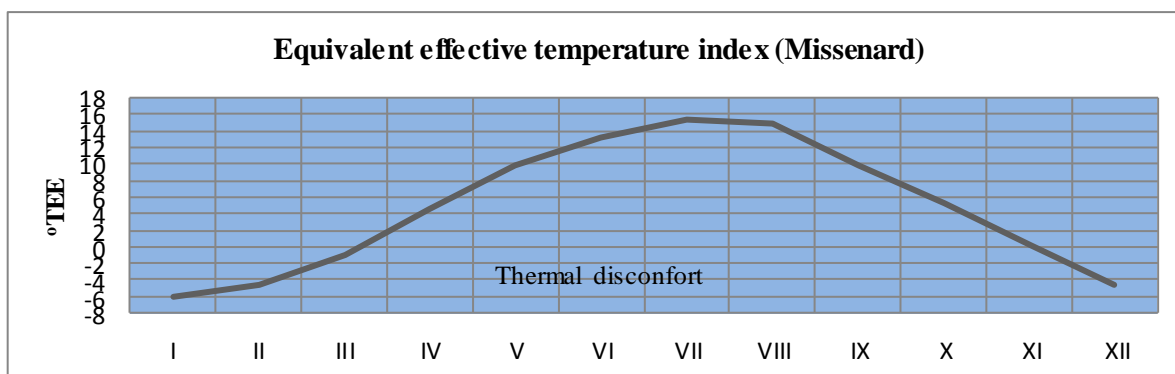


Fig. 4: The Missenard index for Galați Town over the period 1990 – 2010

If the humidity is very high, such situations may occur even at lower temperatures. The drier air, even though is very hot, is better tolerated by the people. When the values of the THI range from 40 to 85, they “mirror the physiological sensations of thermal comfort felt by the human nature” (Sorocovschi, 2008).

Depending on the computed values for the THI, there are several states of comfort: ≤ 65 – comfort state; 66-79 – alert state; ≥ 80 – discomfort state. The values of this index suggest that on the investigated territory the periods when tourist activities can benefit from thermal comfort are spring and autumn. In summertime, and especially in July and August, the human body is on the alert state, as the temperature-humidity index values exceed the threshold of 69 units (fig. 5).

In conclusion, on the whole the climate of Galați Town is less favourable for the tourist activities, as the values of the THI are high during the summer, which induces a risk of thermal discomfort.

Opportunities for a sustainable capitalization of the natural tourist potential

From the sustainable development perspective, the natural tourist potential is a valuable resource; when it is improved and capitalized in the same way as in other countries it may ensure the long-term development of the region to the benefit of the present and future generations (Cocerhan, Năstase, 2011). The sustainable development is a course of action that has been established through European,

national, regional and local policies and strategies (Cocerhan, Fluțăr, Spânu, Matei, 2012), (Mazilu, 2010). The implementation of these strategies will support the sustainable tourism in Galați Town, thus ensuring an optimum capitalization of the resources, which will bring benefits to the host communities (Mazilu, Marinescu, 2008).

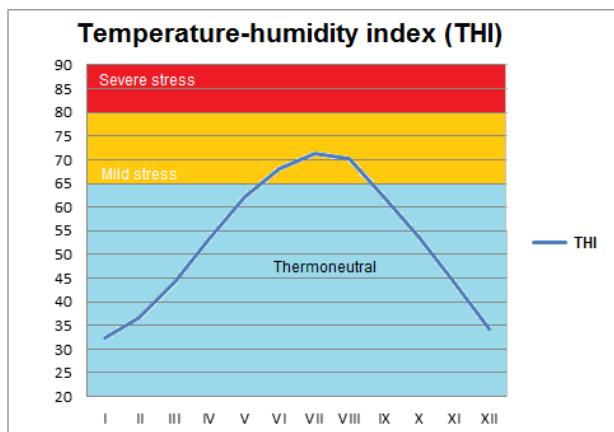


Fig. 5: The thermal-humidity index for Galați Town over the period 1990-2010

The "Lower Prut Floodplain" Natural Park (8.247 ha) was created by the Government Decision (GD) number 2151/2004. But the ecological importance of this area is recognized even at international level. Thus, following the regional study funded by the RAMSAR Bureau and carried out between 1999 and 2001, the Lower Prut area was proposed to be included in the program called the Danube Green Corridor. On 5 June 2000 the agreement on this program was signed by Romania, Bulgaria, Moldavia and Ukraine, countries that emphasized the need and the responsibility of preserving and manage sustainably one of the regions of the world that still has a large biodiversity. The site called "The Lower Prut Floodplain" Natural Park (fig. 2) was classified by the Government Decision (GD) 2151/2004 in the category of national parks, being considered a "Site of Community Importance" (ROSCI0105) and a component of the Natura 2000 European ecological network.

The Natura 2000 European Program targets the preservation, in harmony with the human activities, of the natural ecosystems by the following measures: the restoration of biotopes, the reintroduction of native species and the development of research and education activities. Declaring a region a Natura 2000 site does not mean to condemn it to isolation. On the contrary, such an approach takes into account the economic, cultural and social interests of the people in the area by

allowing them to carry out those types of economic activities that do not harm the respective site.

Conclusions

In order to ensure the sustainable capitalization of the natural potential of Galați Town, it is necessary not only to preserve a diverse and balanced structure of the natural capital but also to use its resources and the services it produces within the endurance capacity of its components. The natural parks are a viable solution for the local decision makers with regard to their promotion and development in accordance with the principles of preserving and protecting the environment. "The Lower Prut Floodplain" Natural Park is a geographical space with a significant tourist potential, given by the existence of a number of natural attractions. However, the distance from the residential area, the present border regulations and the poor transport infrastructure are responsible for the slow development of tourism.

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