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THE IMPORTANCE OF NATURE-BASED TOURISM FOR SUSTAINABLE DEVELOPMENT—A REPORT FROM THE SELECTED BIOSPHERE RESERVE

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Abstract: Special Nature Reserve (SNR) Gornje Podunavlje is located in the northwestern part of Serbia, on the left bank of the Danube, along the border of Croatia and Serbia. This area is a significant spatial unit for the development of nature-based tourism and ecotourism. It is part of Bačko Podunavlje Biosphere Reserve, protected by UNESCO, and a wider area of Transboundary Biosphere Reserve Mura–Drava–Danube, which includes 10 protected natural areas in five countries. The research aims to examine the attitudes of the local population about the state of sustainable tourism development in the SNR Gornje Podunavlje using a questionnaire. A total of 205 respondents expressed their satisfaction with the environmental, economic, and socio-cultural aspects of sustainability. After quantitative analysis, the results of the research can provide nature conservation guidelines and specify the role of protected natural areas in sustainable tourism development. As the most important dimensions of sustainability, the residents highlighted the Socio-cultural and Institutional dimensions of sustainable tourism development. Slightly lower values, according to the attitudes of residents, were given to Environmental and Economic sustainability. The results of the research indicate that this destination can be important for the development of sustainable tourism. By adopting the planned management measures, this protected natural area can be a significant destination for ecotourism and other forms of nature-based tourism.

Keywords: Special Nature Reserve Gornje Podunavlje; nature-based tourism; Biosphere Reserve; sustainable tourism development

Introduction

Special Nature Reserve (SNR) Gornje Podunavlje represents an area within Bačko Podunavlje Biosphere Reserve, protected by UNESCO (with a total surface area of 176,635 ha), and it is part of Transboundary Biosphere Reserve Mura–Drava–Danube, so-called "Europe's Amazon". It includes 10 protected areas in the following five countries: Austria, Slovenia, Croatia, Hungary, and Serbia. Therefore, this nature reserve can be an important destination for international tourism. SNR Gornje Podunavlje is a unique mosaic of aquatic, wetland, and terrestrial ecosystems (Stojanović & Savić, 2013). It is a significant center of ecosystem, species, and genetic diversity. Within the reserve, a large number of rare and endangered plant species that are of national and international

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importance have been preserved. This area represents a significant habitat for plant species such as winter aconite (*Eranthis hyemalis*), water violet bareroot (*Hottonia palustris*), and mare's tail (*Hippuris vulgaris*). Also, this habitat is a migratory fish trail, a nesting place for white-tailed eagles (*Haliaeetus albicilla*), black stork (*Ciconia nigra*), and is the habitat of the largest deer (*Cervus elaphus*) populations in Serbia. Part of this wealth is reflected in the presence of 55 species of fish, 11 species of amphibians, nine species of reptiles, 230 species of birds, and 51 species of mammals, as well as a huge number of invertebrates, with over 60 species of butterflies (Pokrajinski zavod za zaštitu prirode, 2020).

The social and cultural life of the local community in the settlements around the reserve is in conjunction with the ecological features of this protected natural area (Stojanović, Đorđević, Lazić, Stamenković, & Dragićević, 2014; Štetić, Trišić, & Nedelcu, 2019). The dug canals are used for irrigation, but they have found their function both as habitats for plants and animals and as places suitable for the development of nature-based tourism (Trišić, 2020). Hunting, sports, and fishing tourism are developing in the area of the reserve, while in recent years ecological, scientific, and rural forms of tourism have taken precedence (Pokrajinski zavod za zaštitu prirode, 2020). These factors of tourism development can be important in defining the function of this special nature reserve in sustainable tourism development.

Sustainable tourism is a form of tourism that, through its implementation, contributes to the environmental, economic, and socio-cultural benefits for residents, tourists, tourist destination managers, and the state (Stojanović et al., 2014). The dimensions of sustainability can be examined by measuring the satisfaction of residents with the state of sustainability in a tourist destination (Newsome, Moore, & Dowling, 2013). This is important for determining the state of sustainability of a tourist destination and planning the development of tourism (Trišić et al., 2021). This research is based on the fact that proper sustainable tourism development implies ecological, economic, socio-cultural, and institutional sustainability (Chin, Moore, Wallington, & Dowling, 2000; Choi & Sirakaya, 2006; Cottrell, Vaske, & Roemer, 2013; Huayhuaca, Cottrell, Cottrell, & Gradl, 2010; Mearns, 2011; Puhakka & Siikamäki, 2012; Schianetz & Kavanagh, 2008; Twining-Ward & Butler, 2002). In addition to the tourist satisfaction with service and facilities, it is important to examine the residents' satisfaction with sustainable tourism development. The role of residents in sustainable development is extremely important (Agyeiwaah, McKercher, & Suntikul, 2017; Lee & Hsieh, 2016; López Sánchez, Cabrera, & Gómez del Pulgar, 2020; Oleśniewicz, Pytel, Markiewicz-Patkowska, Szromek, & Jandová, 2020; Rio & Nunes, 2012; Scholtz, Kruger, & Saayman, 2015; Sowinska-Świerkosz & Chmielewski, 2014; Tanguay, Rajaonson, & Therrien, 2013; Torres-Delgadoa & Saarinen, 2014; Vučetić, 2018).

This paper aims to achieve significant results regarding the role of SNR Gornje Podunavlje for sustainable tourism development by applying quantitative methodology and descriptive statistics. The attitudes of the respondents collected by this method may indicate to significant phenomena in the environment (Grmuša, Šušnjar, & Lukić Tanović, 2020; Jojić Glavonjić, Todorić, Doljak, & Golubović, 2017). The results of the research can contribute to future research on the role of protected natural areas for sustainable tourism development. Sustainable tourism development of a tourism destination is an important goal of tourism planning (Cottrell et al., 2013).

Methods

For this research, a total of 205 respondents were surveyed. The respondents were the representatives of the residents of Sombor (n = 74), Apatin (n = 32), Odžaci (n = 29), and Bačka

Palanka (*n* = 70). These towns form a significant contractive tourism zone of SNR Gornje Podunavlje. The survey was conducted from June 2020 to March 2021. Questionnaires were distributed through social networks, by email, or through in-person interviews of the respondents. The authors used different survey methods to obtain as significant a sample as possible and to approach respondents of different ages. Respondents were asked 17 questions as part of a written questionnaire. The issues were divided into four groups (dimensions of sustainability): institutional, environmental, economic, and socio-cultural sustainability (Cottrell et al., 2013; Cottrell, Vaske, & Shen, 2007). Respondents expressed their satisfaction with sustainable tourism development on a 5-point Likert agreement scale (*strongly disagree* to *strongly agree*, with a 3-point item as a *neutral point*), which was used to measure each dimension of sustainable tourism (Dolnicar & Grün, 2013; Kruger, Viljoen, & Saayman, 2013). The content of the questionnaire and variables (sustainable dimensions) adapted to the research of sustainable tourism development of the SNR Gornje Podunavlje is shown in Table 1.

Table 1
Sustainable Tourism Dimensions

	Ecological Dimension
E_1	I am satisfied with the joint role of tourists and locals in protecting the area
E_2	I am satisfied with the facilities, services, and activities available to tourists and the residents in the protected area
E_3	I am satisfied with the existence of tourist facilities without impacts on the environment
	Economic Dimension
Ec_1	I am satisfied because the tourism of the protected area benefits the residents
Ec_2	I am satisfied because the tourism of the protected area supports the local economy
Ec_3	Tourism in the protected area contributes to the employment of the local population
Ec_4	Local products are available to tourists
Ec_5	Tourists support the payment of tickets to the protected area
	Socio-cultural Dimension
S_1	Tourists are interested in home products and crafts
S_2	Tourists are in contact with the local community
S_3	Tourists are interested in local traditions and customs
S_4	Tourists visit local cultural facilities and events
S_5	Tourists are interested in historical sites
	Institutional Dimension
I_1	Tourists are guided through the protected area by trained guides and representatives of the local community
I_2	Tourists in the protected area can see the local brands (wineries, ethno houses, handicrafts, local enterprises, etc.)
I_3	In the protected area, the manager's instructions on nature protection and tourist activities are followed
I_4	Tourists are provided with information that reflects the history of the reserve, population, and settlements

The analysis method (*t*-test) was used to examine the differences in the results of the sustainability dimensions. The method was used to examine the contribution of each dimension to the satisfaction of the residents with the development of tourism.

Results

By analyzing the obtained results, the values of the four dimensions of sustainability can be defined. All the respondents are over 18 years old. Of the total number of respondents, 52% are women. An overview of the statistically analyzed responses of the respondents (*t*-test) can be seen in Table 2.

Table 2
One-Sample Test

	Test Value = 0					
	t	*df*	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
E_1	46.286	204	.000	3.839	3.68	4.00
E_2	41.130	204	.000	3.663	3.49	3.84
E_3	43.329	204	.000	3.502	3.34	3.66
Ec_1	40.744	204	.000	3.220	3.06	3.38
Ec_2	36.535	204	.000	2.937	2.78	3.10
Ec_3	41.686	204	.000	3.312	3.16	3.47
Ec_4	57.629	204	.000	4.122	3.98	4.26
Ec_5	42.929	204	.000	3.532	3.37	3.69
S_1	55.041	204	.000	3.951	3.81	4.09
S_2	53.154	204	.000	3.898	3.75	4.04
S_3	60.347	204	.000	3.795	3.67	3.92
S_4	54.755	204	.000	3.732	3.60	3.87
S_5	47.799	204	.000	3.337	3.20	3.47
I_1	56.971	204	.000	3.776	3.64	3.91
I_2	57.364	204	.000	3.717	3.59	3.84
I_3	57.123	204	.000	3.771	3.64	3.90
I_4	56.866	204	.000	3.722	3.59	3.85

In Table 2, One-Sample Test Method was used to examine the potential differences in the residents' responses, or in order to test the validity of the responses for analysis. The results indicate that all the answers are valid and that there are no statistically significant differences in residents' responses to all the claims made. The values obtained after measuring environmental sustainability using 17 questions are shown in Table 3.

Table 3
Sustainable Tourism Development

Sustainable Dimensions	*α*	*M*	*SD*
Ecological Dimension	.946	3.66	1.206
E_1		3.84	1.188
E_2		3.66	1.275
E_3		3.50	1.157
Economic Dimension	.848	3.42	1.124
Ec_1		3.22	1.131
Ec_2		2.94	1.151
Ec_3		3.31	1.138
Ec_4		4.12	1.024
Ec_5		3.53	1.178
Socio-cultural Dimension	.850	3.74	.990
S_1		3.95	1.028
S_2		3.90	1.050
S_3		3.80	.900
S_4		3.73	.976
S_5		3.34	.999

Table 3
Continued

Sustainable Dimensions	*α*	*M*	*SD*
Institutional Dimension	.981	3.74	.939
I_1		3.78	.949
I_2		3.72	.928
I_3		3.77	.945
I_4		3.72	.937

Note. In answering, the Likert Scale was used 1 = I *completely disagree*; 2 = I *partially disagree*; 3 = *neutral point of view*; 4 = *I partially agree*; 5 = I *completely agree; α* = Cronbach's Alpha; *M* = Mean; *SD* = Standard Deviation.

By analyzing the obtained results (Table 3), it can be concluded that in the SNR Gornje Podunavlje the highest-rated dimensions of sustainability are Socio-cultural (3.74) and Institutional dimensions (3.74). The variables that have the highest values are S_1, S_2, and S_3, from the group Socio-cultural dimension of sustainability, and I_1 and I_3, from the group Institutional dimensions. Respondents rated the issues related to the Economic dimension the least (3.42). The answers indicate that tourism has a smaller impact on the local economy and provides income to the residents. The exception is the availability of local products to tourists, which the respondents assessed to be true to a significant extent (4.12). The Ecological dimension was rated by the respondents with an average score of 3.66. The variable Joint role of tourists and locals in protecting the area was rated as the most significant (3.84).

If we compare the obtained results, it can be concluded that in SNR Gornje Podunavlje the level of sustainable tourism development is positive in all the four dimensions of sustainability. This means that the obtained values are above the average on the scale ($M > 3$).

Conclusion

Sustainable tourism development can be research through four pillars of sustainability: Ecological, Economic, Socio-cultural, and Institutional dimensions. When the development of tourism of sensitive destinations contributes to the benefits for nature, locals, tourists, and institutions, the conditions for sustainable tourism development are met. The Socio-cultural and Institutional dimensions of sustainability are the dimensions which the residents rated the highest. The joint role of tourists and residents in tourism activities, availability of local products to tourists, tourists' interest in contacts with the locals and in the local culture and cultural facilities, the willingness of tourists to pay a ticket, and other highly rated values, represent a significant potential for sustainable tourism development. By analyzing the obtained results, it can be concluded that tourists are interested in the development of nature-based tourism. Tourists want to combine the activities in nature with various facilities and other special forms of tourism. Among the most important tourist potentials of SNR Gornje Podunavlje are: a unique nature, various plant and animal species, events, wineries, cultural institutions, meeting the locals, and other values.

By analyzing the obtained results, it can be concluded that it is necessary to improve all the four dimensions of sustainability in SNR Gornje Podunavlje. Protection of nature, flora, and fauna must be the main activity of tourism development in this destination. Natural factors of SNR Gornje Podunavlje are important factors of sustainable tourism development. Also, resident's satisfaction with sustainable tourism development can be a significant basis for tourism planning. One of the results are the incomes that the local communities and managers can achieve from tourism. Most of these revenues can be refinanced for nature protection. Nature protection and the environmental

aspect of sustainability are also important pillars of sustainable tourism development. The obtained results emphasize that the importance of protected natural areas for tourism planning and development is important. Respondents stated that their role in tourism development is very important. Also, the answers of the residents indicate that their satisfaction with the development of tourism has a positive effect on sustainable tourism development with the tourists' satisfaction with the services within the protected natural area.

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