

## ENVIRONMENTAL QUALITY AS A DETERMINANT OF THE COMPETITIVENESS AND THE DEVELOPMENT OF ECOTOURISM IN THE REPUBLIC OF SERBIA

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### Abstract

Tourism is more dependent on the environment than any other economic activity. Modern tourism requires the use of vast areas of the environment, untouched or well-protected, because only in such areas can it hope to develop so as to be of economic and social benefit. Having in mind the great impact of tourism on the environment, its development needs to harmonise with the concept of sustainability. Ecotourism is one of the selective forms of tourism based on natural resources and their use over time, and it is characterised by tourist offers with unique values. Accordingly, the research subject of this paper is ecotourism, which aims to enable the tourism industry to operate while preserving the environment. The aim of this paper is to analyse the achieved level of environmental quality as the basis for the development of ecotourism, and as a component of the competitiveness of the Republic of Serbia's tourism.

**Key words:** ecotourism, environment, quality, Travel and Tourism Competitiveness Index, Republic of Serbia

## КВАЛИТЕТ ЖИВОТНЕ СРЕДИНЕ КАО ДЕТЕРМИНАНТА КОНКУРЕНТНОСТИ И РАЗВОЈА ЕКОТУРИЗМА РЕПУБЛИКЕ СРБИЈЕ

### Апстракт

Туризам, више него било која друга привредна делатност, зависи од животне средине. Савремени туризам захтева значајна пространства нетакнуте или добро заштићене животне средине, јер се само на таквим просторима може плански развијати и доприносити економији и друштву. Имајући у виду колико значајно туризам утиче на животну средину, неопходно је ускладити његов развој са концептом одрживости. Један од селективних облика туризма који се базира на

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природним ресурсима и њиховом искоришћавању током времена је екотуризам, који се одликује туристичким понудама јединствених вредности. Сходно овоме, предмет истраживања овог рада је екотуризам, који тежи очувању животне средине при обављању туристичке делатности. Циљ рада је анализа достигнутог нивоа квалитета животне средине као суштинске основе за развој екотуризма, и као компоненте конкурентности туризма Републике Србије.

**Кључне речи:** екотуризам, животна средина, квалитет, Индекс конкурентности путовања и туризма, Република Србија

### *INTRODUCTION*

Tourism is one of the world's fastest growing industries, as well as a major source of income for many countries. Other than having the ability to rapidly generate income, tourism also opens up numerous business opportunities that help create new jobs. However, just like other forms of development, tourism can also cause problems, such as social dislocation, loss of cultural heritage, economic dependence on a single industry, and environmental pollution. These facts are sufficient to understand the necessity for 'responsible' tourism (Vu, 2015, p. 2). This sustainable type of tourism, which has a smaller impact on the environment, is called ecotourism.

As a sustainable form of tourism, ecotourism emphasises the equal benefits of tourism development for all the participants in the tourism value chain. Ecotourism is a form of tourism characterised by tourist traffic in protected natural assets, or in areas with preserved natural features and a rich biodiversity, with an extremely low level of construction sites and urbanised areas. In this manner, tourism does not harm the original natural features (Sunlu, 2003, p. 266).

In 1990, The International Ecotourism Society (TIES) perceived ecotourism as a form of tourism involving responsible travel to natural areas, which preserves the environment and reflects the well-being of the local population (TIES, 1990). In line with that, in 1996, the International Union for Conservation of Nature (IUCN) established that ecotourism enables environmentally responsible travel and visits to relatively untouched areas of nature, and promotes ecological conservation with a low visitor impact. Thus, ecotourism facilitates the enjoyment of and respect for nature (and all accompanying cultural facilities, from the past and the present alike), as well as the useful and active socio-economic engagement of the local population (IUCN, 1996).

Ecotourism is a blend of interests emerging from ecological, economic and social issues. It involves a strong commitment to nature and a sense of social responsibility. More precisely, it is about creating and satisfying an individual's need for nature, and about exploiting the potential of tourism for the conservation of nature, development, and the preven-

tion of tourism's negative impact on the environment and cultural heritage (Western, 1993, p.8). Ecotourism is a low-impact natural type of tourism that contributes to maintaining species and habitats, either directly through the contribution to conservation or indirectly by providing income to the local community (Fennell, 2014, p. 45). According to Laskuran, ecotourism implies visiting relatively untouched and unpolluted natural areas in order to admire and enjoy natural landscapes, wild plants and all the accompanying cultural features, from the past and the present, in a certain area (Redžić, 2017, p.106).

The importance of the development of ecotourism can be understood if we bear in mind the main goals it strives for and the contribution it makes by fulfilling them. Therefore, the main goals of ecotourism should be: 1) to attract tourists to natural environments that are unique, but also accessible; 2) to be organised, with the aim of preserving nature through education; 3) to lead to a change in the attitudes of the local population and administration; and 4) to provide employment and business opportunities to the local population (Svržnjak et al., 2014, p.8). Defined in this way, the main goals of ecotourism confirm that it has significant and complex social, economic and environmental implications (Vujović et al., 2012, p.31).

A clear distinction needs to be made between the concept of ecotourism and the category of sustainable tourism. Ecotourism is a modern form of tourism within the tourism system itself, whereas sustainable tourism is the one that strives to reduce tensions and factions within the overall interaction between the tourism industry, tourists, the environment and tourist places, which also includes working for the long-term quality of tourism, and natural and human resources (Đuričić et al., 2009).

The development policy of ecotourism should aim to harmonise highly developed and spatially concentrated tourism which can generate sufficient funds for the conservation and improvement of the environment. Therefore, highly developed countries with strong economies and high standards of living tend to spend more funds on solving environmental problems, due to increasing environmental implications. There are various challenges for the development of ecotourism in terms of sustainability and the involvement of local communities. As far as developing countries are concerned, they are facing significant obstacles and challenges regarding the implementation of ecotourism. Only one of these challenges is the lack of participation of the host community and other interested parties in the development of ecotourism, in spite of the fact that the involvement of the local community in the process of creating and managing protected areas is recognised as an example of good practice. One possible way of overcoming these shortcomings would be the acceptance of institutional arrangements which follow the goals of tourism and the preservation of independent organisations.

Ecotourism has been developing as an alternative to mass tourism, but unlike the latter, it does not require the extensive development of expensive infrastructure. Significantly fewer financial resources and investments are needed for the smooth development of ecotourism, because its advantage is its reliance on the natural beauty of the landscape and a healthy environment, which makes it a suitable form of tourism for less economically developed countries (Snyman, 2017, p.252). In this regard, one of the challenges ecotourism is facing is the disproportion between supply and demand, which manifests itself as the degradation and destruction of basic resources, and the uncontrolled influx of tourists due to a significantly higher demand for ecotourism.

#### *THE FUNCTIONAL CONNECTION BETWEEN ECOTOURISM AND THE ENVIRONMENT*

Ecotourism is directly connected with the environment in terms of the conservation and recovery of damaged environment. In comparing the characteristics of ecotourism and the principles of environmental protection, it can be noticed that ecotourism is fully in line with the concept and goals of achieving a high quality environment. Therefore, ecotourism should strive to preserve the natural environment, or the flora, fauna, landscape and cultural heritage of the area (Salman et al., 2021, p.42948).

Both the positive and the negative impacts ecotourism creates with its development in a protected area should be emphasised. The positive impacts can be seen in relation to the three most prominent dimensions of sustainability (economic, environmental and social). The economic benefits of ecotourism are: increased employment opportunities, job creation, the diversification of the regional economy, a contribution to gross domestic product, infrastructure development, and revenue transfer. From the ecological point of view, the proper management and application of ecotourism can affect the environment in the following ways (Kiss, 2016, p.234):

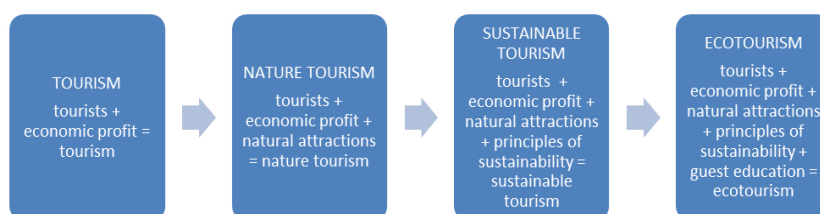
- Ecotourism is a relatively low-polluting economic activity that can improve the preservation and promotion of natural and cultural heritage;
- Ecotourism will encourage responsible tourist behaviour, and the preservation of important wildlife habitats and ecosystems;
- Ecotourism is the best alternative activity to environmentally harmful activities such as agriculture, forestry and mining;
- Ecotourism encourages increased conservation efforts through well-informed tourist guides, who exert their influence on environmentally responsible tourist behaviour;
- Ecotourism demonstrates the importance of natural and cultural resources for the economic and social well-being of the community.

In addition to having economic and environmental benefits, the development of ecotourism can also contribute to the improvement of society's respect for the local community, and provide an opportunity for better understanding and communication among people of different backgrounds. Ecotourism helps the political empowerment of local communities and nurtures the values of different cultures. Consequently, it is considered to be a way of promoting cultural exchange.

Despite its numerous benefits, ecotourism is still an extractive activity that can degrade the environment, rather than protect it as should be the case. Adverse effects can occur even at low levels of use. Some of the negative impacts of ecotourism on the environment are soil erosion, habitat change, air and water pollution, loss of biodiversity, and disturbance of local flora and fauna (Buckley, 2004, p.8). Ecotourism can have negative social impacts on host communities, and its attempts to increase the respect and appreciation for local cultures may produce the opposite effects.

More and more nature reserves, national parks, and natural, cultural and historical monuments are being established in the world. In 1960, about 3% of the Planet's surface was occupied by protected natural areas of various shapes and statuses, with a tendency of further expansion. In 2018, there were more than a hundred thousand protected natural areas that occupied more than 11% of the Planet's land surface, which is about 19 million square kilometres (Jovanović & Živković, 2018, p.212). As the functioning of these territories is connected with a special protection modality, the use of their resource potential is limited to certain forms of activity. Therefore, the problems of developing those forms of activities that will fully use specific production factors in protected areas emerge as ecological factors (Belij & Pavlović, 2018, p.58). Since ecotourism is based on a well-preserved natural environment and the use of resources of protected natural areas, its development path depends on the possibility of using these resources.

In fact, ecotourism has emerged as a bridge between tourism development and environmental protection, and, as such, it represents a small fragment of the tourism industry and a subset of natural tourism, established as tourism which respects the natural environment. At the same time, it is also rational for nature reserves to achieve ecological protection and to make use of their inhabitants. That is exactly why ecotourism is recognised as the best way to help local people and protected areas develop tourism. It is an ideal component of a sustainable development strategy, where natural resources can be used as tourist attractions without harming the protected area (Figure 1).



*Figure 1. Development and importance of ecotourism*

*Source: Author's review, according to International Union for Conservation of Nature*

The ecotourism market is constantly growing, globally generating a revenue of 77 billion dollars, and accounting for 5 to 7% of the total tourism market. The fact that its growth rate is between 10 and 30% (EBSCO, 2009) confirms that ecotourism is the fastest growing segment of the tourism market. According to the World Tourism Organization, the growth rate of ecotourism accounts for 6% of the world's gross domestic product, as well as 11.4% of the world's consumption. It is predicted that ecotourism will achieve high growth rates in the next two decades, and that consumption in ecotourism will globally increase at a higher rate than in the rest of the tourism industry. The best example of the accelerated development of ecotourism is Costa Rica, where the number of tourist arrivals in 2007 was recorded to be seven times higher than it was in 1986, and tourism revenues in 2007 were reported to be fourteen times higher than they were in 1986 (Center for Responsible Travel, 2014).

Well-preserved nature is one of the fundamental competitive advantages of the development of tourism in Serbia. The diversity of natural resources is an additional reason to consider the development of ecotourism as an important means of sustainable tourism development, and a consistent and long-term approach to achieving sustainability. At the same time, it is recognised that the profiling of products related to the use of nature and ecotourism are the initiator for achieving a higher level of competitiveness of Serbia as a tourist destination (Čerović et al., 2015, p.4).

The bases for the development of ecotourism, as a niche market of Serbian tourism, are protected natural areas, classified in seven categories. So far, 471 natural areas have been protected: 5 national parks; 18 nature parks; 21 landscapes of outstanding features and beauty; 70 nature reserves; 6 protected habitats; 315 natural monuments; and 36 natural assets with historical and cultural characteristics. Moreover, a significant number of wild species of plants, animals and fungi were placed under protection, 1784 of them as strictly protected, and 860 of them as protected, on various grounds. (Institute for Nature Conservation of Serbia, 2021).

The development of ecotourism, as it is defined in the international framework, is still in its infancy in Serbia. According to the World Tour-

ism Organization's estimation, ecotourism's global share in total tourist travels is between 2 and 4% (CenORT, 2018). Having in mind the tendencies in our country and the movements on the domestic tourist market, it can be estimated that this share is even smaller in Serbia. The reason behind this is the insufficient motivation of both the potential creators of this tourist product and its intermediaries, travel agencies, to invest in ecotourism, primarily due to low profitability.

### METHODOLOGY

The Travel and Tourism Competitiveness Index (TTCI) was developed in 2007 to measure the global competitiveness of the travel and tourism sectors of different countries. The TTCI provides unique data on many qualitative, institutional, business, and environmental issues, as well as data on the individual issues of the travel and tourism sector, and the quality of the natural environment. The Index consists of four subindexes, 14 pillars, and 90 individual components, arranged between different pillars.

The first subindex is *Enabling Environment*, which includes the general conditions necessary for working in the country, and includes 5 pillars: (1) Business environment; (2) Safety and security; (3) Health and hygiene; (4) Human resources and labour market; and (5) ICT Readiness. The next subindex is *Travel and Tourism policy and Enabling Conditions*, which includes policies or strategic aspects that directly affect the tourism and travel industry, namely: (1) Prioritization of Travel & Tourism; (2) International openness; (3) Price competitiveness; and (4) Environmental sustainability. The third subindex is *Infrastructure*, and it monitors the availability and quality of the physical infrastructure of each economy through: (1) Air transport infrastructure; (2) Ground and port infrastructure; and (3) Tourist service infrastructure. The fourth subindex, *Natural and Cultural Resources*, envelops the main reasons for travel and includes: (1) Natural resources; and (2) Cultural resources and business travel (WEF, 2019).

This research uses the data taken from the reports on the Travel and Tourism Competitiveness Index for the years 2007 through 2019, i.e. all the available reports regarding this Index. The number of the countries covered in the reports is different depending on the year in question - 124 countries were covered in the report for 2007, 130 countries in the report for 2008, 133 countries in the report for 2009, 139 countries in the report for 2011, 140 countries in the report for 2013, 141 countries in the report for 2015, 136 countries in the report for 2017, and, finally, 140 countries worldwide were covered in the report for 2019. This analysis covers only the Republic of Serbia, while the report from 2007 addresses Serbia and Montenegro as one country.

The research subject of this paper is ecotourism, which aspires to enable the tourism industry to operate while preserving the environment.

Building upon the set subject of research, the basic goal of the paper is to analyse the interdependence between tourism and the environment over a period of time, and to point out the importance of preserving and improving nature, as a basis for the development of ecotourism. The final goal of the paper is to analyse the achieved level of environmental quality as a component of the competitiveness of tourism in the Republic of Serbia, and as the basis for the development of ecotourism. The research hypotheses are the following:

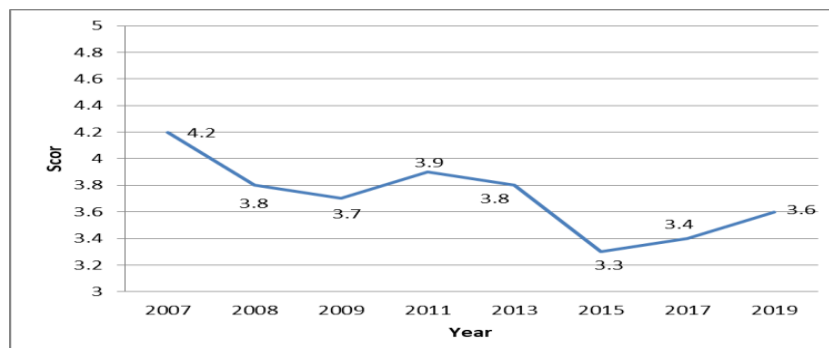
- The preservation and improvement of the environment are the basis for the development of ecotourism in the Republic of Serbia;
- The level of a destination's tourism competitiveness is conditioned by the mutual influence of tourism and the environment.

### RESULTS AND DISCUSSION

In accordance with the research hypotheses, special attention is given to the TTCI pillar *Environmental sustainability*. This pillar consists of components such as the rigour and application of government environmental decrees, as well as of variables for assessing water status, forest resources and the marine world. Considering the fact that tourism impacts the environment, indicators that show the level at which the travel and tourism industry is developing in a sustainable way have been taken into account with this pillar. *Environmental sustainability* should indicate the depletion of the natural environment in the country, and the possibility of adopting and enforcing environmental regulations. Achieving poor results within this category is a clear indicator of excessive depletion of natural resources, which reduces the competitiveness of the tourism sector.

The changes of TTCI throughout the selected time interval are observed through the comparative analysis of values or rank. Comparing the reports for 2007 and 2019, the oscillatory change of values towards decrease can be said to be characteristic. This may be due to the inclusion of an ever increasing number of indicators that are monitored on a year-to-year basis, as these affect the change in the total value of TTCI. Serbia had the lowest TTCI value in 2015, when the Index structure experienced a change with the introduction of a new pillar. Additionally, there were 141 countries included in the analysis of the report for 2015. According to the latest report, from 2019, Serbia took the 83<sup>rd</sup> place on the ranking list, with a score of 3.6. Compared to the previous report, from 2017, Serbia's rank improved significantly, by as many as 12 places, and the country's overall score improved by 0.2. This was the result of the improvements made in almost all categories which, according to the methodology of the World Economic Forum, determine the level of competitiveness of the tourism sector in any country (Graph 1).

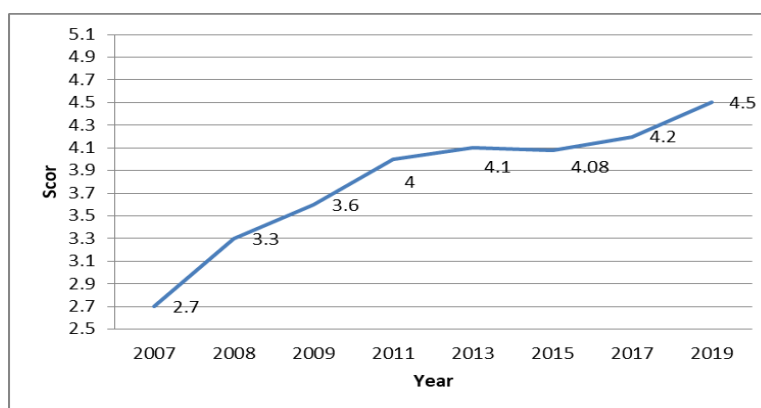




*Graph 1. Overview of the achieved level of competitiveness in tourism of the Republic of Serbia according to the TPCI for the period between 2007 and 2019*

Source: Author's review, according to WEF  
(2007, 2008, 2009, 2011, 2013, 2015, 2017, 2019)

The aggregate indicator (TTCI value) does not always have a great analytical value. Because of that, an in-depth analysis of the *T&T Policy and Enabling Conditions* subindex, which shows specific policies and strategic aspects that have a more direct influence on the travel and tourism industry, is necessary. The value of this pillar during the analysed period ranged from 3.7 to 4.6, with the lowest value recorded in 2015, and the highest in 2011. With the value of 4.3 in 2019, Serbia was ranked 91<sup>st</sup>, which is a significantly better ranking compared to several previous years.



*Graph 2. Environmental sustainability pillar value for Serbia for the period 2007-2019*

Source: Author's review, according to WEF  
(2007, 2008, 2009, 2011, 2013, 2015, 2017, 2019)

Further analysis will consider the pillar *Environmental sustainability*, which is the research subject of this paper. The scores of the constituent components of the *Environmental sustainability* pillar form the pillar's value. The value of this pillar is characterised by continuous growth throughout the entirety of the observed period – the pillar's value in relation to the Republic of Serbia ranged between 2.7 and 4.5 in the period between 2007 and 2019. At the same time, its ranking improved significantly – it was ranked 120<sup>th</sup> in 2007, and moved to the 40<sup>th</sup> place in 2019 (Graph 2). Such a significant improvement in the environmental sustainability in the Republic of Serbia is in line with the first hypothesis of this paper. Therefore, it can be *confirmed that the improvement of the quality of the environment represents a significant potential basis for the development of ecotourism in Serbia.*

*Table 1. Components of the pillar Environmental sustainability for Serbia, 2013-2019*

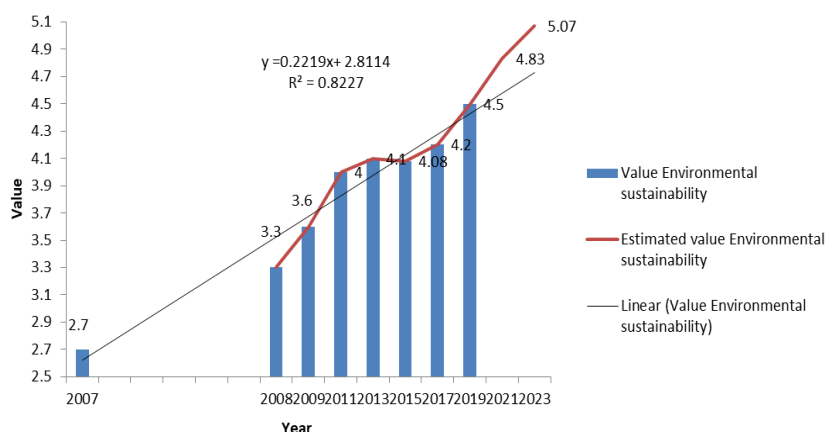
Components of the pillar Environmental sustainability	2013		↑↓	2015		↑↓	2017		↑↓	2019	
	Rank	Scor		Rank	Scor		Rank	Scor		Rank	Scor
Stringency of environmental regulation	97	3,4	↑	99	3,6	↓	101	3,4	↑	105	3,5
Enforcement of environmental regulation	122	2,7	↑	114	3	↓	126	2,9	↑	116	3,1
Sustainability of T&T industry development	114	3,5	↓	121	3,4	↑	111	3,5	↑	94	4
Particulate matter concentration				112	14	↓	103	11,6	↑	97	15,3
Threatened species	53	4	-	50	4	↑	44	4,7	↓	38	4,5
Environmental treaty ratification	84	18	↑	73	19	↑	54	22	↓	78	21
Baseline water stress				36	0,6	↑	46	0,8	-	49	0,8
Forest cover change				9	0,4	↓	17	0	-	18	0
Wastewater treatment				80	8,8	↓	75	6,4	↓	91	2,6
Coastal shelf fishing pressure				66	0,2	-	62	0,2			

*Source:* Author's review, according to WEF data (2013, 2015, 2017, 2019)

Based on the four-year period shown in Table 1, a constant growth rate of the majority of the components can be noticed through changes in the value of the components of the *Environmental sustainability* pillar. Despite the overall progress of the entire category, individual components in this pillar also point to deterioration. The greatest progress within this pillar was made in the *Sustainability of the Tourism Sector Development* component (17 places up), which assesses the level of development of the environmentally

sustainable tourism sector. The component *Environmental treaty ratification* shows the number of the ratified environmental treaties, and its increase over the years was observed. This indicates that the Republic of Serbia has been increasing the number of signed agreements in the field of environmental protection on a yearly basis, which formally affects the preservation of the environment. Following the component *Threatened species*, a significant improvement is noticed in terms of the reduced number of endangered species, which led to a rank change by as many as 15 places in the period between 2013 and 2019, and a 0.5% increase in value.

The component that measures the percentage of wastewater treatment recorded the value of 2.6% in 2019, compared to the value of 6.4% from the previous report. This means that this component's rank deteriorated by 18 places. *Baseline water stress* and *Forest cover change* represent components that deteriorated during this period as well. More precisely, there was an increase in water pollution and a decrease in the forest cover, which led to environmental degradation. In the future, particular attention should be paid to these components in order to eliminate this negative trend, because serious problems for the environment can be created in the long run.



Graph 3. Estimated values of the Environmental sustainability pillar for 2021 and 2023

Source: Author's review, according to WEF (2007, 2008, 2009, 2011, 2013, 2015, 2017, 2019)

Based on the actual values of the *Environmental sustainability* pillar for the Republic of Serbia in the period between 2007 and 2019, a projection of the future value for this pillar can be made for the next two periods, or for the reports for 2021 and 2023. The period between 2007 and 2009 is marked by constant growth, with a miniscule exception in 2015. The projected period is marked by the continuation of the growth trend of

the *Environmental sustainability* pillar's value, which indicates an improvement in the value of all the components included in its structure, and likely implies a better place on the ranking list, which is conditioned by the number of countries covered by the analysis (Graph 3). The increased values of the *Environmental sustainability* pillar in the upcoming period reflect a better and healthier state of the environment in the Republic of Serbia, as well as a reduction in the depletion of natural resources and their preservation for future generations. At the same time, it shows a reduced consumption of the natural environment in the country, and a continued adoption and implementation of environmental regulations. The higher values of the *Environmental sustainability* pillar indicate an increase in the competitiveness of the tourism sector, and opportunities to attract tourists to natural beauties.

Correlation analysis was used as the preferred method to investigate the relationship between the following variables: (1) TTCI and the *T&T Policy and Enabling Conditions* subindex; (2) TTCI and the *Environmental sustainability* pillar; and (3) *T&T Policy and Enabling Conditions* subindex and the *Environmental sustainability* pillar (Table 2).

Table 2. Correlation matrix of TTCI, *T&T Policy and Enabling Conditions* subindex and the *Environmental sustainability* pillar in Serbia 2017-2019

		TTCI	T&T Policy and Enabling Conditions	Environmental sustainability
TTCI	Pearson Correlation	1	0.343	0.719
	Sig. (2-tailed)		0.045	0.044
	N	8	7	7
T&T Policy and Enabling Conditions	Pearson Correlation	0.343	1	0.809
	Sig. (2-tailed)	0.045		0.039
	N	7	8	7
Environmental sustainability	Pearson Correlation	0.719	0.809	1
	Sig. (2-tailed)	0.044	0.039	
	N	7	7	8

Source: Author's independent recalculation based on WEF data

The results of the analysis show that:

- The Pearson's coefficient for TTCI and the *T&T Policy and Enabling Conditions* subindex reveals a moderate positive relationship between the two in the analysed time frame, with a statistically significant correlation coefficient of 0.34;
- The direction of the correlation between the overall TTCI and the *Environmental sustainability* pillar is positive, with a strong correlation, indicating that there is a high level of interdependence between the variables. The Pearson's coefficient's value of 0.72 is statistically significant;

- A direct correlation of intensity, with an extremely strong relationship, is present among the analysed variables (*T&T Policy and Enabling Conditions* subindex and the *Environmental sustainability* pillar). The significance of the coefficient and its value of 0.8 are statistically acceptable, which indicates that there is a direct quantitative agreement between the variables.

Upon applying correlation analysis to these variables, regression analysis was applied as well. Regression analysis determines the relationship between the two variables – *Environmental sustainability* pillar, which represents an independent variable, and TTCI, which represents a dependent variable. Based on the regression model, it is possible to notice how much the unit increase in the *Environmental sustainability* pillar value affects the change in the value of the TTCI. With a unit increase in the value of the *Environmental sustainability* pillar, there is a significant increase in the total value of the TTCI by 0.7. The coefficient of determination is higher than 0.5. Therefore, the model is statistically representative and can be used to predict general changes in TTCI values depending on the *Environmental sustainability* pillar. Thus, it can be said that it is possible to predict the value of the dependent variable in relation to the assumed value of the independent variable, and that it is possible to predict the effect of the change of the independent variable in relation to the dependent one.

*Table 3. Model elements of a complex regression per years (pillar components influence on its total value) in Serbia 2015-2019.*

	2015	2017	2019
	Value of $\beta$ (Sig.)	Value of $\beta$ (Sig.)	Value of $\beta$ (Sig.)
Const	-0.755	-0.19	-1.805
Sustainability of T&T industry development	0.889 (0.002)	0.942 (.000)	0.901 (0.001)
Wastewater treatment	0.874 (.000)	0.895 (0.001)	0.970 (0.001)
Baseline water stress	0.679 (0.001)	0.713 (.000)	0.658 (.000)
Forest cover change	0.664 (.000)	0.699 (.000)	0.741 (0.01)
Threatened species	0.449 (0.001)	0.543 (0.003)	0.498 (0.002)
Particulate matter concentration	0.535 (.000)	0.511 (0.001)	0.540 (0.001)
Stringency of environmental regulation	0.467 (0.001)	0.607 (.000)	0.600 (.000)
Enforcement of environmental regulation	0.382 (.000)	0.273 (.000)	0.567 (0.01)
Environmental treaty ratification	0.549 (.000)	0.434 (0.001)	0.375 (0.001)

*Source:* Author's independent recalculation based on WEF data

The influence of the value of the pillar's components on its own value was examined by multiple regression analysis. According to the value of the coefficient of determination, the model is deemed statistically

representative. Based on the formed regression model for the Republic of Serbia for the observed period of time, the unit increase of the components *Sustainability of T&T industry development* and *Wastewater treatment* influences the change in the value of the *Environmental sustainability* pillar the most, by as much as 0.9. Components such as *Baseline water stress* and *Forest cover change* lead to a decrease in the value of the *Environmental sustainability* pillar, with growth per unit measuring 0.7 as expected, because greater water pollution and reduction of the forest cover indicate damage to the environment and a change in quality. A slightly smaller decrease in the value of the *Environmental sustainability* pillar is caused by the components *Threatened species* and *Particulate matter concentration*, which cause the pillar's value to decrease by 0.5 with the unit change. With an increase per unit, components related to formal regulations in the environmental field – *Stringency of environmental regulation*, *Enforcement of environmental regulation*, and *Environmental treaty ratification* have the smallest impact on the change in the pillar's value, ranging from 0.27 to 0.6 (Table 3).

Based on the obtained results, the application of quantitative methods over selected variables for the selected time interval *confirms the hypothesis which states that the level of a destination's competitiveness depends on the relationship between tourism and environmental quality*. The attractiveness of a destination and its competitiveness can be increased by the proper management of environmental quality and the optimal use of its natural state. Competitiveness can be improved by applying environmental regulations such as codes of conduct, self-developed environmental practices, certification, and legislation (Blazeska et al., 2015, p.347). Maintaining a high level of overall environmental quality is important for most tourist destinations. In addition to that, natural resources must be maintained and managed appropriately in order to be protected from unnecessary depletion, which would facilitate their sustainability over longer periods of time. It is crucial that future destination development plans be compatible with the integrity of the environment in order for tourism to maintain its economic viability. Sustainable tourism development relies on policies that support harmonious relations between tourists, the local community, and the state government to ensure that such development is in balance with nature.

Future destination management strategies must include environmental protection measures, which will provide lower operating costs, higher revenues and profits, and a healthy environment (Mihalič, 2000). The quality of the environment has become a current issue in tourism due to increasing environmental awareness, tourist demand for better quality, and increased competition among destinations. It is the quality of the environment that has become a factor in emphasising competitiveness over other destinations with different ecological qualities. The consideration of

the overall quality of the environment includes not only the control of the impact of tourism on the environment but also the reduction of all types of environmental problems, as well as investments in environmental protection and the restoration of the degraded environment.

### CONCLUSION

The development of ecotourism is essential for preserving and maintaining the balance in the ecosystem, and its sustainable development. Tourism in natural areas, which usually includes some form of the interpretive experience of natural and cultural heritage, supports the preservation of indigenous communities, and is usually organised in smaller groups. The potential of ecotourism, as a segment of the sustainable development strategy, is significant. Therefore, ecotourism should be properly developed in accordance with the principles of sustainability and carrying capacity. It is essential for the development of ecotourism to preserve and continuously improve the quality of the environment.

The analysis of the components of the Travel and Tourism Competitiveness Index led to the conclusion that, in the Republic of Serbia in the period between 2007 and 2019, there was a significant improvement in the competitiveness of tourism according to variables related to the state of the environment. The greatest progress was made within the component *Sustainability of T&T industry development*, which assesses the level of development of the tourism sector which is environmentally sustainable. A significant positive shift in the assessment of the *Environmental treaty ratification* component was observed. This indicates that the Republic of Serbia has increased the number of signed agreements in the field of environmental protection year by year, which formally affects the preservation of the environment. Also, there has been a significant decrease in the number of endangered species. However, components related to water pollution and changes in forest cover have had a negative impact on the competitiveness of the tourism and travel sector in Serbia. These are components that have deteriorated during the previous period. More precisely, there has been an increase in water pollution and a decrease in forest cover, which has led to environmental degradation.

Well-preserved nature represents a significant competitive advantage for the development of tourism in Serbia. Also, preserved and protected natural resources are the basis for the development of ecotourism. It is especially important that the development of ecotourism in Serbia should be not only a means to achieve the overall sustainable development of tourism but also an adequate approach to repositioning Serbia as a tourist destination on the international market.

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## КВАЛИТЕТ ЖИВОТНЕ СРЕДИНЕ КАО ДЕТЕРМИНАНТА КОНКУРЕНТНОСТИ И РАЗВОЈА ЕКОТУРИЗМА РЕПУБЛИКЕ СРБИЈЕ

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### Резиме

Предмет истраживања у овом раду је екотуризам, као важан сегмент туристичке политике Републике Србије и облик туризма од суштинске важности за очување и одржавање равнотеже у екосистему, и његово одрживо развијање. Основу развоја екотуризма чини квалитетна и заштићена животна средина. Квалитет животне средине односи се на квалитет природних карактеристика дестинације, које могу бити погоршане људском активношћу. Природне особине попут живописних пејзажа, природне хидролошке структуре, чисте воде, свежег ваздуха и разноликости биљних и животињских врста могу бити умањене услед деловања загађења, при чему губе на атрактивности. Према туристичкој потражњи, квалитет животне средине је важан за конкурентност већине туристичких дестинација. У том смислу, квалитет природних атракција део је квалитетне понуде дестинације и представља значајну конкурентску предност.

Отуда, за циљ истраживања рада постављени су анализа међузависности туризма и животне средине и указивање на важност очувања природе, која представља основу за развој екотуризма. Будући да добро очувана природа представља једну од фундаменталних конкурентских предности развоја туризма Србије, у раду је анализиран достигнути ниво квалитета животне средине, посматран као компонента конкурентности туризма и основа за развој екотуризма. Стога су анализирани компоненте Индекса конкурентности путовања и туризма (енгл. Travel and Tourism Competitiveness Index), где је посебна пажња стављена на стуб „Еколошка компонента одрживости“ (енгл. Environmental Sustainability).

Добијени резултати показују да је за Републику Србију у периоду између 2007. и 2019. године забележено значајно побољшање ранга, али и вредности стуба „Еколошка компонента одрживости“. Република Србија нашла се на 120. месту 2007. године, уз вредност од 2,7, а 2019. године се померила на 40. место, уз вредности од 4,5. На тај начин је указано да унапређење стања животне средине представља значајан потенцијал за развој екотуризма у Републици Србији у предстојећем периоду. Анализом је утврђено да је највећи помак остварен у оквиру компоненте која оцењује ниво развијености туристичког сектора који је еколошки одржив. Поред тога, уочено је значајано унапређење при оцени компоненте која се односи на усвајање закона и прописа у области животне средине. Ово указује да је Република Србија у претходном периоду повећавала број усвојених закона и прописа из области заштите животне средине, чиме се и на формалан начин утиче на њено очување. Запажено је битно побољшање и у погледу смањеног броја угрожених врста.

Међутим, конкурентности сектора туризма и путовања у Србији негативно доприносе компоненте које се односе на загађење вода и промену шумског покривача. Компоненте „Основно загађење воде“ (енгл. Baseline water stress) и „Промена шумског покривача“ (енгл. Forest cover change) са растом у вредности од 1 доводе до смањења вредности стуба „Еколошка компонента одрживости“ за чак 0,7. Ово указује да је током претходног периода (између 2007. и 2019. године) дошло до повећања загађења вода и смањења шумског покривача. Закључак који произилази из овога је да би у наредном периоду нарочита пажња требало да буде посвећена управо заштити вода и очувању шума, не би ли се унапредила конкурентност сектора туризма и створила основа за развој екотуризма.