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Cultural indicators of sustainable regional development (the case of Serbian national park)

Dobrila Lukić^a, Marko D. Petrović^b, Stefan Denda^b^a Alfa BK University, Belgrade, Serbia; e-mail: dobriladjerdap@gmail.com ✉^b Geographical Institute Jovan Cvijić SASA, Belgrade, Serbia; e-mail: m.petrovic@gi.sanu.ac.rs; e-mail: s.denda@gi.sanu.ac.rs**ABSTRACT**

This study discusses tourism as a means of regional development by focusing on specific cultural indicators. In this paper, we are dealing with the case of the Djerdap National Park – the largest national park in Serbia and one of the most popular of the country's destinations. This area has an extraordinary diversity of geomorphological forms, it is rich in cultural and historical monuments. At the same time this area is sparsely populated and is demonstrating an insufficient economic growth. For our analysis, we apply comparative indicators to measure sustainable regional tourism development that were proposed by the European Union's experts. This set of indicators consists of five groups and includes the ratio of accommodation capacities to the number of local inhabitants and the intensity of tourism. Our calculations are based on the statistical data on accommodation capacities and the tourist traffic provided in several municipalities. These data are provided by the Statistical Office of Serbia (2015). We also use the 2011 census data on the number of local inhabitants. We have found that the ratio of accommodation capacities to the number of local inhabitants in Djerdap is in the so-called *green* zone, which shows the sustainability of tourism in this region and an insignificant impact that tourism has on the cultural identity of the local community. The intensity of tourism in Djerdap is in the *red* zone, however, which demonstrates an alarming trend and requires further analysis, especially regarding the carrying capacity of the area. Thus, the conclusion is made that the development of tourism in Djerdap should be balanced with the protection of natural resources.

KEYWORDS

cultural indicators, criteria of the European Union, sustainable regional development, tourism, Djerdap National Park

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Культурные индикаторы устойчивого регионального развития

Д. Лукич^а, М. Петровић^б, С. Денда^б^а Алфа БК Универзитет, Белград, Србија; e-mail: dobriladjerdap@gmail.com ✉^б Географички институт «Јован Цвијич» Српској академији наука, Белград, Србија; e-mail: m.petrovic@gi.sanu.ac.rs; e-mail: s.denda@gi.sanu.ac.rs**РЕЗЮМЕ**

В истраживању разматра се туризам као средство регионалног развоја с упором на одређене културне показатеље. Ауторима разматран случај Националног парка Дјердап – највећег националног парка у Србији и једног од најпопуларнијих туристичких прављења државе. Ова област има необичајно разнообразне геоморфолошке облике, она је богата културним и историјским споменицима. У исто време овај регион је малонасељен и демонстрира недовољан економски раст. За нашу анализу ми примењујемо упоређивајуће показатеље устойчивог развоја регионалног туризма, које су предложени експертима Европског савеза. Овај скуп показатеља састоји се од пет група; он укључује однос броја туристичких места к броју становника и интензивности туризма. Наши прорачуни засновани су на статистичким подацима, достављеним Статистичким управљем Србије, о туристичким местима и туристичком саобраћају у неколико општина. Такође се користе подаци пописа из 2011. године о броју становника. Ауторима је откривено да однос туристичких места к броју становника у Дјердапу налази се у такозваној «зеленој» зони, што сведочи о одрживости туризма у овом региону и о незначителном утицају туризма на културну самобитност локалног друштва. Интензивност туризма у Дјердапу налази се у «црвеној» зони, што демонстрира забринујућу тенденцију и захтева даље истраживање, посебно у односу на пропусну способност региона. На тај начин, изводи се закључак да развој туризма у Дјердапу мора бити сбалансирани са очувањем природних ресурса.

КЛЮЧЕВЕ СЛОВА

културни показатељи, критерији Европског савеза, одрживо регионално развојење, туризам, Национални парк Дјердап

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Introduction

Sustainable tourism development requires careful planning and management, which would ensure that tourism contributes to improving the quality of life of the local population and that its negative effects on the local cultural and natural environment should be reduced or mitigated. The concept of sustainable development was defined in 1987 by the World Commission on Environment and Development in the Brundtland Report, also known as *Our Common Future*. Sustainable development is understood as “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”. Sustainable development requires us to set certain boundaries, which are not absolute but are defined by the current state of technology and social organization in relation to the environment as well as the ability of the biosphere to absorb the effects of human activities. According to the Brundtland Commission, sustainable development does not mean a fixed state of harmony, but a process in which a harmony of exploitation of resources, direction of investments, directions of technological development and institutional changes with present and future needs are created. The application of the concept of sustainable regional tourism development thus implies minimizing negative and maximizing the positive impacts of tourism on the environment and the available resources. For this reason, it is necessary to identify, monitor, assess and manage the economic, socio-cultural and environmental effects of tourism. At the core of sustainability lies the balance between the development of tourism and tourism areas, on the one hand, and protection and preservation of the environment, resources and the value of the local community, on the other [1].

Theoretical framework

By analyzing and processing statistical data, many international, national and local institutions have tried to develop a set of indicators of sustainable regional tourism development. The World Tourism Organization has published guidelines on sustainable regional tourism development, which included two sets of indicators: basic indicators and indicators for each type of tourist value [2–4]. Indicators of sustainable regional tourism development were also set by the European Environment Agency (EEA). Recently, a growing number of studies have been focusing

on socio-cultural influence of tourism in such areas as Spain, Great Britain, Bali, Florida, and Norway. This research primarily refers to the methodology of estimating the ratio of inhabitants in these areas to the number of tourists, the negative impact of tourism on local communities, and the development of tourism as a whole. G. Miller discusses the indicators of sustainable regional tourism development related to environmental protection, employment, finances and visitor aspects [5]. T. G. Ko describes several quantitative and qualitative indicators in relation to eight different dimensions such as political, economic, socio-cultural, and industrial [6].

Different studies have dealt with indicators of sustainable regional tourism development in Serbia by comparing them with those of tourist destinations in other countries. According to B. Stojanović, indicators of sustainable tourism provide the most modern method of measuring the effects of tourism development and usually reflect all the principles of sustainable development [7, p. 264]. M. Maksin et al. define these indicators as measurements of the state of the given environment and process in a certain area and in a certain period. Thus, the indicators enable researchers not only to determine the current state but also to monitor any changes, primarily in terms of goal achievement [8, p. 284]. D. Jovičić, T. Ilić maintains that, according to the World Tourism Organization, since 1996, “indicators measure or evaluate certain information, which helps decision-makers (administrative bodies) minimize the possibility of bad business decisions” [9, p. 277].

The case of the Djerdap National Park

The Djerdap gorge is located in the northeastern part of Serbia, on the border with Romania, in the center of the northern part of the Balkan Peninsula. It stretches in the west-eastern direction. According to D. Dukić, the Djerdap gorge begins with the underwater rock Germania, which is located on the 1,039.5th kilometer of the Danube. At that point, the riverbank narrows from 2,000 m wide to 350 m. Dukić believes that the Romanian village of Guravoj on the 941th kilometer marks the end of the gorge. Here the river bed becomes wider again, the fall rapidly decreases and the deposit accumulation begins. In this settlement, the islands of the Danube deposits were formed: Serbian Guravoj, Banacansko, Karatas and Dudas. In this part, Djerdap is 98.5 km long [10]. The largest

part of the Djerdap gorge has a typical V-shaped valley, with steep, even vertical sides, which are rising on average 260–300 m and sometimes over 500 m above the river bed. However, Djerdap is a compound river valley comprising four gorges separated by basins: Golubac gorge, Ljupkovska basin, gorge Gospodjin Vir, Donjomilanovačka basin, gorges Great and Small Kazan, Oršavska basin and Sipska gorge.

The Djerdap gorge is an essential part of the National Park Djerdap. This area, which covers about 65,000 ha, was given the status of a national park in 1974. It is located on the territory of municipalities Golubac, Kladovo and Majdanpek; it extends about 100 km along the right bank of the Danube, from Golubac to Karataš; and it is 2 to 8 km wide. The National Park Djerdap is rich in geomorphological forms, cultural and historical monuments, fauna and flora, especially beech and oakwoods (over 64% of the territory). The factors contributing to the preservation of the natural environment of the Djerdap National Park are the low population density, absence of large industrial plants and a fairly sparse transport infrastructure [11].

Methodology

Experts of the European Commission have designed a set of core indicators in order to evaluate and determine the degree of sustainability of tourism development in a certain area. These indicators provide a starting point for policy-making in this sphere depending on how they assess the condition of tourism: as critical, tolerable or sustainable. Therefore, the three zones are identified: *red* (critical condition; urgent measures are required); *yellow* (tolerable; preventive measures are recommended); and the *green zone* (sustainable). The factors that help us evaluate the current state of development of tourism are divided into five groups:

- *the economic indicators* show the economic effects of tourism on the local area;
- *the satisfaction of tourists* is expressed through their opinion on the attractiveness of the area, the socio-cultural characteristics of the environment as well as on the quality of tourist capacities and services provided;
- *social indicators* reflect the social integrity of the local community in terms of local inhabitants' subjective well-being;
- *cultural indicators* correspond to the degree of preservation of the cultural identity of the local

community under the influence of tourists of different cultural backgrounds;

- *environmental indicators* should reflect the state of the environment and the impacts of tourism on water resources, air, biodiversity, and land [7; 12].

In this paper, the cultural indicators of sustainable regional tourism development in Djerdap are analyzed. They show us the effect of tourism on the local cultural identity.

Table 1

Cultural indicators of sustainable regional tourism development

Cultural indicators	Ratio of accommodation capacities to the number of local inhabitants	< 1.1:1 <i>green zone</i> 1.1–0.5: 1 <i>yellow zone</i> > 1.6:1 <i>red zone</i>
	Intensity of tourism	< 1.1:1 <i>green zone</i> 1.1–1.5: 1 <i>yellow zone</i> > 1.6:1 <i>red zone</i>

Source: [7].

Cultural indicators of sustainable regional tourism development include the following:

1. *The ratio of accommodation capacities to the number of local inhabitants.* This indicator reveals an alarming trend if the number of beds exceeds the number of inhabitants over 1.6 times, because the local community is affected by the intensive construction of tourist accommodation. If this ratio is less than 1.5, then the situation is more favorable for the local community. Natural characteristics of space, the type of accommodation, intensity and type of tourist traffic also influence the above-described mentioned correlations.

2. *Intensity of tourism.* This indicator is the ratio of the number of overnight stays during the year expressed in thousands to the number of local inhabitants expressed in hundreds. This indicator shows the degree of cultural saturation in the area: if it exceeds 1.6, it is characterized as unfavorable for the sustainability of tourism [7].

Results and Discussion

In our analysis of cultural indicators of sustainable regional tourism development in Djerdap, we used the data on the accommodation capacities and tourist traffic in Golubac, Majdanpek and Kladovo provided by the Statistical Office of the Republic of Serbia for 2015. The data on the number of inhabitants in the municipalities of Djerdap were also obtained from

the Statistical Office of the Republic of Serbia and are based on the results of the latest 2011 census.

In the municipality of Golubac in 2015, there were recorded one two-star hotel and one overnight stay in the category of basic accommodation capacities. The total number of available rooms was 59 with 172 beds in them. In the category of complementary accommodation capacities, in 2015, there were 21 one-star private rooms with 51 beds. Thus, the total number of available rooms in Golubac in 2015 was 80, with 223 beds.

In Majdanpek, there were two three-star hotels in the category of basic accommodation capacities with the total number of 300 rooms with 580 beds. In the category of complementary accommodation capacities in the municipality of Majdanpek in 2015 there were 70 two-star private rooms with 182 beds. This means that the total number of available rooms was 370 with the total of 762 beds.

In Kladovo, there were two hotels (one four-star and one two-star) and one youth hostel registered in the category of basic accommodation capacities. The complementary accommodation capacities included 25 three-star private homes and apartments and 77 private rooms. The total number of available rooms was 561, with 1160 beds.

Table 2
Ratio of accommodation capacities to the number of local inhabitants in Djerdap

Municipality	Population (2011 census)	Number of beds in 2015	Ratio of accommodation capacities to the number of local inhabitants
Golubac	8,654	223	0.02:1 <i>green zone</i>
Majdanpek	19,854	762	0.04:1 <i>green zone</i>
Kladovo	21,142	1,160	0.05:1 <i>green zone</i>
Djerdap (Total)	49,650	2,145	0.04:1 <i>green zone</i>

Source: [13; 14].

Djerdap has seven business units in the category of basic accommodation capacities. The total number of rooms in 2015 was 1,011, with 2,145 beds. The same year in Djerdap, a total of 46,773 tourists were recorded: 37,620 domestic and 9,153 foreign tourists. Overall, they spent in Djerdap 94,934 nights.

The ratio of accommodation capacities to the number of local inhabitants demonstrates that tourism in Djerdap is in the *green zone*, given that this ratio for Djerdap is 0.04, according

to the data of 2015. Therefore, we can conclude that this indicator demonstrates the sustainability of tourism and an insignificant influence that it has on the local culture. However, if we consider the data from other sources, they are likely to show that the cultural influence is more pronounced.

Table 3

Intensity of tourism in Djerdap

Municipality	Population (2011 census)	Number of nights in 2015	Intensity of tourism
Golubac	8,654	3,857	0.45:1 <i>green zone</i>
Majdanpek	19,854	41,751	2.10:1 <i>red zone</i>
Kladovo	21,142	49,326	2.33:1 <i>red zone</i>
Djerdap	49,650	94,934	1.91:1 <i>red zone</i>

Source: [13; 14].

The intensity of tourism in Djerdap is 1.91 (*red zone*), which means that tourism development is not sustainable and that the identity of the local community is under the increasing pressure on the part of tourists coming from places with different cultural characteristics. The reason for this is the decreasing number of local population in Djerdap municipalities. However, in the municipalities of Djerdap, the level of the cultural saturation of the area is not too high, because the newly built facilities for tourism do not significantly affect the local community. In the analysis of the future development of tourism in Djerdap, the carrying capacity of the space should be determined: "Carrying capacity is the number of users that a certain space can take within a certain period of time, without irreversible biological and physical degradation, the ability of space to satisfy recreational needs and without significant endangerment of the quality of the recreational experience" [15].

Conclusion

Our analysis of cultural indicators of sustainable regional development in Djerdap has shown that the criteria put forward by the EU experts are mostly met, especially when it comes to the ratio of accommodation capacities to the number of local inhabitants. As for the intensity of tourism, the situation is alarming, since only in Golubac municipality this indicator is in the *green zone*. In Majdanpek and Kladovo, however, the number of tourist overnight stays throughout the year is more than two times higher than the number of inhabitants. In order to harmo-

nize the development of tourism in Djerdap with the area's capacity and capabilities, it is necessary to ensure that all tourists and other stakeholders of tourism development should preserve the natural environment and culture of this destination, abide by the standards of ethical behaviour and be aware of the needs of future generations.

Therefore, there should be a balance between tourism development in Djerdap and the protection of its natural environment. This can be achieved through careful resource analysis, co-ordination of environmental protection and tourist activities to prevent any negative impact of tourism on the environment.

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Information about the authors

Dobrića Lukić – Ph.D. in Geography, Assistant Professor, Alfa BK University (Palmira Toljatija 3, 11000 Belgrade, Serbia); email: dobriladjerdap@gmail.com.

Marko D. Petrović – Ph.D. in Geography, Research Associate, Geographical Institute *Jovan Cvijić* of the Serbian Academy of Sciences and Arts (SASA) (Djure Jakšića 9, 11000 Belgrade, Serbia); email: m.petrovic@gi.sanu.ac.rs.

Stefan Denda – M.Sc. in Tourism, Research Assistant, Geographical Institute *Jovan Cvijić* of the Serbian Academy of Sciences and Arts (SASA) (Djure Jakšića 9, 11000 Belgrade, Serbia); email: s.denda@gi.sanu.ac.rs.