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Sustainable tourism development in mountain areas in Šumadija and Western Serbia

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Abstract: Sustainable tourism, as an integral part of sustainable development, emerged as a logical outcome of preventing the uncontrolled and excessive use of tourism resources and attractions. This study analyzes whether mountain tourism development in Serbia can be sustainable and feasible in the long term. Given the heterogeneity of mountains in Serbia in terms of tourism development, the subject of this research is the achieved level of sustainable tourism development in mountains situated in the most developed and most visited region in Serbia - Šumadija and Western Serbia: Zlatibor, Kopaonik, Tara, Zlatar, Mokra Gora and Goč. The analysis was conducted by using five groups of the EU's comparative indicators of sustainable tourism: economic, social, cultural, environmental and tourist satisfaction indicators. The research results showed that the development of tourism in the examined mountains is not fully aligned with sustainable development. The tourist satisfaction indicator has the most acceptable values, which is a good basis for further harmonization of tourism development on the principles of sustainability. Economic indicators, especially the ratio of overnight stays and accommodation capacities, show the most unacceptable values, which indicates the need for implementing changes in the process of tourism development in the coming period. The analysis of sustainable tourism in mountains belonging to the region of Šumadija and Western Serbia undoubtedly points out that it is necessary to significantly change the current tourism product portfolio. This implies harmonizing mountain tourism development with global trends. Certainly, a comparative analysis that looks at the degree of sustainability of mountain tourism in some countries of the Alpine region, such as Switzerland, Austria and Slovenia, contributes to this. The more intensive development of tourism throughout the year would significantly improve indicators of sustainable tourism in all analyzed mountains of Šumadija and Western Serbia. This would improve the value of economic indicators, which are marked as the most unsustainable. The development of tourism in the summer season, especially recreational and adventure tourism, would improve the social and cultural component of sustainable tourism. Environmental dimension of sustainable tourism would be enhanced by the development of ecotourism. By connecting spatially close mountains (Zlatibor, Zlatar, Tara and Mokra Gora) into a unique and integrated tourism destination, synergistic effects would be achieved resulting in international recognition and making the region of Šumadija and Western Serbia competitive on the European market.

Keywords: Sustainable tourism development; Mountains; Tourism effects; Sustainability indicators; Šumadija and Western Serbia

1 Introduction

In the last thirty years, the economic effects of the development of tourism have resulted in its dominance at the global level, where it has profiled itself as one of the leading development economic branches of many national economies (Cernat and Gordon 2012; Koseoglu et al. 2016). Modern concepts of tourism development also underline other effects of tourism (Cohen et al. 2014), which are not predominantly economic in character, however, they can significantly increase the value of both tourism

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and the area in which it develops (Bojanic 2011; Buckley 2012; He et al. 2018). The most important effects are certainly the tourism's social and cultural impacts on the destinations where it develops (Su and Swanson 2017), which contribute to an increase in the degree of recognition of the particular destination area and provide opportunities for development of other industries. Also, the development of tourism increases the number of stakeholders interested in its development (Tugcu 2014). Special emphasis should be placed on the possibility of developing entrepreneurship, especially the green one (Han and Yoon 2015). Green entrepreneurship encourages local development and sustainable use of resources, which are important goals of sustainable tourism.

With this in mind, tourism represents a certain kind of network consisting of interested stakeholders (Baggio et al. 2010), which greatly changes the role that tourism has played in the past. All stakeholders are becoming interested in the sustainable tourism development. To avoid the uncontrolled growth of tourism, which can negatively affect the quality of resources specific for a particular destination, it is of utmost importance to continuously monitor its development and impact (Bithas 2011; Torres-Delgado and López Palomeque 2012). This is especially important in destinations characterized primarily by natural attractions (Peattie 2010), which would be irretrievably lost as tourist potential due to uncontrolled exploitation. Therefore, it is essential to adjust the tourism growth to the demands of all stakeholders in the destination, since only in that situation can the long-term effects of tourism development be realized (Buckley 2012; Milićević et al. 2020). In this way, the sustainable development of tourism is achieved, through the synergy of economic, socio-cultural, ecological, institutional, demographic and political development goals.

The concept of sustainable development of tourism has come into the focus of growing interest of researchers and policy makers. It has developed as a consequence of the degrading effects of tourism, aiming to minimize adverse effects of tourism activities (Polonsky et al. 2003; Torres-Delgado and López Palomeque 2014; Zolfani et al. 2015; Saarinen 2015; Grimwood et al. 2015). Sustainable tourism development manages the impacts of tourism on the destination's environment, economy and community and maintains and enhances the destination's resources for the present and future needs of both tourists and the communities that host them (UNWTO 2007). Many international organizations and scientists defined three main sustainability principles, i.e., pillars, which relate to environmental, economic, and social and cultural aspects of tourism growth and highlighted that an adequate equilibrium needs to be created among the cited three aspects to provide the long-term sustainability (Farsari 2012; Schweinsberg et al. 2012; UNWTO 2013; Amerta 2017; Reiser and Pforr 2017; Butler 2018). Namely, development of sustainable tourism should constantly be productive and have a positive impact on the local communities, governments, and investors, as tourism stakeholders, at present and in the future (Amerta et al. 2018), as well as ensure higher satisfaction of tourists. The sustainable development of tourism is determined by the following operational directions: minimizing interference with the natural environment, ensuring respect for cultural differences, maximizing the inclusion of local communities in tourism services, and providing higher quality tourism experience (Bugdol et al. 2019; Trišić 2019).

The social and cultural costs of tourism are the least evident and the most difficult to quantify. In contrast, economic impact is commonly the main goal of tourism growth. The impact of tourism on environment is evident, however, the effects on host community and culture occur gradually, impact each destination and people differently and are difficult to separate from other effects (Inkson and Minnaert 2018). According to the results of Cole (2006), economic and ecological aspects are given priority over the social and cultural ones. However, some studies have found that environmental aspect is often marginalized, while the economic one is given priority (Mihalič et al. 2012). In general, most of the tourism destinations want to attract as many tourists as possible, thus they implement economic maximization strategies (Gössling et al. 2016). As possible solution to the problems in environmental and social sphere caused by tourism development, a number of new initiatives have emerged calling for sustainable forms of tourism. These include ecotourism, recreational, adrenaline, cultural, manifestation, nature, geo, ethical and community-based tourism and are a sustainable alternative for the mass tourism that is unacceptable in environmental, social, ethical and political terms (Mihalic 2016; Chettiparamb and Kokkranikal 2012; Novelli 2005).

However, some academics suggested institutional sustainability as a fourth pillar of the sustainability concept. According to Spangenberg (2002), interpersonal processes, including communication and cooperation, are the building blocks of institutions; they provide information and set rules thus governing interaction between the members of the community. Focusing on institutional sustainability as an element of governance for sustainable development, it implies that we should concentrate on the activities performed by different institutions pertaining to decision making processes and sustainability policy implementation (Pfahl 2005). Inglés-Yuba et al. (2016) suggest that sustainable development represents a

system consisting of four dimensions (economic, environmental, social and institutional), including interactions between the indicators within each of the dimensions, as well as interactions between the dimensions themselves. In their analysis of the institutional dimension, Babí et al. (2019) highlighted the importance of establishing good relations with destination stakeholders. In other words, the collaboration between broad ranges of stakeholders enables greater sustainability in terms of destination development. Badola et al. (2018) are of the opinion that institutions implement regulations and define the nature of tourism activities, thereby affecting the tourist's behavior. The institutions working at the local level have the possibility to make sure that nature-based tourism does not transform into mass-tourism by defining the limits relating to the number of tourists and infrastructure development.

The natural environment, as the basis for tourism development, includes many challenges related to business operations in terms of the management of visitors, natural resources, and communities (Lundberg and Fredman 2012). Tourism in protected zones can cause excessive damage to vital values of those areas, especially if not developed properly. In some protected zones there are so many guests, that environment and the tourist experience quality equally suffer. Also, tourist facilities are often not in line with the conservation aims, thus damaging the natural landscapes. On the other hand, if strategic and managed sustainably, tourism can be a positive power, bringing welfare to the protected zones and local societies in similar way (Jovičić and Ivanović 2004; Yang et al. 2012). The growing demand for visiting and experiencing protected areas, including mountains, calls for such management practices which integrate conservation of natural and cultural resources and provision of top quality tourist experience (Manning et al. 2017). Sustainability-based strategies include more stable management of stakeholder welfares while and offer solutions pertaining to conserving the natural resources of protected areas (Mitchell et al. 2013; Ma et al. 2018).

A large number of mountain areas provide a diverse resource base for tourism activities (Chiodo et al. 2019), primarily due to abundant natural resources and beauties. The mountain protected areas are crucial for protection of vulnerable mountain ecosystems, however, they can be popular tourism destinations and attract a great number of tourists (Hibner et al. 2018; Telbisz et al. 2020). Mountain tourism is directly related to sustainable tourism, and is practically linked with natural habitats and their biodiversity, where national parks, protected areas, rural areas and local population's engagement are of great significance (Magadán-Díaz and Rivas-García 2019). It can also be a significant driver for rural development, i.e., the tool for economic restructuring and local development in mountain communities (Lun et al. 2016). The tourism development in the mountain areas can provide better quality of life to local community by implementing sustainable economic development initiatives and environmental conservation. From the socio-economic and environmental aspect, mountain tourism is a two-edged sword: it offers many opportunities, but it also can be a source of problems (Nepal and Chipeniuk 2005). Mountain tourism includes a number of different outdoor leisure and sports activities (UNWTO 2020). In many mountain destinations, tourism is the main source of income, however, some forms of tourism have negative environmental impacts (Gløersen et al. 2016).

The research analyzes sustainable tourism development in Serbia using the example of mountains. It examines the most visited mountains in the region of Šumadija and Western Serbia, which is the most visited tourism region in Serbia. In addition, this form of tourism, together with urban and spa tourism, represents the most developed form of tourism in the country. This is especially important considering the development of sustainable tourism and the possibility of forming unique tourism products of many destinations. Accordingly, the paper will analyze the following mountains: Zlatibor, Kopaonik, Tara, Zlatar, Mokra Gora and Goč. Mountains in Serbia offer numerous nature-based tourism activities. During winter, tourists can enjoy skiing, snowboarding and snowmobiling, while the summer tourism offer includes hiking, mountain biking, horse riding, paragliding, rail bobsledding, zip lining, tubing and panoramic cable-car rides (Tourism Organization of Serbia 2020). However, summer tourism season is still not adequately developed and the winter season is still predominant, therefore having the significant environmental impact (Ćurčić et al. 2019). Therefore, the country has favorable conditions for sustainable tourism development, which can be achieved through limiting or balancing the attention of tourists and developing different tourism products and all-year tourism.

2 Materials and Methods

Serbia is a country in the southeastern Europe situated in the central part of the Balkan Peninsula. The country has moderate continental climate with warm to hot summers and cold winters in the north and

relatively mild winters in the south. The average annual temperature ranges between 6.1°C (43°F) and 11.1°C (52°F) depending on the altitude. Precipitation is well distributed although it varies by region.

In the past, the development of mountain areas in Serbia was mainly focused on those areas that were easily accessible to the local population and which they could easily adapt to meet their needs, while the majority of other areas remained unexploited. In contrast to other areas, tourism development in mountains is predominant, compared to the development of some other industries; therefore, tourism has become one of the most dominant industries in these areas. According to the Statistical Office of the Republic of Serbia (SORS) (2019a), mountains are one of the most important tourism destinations in Serbia, which is clearly concluded from the following overview (Table 1).

Contemporary development trends relating to mountain tourism primarily emphasize the all-year-round tourism, that is, the development of an attractive tourism offer that will ensure the greatest possible occupancy of tourism capacities throughout the year. In this way, the seasonal effects caused by the development of the most market-acceptable tourism product of mountains - ski tourism - are avoided. In this regard, the paper focuses on the analysis of the achieved tourism development in the selected mountains in Serbia.

Given the distinctive heterogeneity of relief forms in Serbia, where the northern part is dominated by plains, and the central and southern parts are predominantly hilly and mountainous, as well as the level of tourism development in mountains, the paper will analyze mountains in the region of Šumadija and Western Serbia. This region is the most visited one (SORS 2019a), which is clearly concluded from the following overview (Fig. 1).

In accordance with the above-mentioned issues, the paper analyzes the most visited mountains in the region Šumadija and Western Serbia: Zlatibor, Kopaonik, Tara, Zlatar, Mokra Gora and Goč (Fig. 2). All the mentioned mountains (SORS 2019a) are representative tourism destinations in Serbia (Table 2).

For research purposes, the methodology used in the paper is based on the analysis of the sustainability indicators developed by the EU (Fig. 3). This research is based on the research done by authors who used the same conceptual framework and the same methodology (Jovičić and Ilić 2010, Marković et al. 2016, Burghilea et al. 2016, Bošković et al. 2020).

This methodology is the most appropriate for the analysis of areas abundant in natural tourism potentials, which has been proven by numerous research studies conducted in tourism destinations of different types. Mountains fit perfectly into the definition of these areas. Indicators are classified into five groups (Jovičić and Ilić 2010):

1. Economic indicators, which assess the economic effects of tourism development in the destination;
2. Tourist satisfaction indicator, which measure the quality of destination's tourism products;
3. Social indicators, which show the satisfaction of the host communities with the development of tourism;
4. Cultural indicators, which monitor the impact of tourism on cultural attractions;
5. Environmental indicators, which measure the impact of tourism on natural and built environment.

The application of these indicators is based on a coding system that identifies certain zones that directly show the achieved degree of tourism sustainability:

- The red zone indicates an unsustainable solution;
- The yellow zone represents a relatively sustainable solution;
- The green zone indicates sustainable solution.

3 Results

Analysis of the level of sustainable tourism in the selected mountains requires determining the value of each indicator separately, based on the number of tourists and overnight stays per month (Table 3). Furthermore, for the sake of clarity and ease of comprehension of data relating to the selected mountains, two figures (Figs. 4 and 5) were designed (SORS 2019b). Therefore, number of locals living in the selected mountains in 2018 (Table 4) are also provided (SORS 2019a).

The values of relevant sustainable tourism indicators are shown in Fig. 6.

As sustainability zones are not defined for some of the indicators, their values could not be quantified; hence, the values are qualitatively described. These indicators are as follows:

1. Coefficient of local tourism growth, which has:
 - Low value in Kopaonik, Goč, Zlatar and Mokra Gora;
 - Medium value in Zlatibor and Tara;

2. Share of tourism in local net social product, indicating:
 - Significant and growing value in Kopaonik, Zlatar and Zlatibor;
 - Significant and stagnating value in Goč, Mokra Gora and Tara;
3. Usage and occupation of land: % allowable lot coverage, pointing to:
 - Adequate land development in Mokra Gora and Tara;
 - Excessive land development in Kopaonik and Zlatibor;
 - Underdeveloped in Goč and Zlatar.

4 Discussion

Although mountain tourism in Serbia continues to develop year by year, not all of the indicators are sustainable. The sustainability indicator of mountain tourism expansion in Serbia which is at greatest risk is the cultural indicator. This indicator is determined based on the relationship between the tourist nights and population numbers. Concerning Zlatibor and Kopaonik this indicator is the most compromised one and is not in the sustainability zone. On the other hand, concerning the mentioned indicator, it is in the green zone in Kopaonik, Mokra Gora and Goč, therefore these mountains are less affected by the number of tourists. The environmental indicators are significantly adversely affected in the mountains Kopaonik and Goč; this indicator is determined by the number of tourists who do not arrive to the particular destination using their own vehicles. In terms of both destinations, this indicator is in the red zone and is utterly unsustainable, while regarding mountains Tara, Zlatar and Zlatibor, the indicator is in the yellow zone and therefore moderately sustainable. The environmental indicator is in the green zone only in the mountain Mokra Gora which indicates that full sustainability has been achieved. The social indicator, which is expressed as the percentage of tourists who come to the destination without the mediation of tour operators, is in the red zone and thus unsustainable in mountain Tara, while in Mokra Gora it is moderately sustainable. As for the remaining four mountains, this indicator is in the green, i.e., sustainable zone. In terms of the economic indicator, which is expressed as the ratio of the number of nights and accommodation capacities, it is only sustainable, i.e., in the green zone concerning the mountain Tara, while all other mountains are in the red, unsustainable zone. On the other hand, the indicator of tourism sustainability that is under the least pressure and is least affected, and in most cases has values that correspond to the green zone, is the tourist satisfaction indicator.

It is necessary to emphasize that the results of the research conducted by the researchers from Slovenia comparing the degree of sustainability of mountain tourism in Slovenia, Switzerland and Austria showed that economic aspects and the tourism offer are significantly more developed in Switzerland and Austria compared to mountains in Slovenia (Kuščer and Mihalič 2016). Namely, the aforementioned countries, being small Alpine states, are easy to compare in terms of their environment, innovation and development level, however, considerable differences relating to destination resources and location are recognized. According to the results of Travel & Tourism Competitiveness Index in 2019, Switzerland ranked 10th with a mean score of 5.00, Austria ranked 11th with a mean score of 5.00, Slovenia ranked 36th with a mean score of 4.3, whereas Serbia holds the 83rd place on the list with a mean score of 3.6 (WEF 2019). In addition to the similarities these three countries share, there are also discrepancies, for example Austria has 250 ski resorts, Slovenia about 80, while Switzerland has 200, which indicated different levels of opportunities for mountain tourism development (Kuščer and Mihalič 2016). There are 31 ski resorts in Serbia, therefore the country's mountains offer many opportunities to winter sports enthusiasts. The resorts have been upgraded by the public enterprise, Ski Resorts of Serbia, which is building skiing infrastructure and bringing the ski resorts to the level of a modern international ski destination. The aim is to have the resorts remodeled so they are attractive to both domestic and foreign tourists throughout the entire year (Vanat 2019).

However, in contrast to the mentioned two countries, Slovenia is characterized by a significantly higher degree of environmental protection and autochthonous quality. Simultaneously, the sociological and cultural tourism aspects did not show any major differences regarding these three countries. Taking into account the fact that in Serbia the cultural indicator of the population is in the red zone, the existing system is unsustainable in terms of the future tourism development.

Tourist satisfaction indicator points to the level of satisfaction of tourists with the quality of available facilities and highlights their views and attitudes linked to tourism destinations. According to some authors (Abubakar and Movondo 2014; Chen et al. 2016), tourist satisfaction influences the development options of certain destinations in terms of improving and developing their tourism offer. If the percentage of repeated tourist visits in a mountains ranges between 30% and 50%, the particular destination is considered an

attractive one, since it meets all the needs of tourists who want to visit it again (Confente 2015). This could enable the actors of tourism policy, i.e., destination managers, to take certain steps in terms of further promoting such destinations (Kang and Park 2014). The research findings show that the satisfaction of tourists with destinations is characterized by values related to the green zone for the mountains Kopaonik, Zlatar, Goč, Mokra Gora and Zlatibor and indicate the sustainability of the tourism system in this segment, while in terms of Tara the mentioned values are in the yellow zone, thus indicating moderate or acceptable pressure on the sustainability in these destinations. In accordance with the EU standard, the tourist satisfaction indicator is within the green zone and the present situation concerning tourism progress is therefore sustainable, while in the case of the yellow zone the growth exerts certain burden and should be considered in the future. The findings of a research carried out by Marković et al. (2016), showed the same results for the mountain Mokra Gora and the city of Užice.

The quality and attractions of the tourism destination determine cultural, tourism, sports and other offers. This is also the reason why a hierarchy between mountains, as tourism destinations, is pronounced. Bigger places throw a shadow on the hinterland and limit the possibilities of growth for the resorts and companies operating there. The hierarchy among the destinations has resulted in transition from the mature mountain tourism market to a concentration of visitor flows on the most attractive places. In addition, a group of researchers who monitored the factors that specify the sustainability of tourism in the mountains Tara and Kopaonik, shows that the number of visits to Tara mountain in 2016 amounted to 38.62% of the total number of tourists and that this value is in the green, or sustainable zone. According to those results we could conclude that situation regarding the natural properties and living environment is sustainable (Kostić et al. 2018). This is also in a positive correlation with the results of this research, which finds that the economic parameter defined by the relationship between the number of nights and the total accommodation capacities was in the green zone referring to Tara mountain, while in the case of all other mountains this value was in the red zone, indicating the unsustainability of the number of tourists and the adverse effect on the environment and the ecosystem of a particular destination. Kopaonik mountain has a significantly higher number of sunny days during the year, and also has significantly larger number of various tourist attractions in comparison to Tara mountain, which explains why this tourism destination has more tourists than Tara mountain. Local population number is also significantly smaller regarding Tara mountain compared to Kopaonik which implies greater number of beds for tourists. With almost 200 sunny days a year, Kopaonik deserves its second name "Sunny mountain". Cold air falls into the surrounding plains, so winter temperatures are not too low. The average annual temperature is 3.7°C. Snow begins in late November and stays until May, on average 159 days a year. This is the main reason why tourists may decide to visit Kopaonik mountain compared to Tara. However, regarding the seasonal character of the tourist traffic, which implies the number of tourists during the three most-visited months, it can be noticed that the given value of the indicator is 40.03, which indicates some pressure on the destination resources and is thus in the yellow zone. This also points to the fact that this number of tourists exerted certain pressure on the environment; therefore, this finding differs from the data from 2016 and the study done by Kostić et al. (2018).

Concerning the aforementioned indicator, which measures the satisfaction of tourists and also shows their intention to return to the particular destination, the value of 45% was only recorded in the case of the mountain Tara, thereby classifying it into the yellow zone in terms of sustainability. In fact, this points to the conclusion that a moderate overload was recorded and that with this rate of growth in the number of tourists visiting the destination, this indicator could be seriously compromised. On the other hand, in the previously mentioned study done by Kostić et al. (2018), the number of tourists visiting the destination was on the border line between the yellow and green zone, which means that the tourism destination was under much less pressure from tourists.

Despite the fact that the mountains have an exceptionally rich and diverse tourism offer in the summer season, the largest number of tourists visiting the three mountains: Kopaonik, Zlatibor and Zlatar, is recorded during the winter months as a result of the rich winter tourism offer. However, in contrast to the three mentioned destinations, Tara, Goč and Mokra Gora have significantly more tourists in the period from April to June, while Zlatibor records the largest number of tourists in June, July and August. Similar results were confirmed by Čurčić et al. (2019), who proved that the winter months are dominant regarding the number of tourists and tourist activities in the mountains. Kopaonik National Park, a strictly protected area, is located on this territory. The National Park includes many smaller protected areas. In parallel, Kopaonik has the largest ski center in Serbia, which puts it in a very contradictory situation, since it negatively affects the environment and is not eco-friendly. However, the situation concerning Tara is quite different.

As a result, the majority of global mountainous areas are facing environmental degradation. Thus, proper management of mountain resources and socio-economically responsible behavior of mountain tourism participants and stakeholders requires great caution in terms of developing tourism offer of Serbia (Kuščer et al. 2017). Regarding the research findings obtained based on environmental indicators, Kuščer pointed out that environmental indicator was significantly impaired relating to mountains Kopaonik and Stara Planina, while in terms of Tara and Zlatibor it was in the yellow zone and therefore moderately sustainable; however, regarding Divčibare it was in the green zone, which indicated sustainability of this tourism indicator.

Research findings show that the largest number of tourists visiting mountains Tara, Mokra Gora and Zlatibor is recorded in the summer months, while the largest number of tourists visiting Kopaonik is recorded during January, February and March. Tara mountain is a case of a destination where the development of tourism rests upon nature-based tourism motives, while anthropogenic elements represent complementary tourism motives. In terms of Zlatibor mountain, the tourism potential is based on natural and material components. According to statistical analysis for Kopaonik, in the three most visited winter months (January - March), 252,919 tourist overnight stays were registered, making 51.02% of the total number of tourist overnight stays in 2016. Also, based on the border values referring to seasonal concentration of tourist circulation during the three most visited months, the calculated indicator's value of 51.02% places it within the red zone, that is, indicates unsustainable situation concerning natural resources and living environment in this mountain. The total number of surveyed people, 80% of interviewees, said that they visited Kopaonik one or more times, while 75% reported that they expect to visit this mountain one more time. Based on the EU standard, these values belong to the green zone (Kostić et al. 2018). Both mountains have their comparative advantages and tourism products that attract tourists, so it is necessary to look at changes in tourist attendance that show the extent to which the natural potentials of these tourism destinations have been economically valorized.

The number of tourists in the period from 2013 to 2015 was higher in Zlatar in comparison to Goč mountain, where number of tourists was higher during 2013 compared to 2015. Also, number of tourist overnight stays was higher during the first mentioned period of time regarding Zlatar compared to Goč in relation to the second observed period (Government of the Republic of Serbia, Ministry of Trade, Tourism and Telecommunications 2016).

In terms of tourism and economic development, in addition to the economic effect, it is imperative to preserve the environment, because the increase in the number of tourists visiting a destination should not lead to the unresolved problems of waste disposal, water and air pollution (Todorović et al. 2016). The same study confirmed that the number of tourists visiting Zlatibor during 1999 and 2010 was twice as high compared to Tara. During 1999, there was a higher share of foreign tourists in the total number of tourists visiting Tara than Zlatibor. In 2010, there was a significant change in the ratio of domestic and foreign tourists in the total number of tourists. In fact, the share of foreign tourists is increasing in terms of both mountains, however, it is more pronounced on Zlatibor. The largest positive change was recorded in the category of the number of foreign tourists, where the share of 1.5% foreign tourist arrivals increased to 16%. In comparison, the share of overnight stays realized by foreign tourists increased from 0.89% to 12.78%. To sum up, tourism development on Zlatibor mountain during the two observed periods significantly differs in terms of the number of foreign tourists.

The aspects of mountain tourism sustainability are very important due to the uncontrolled tourism development that could result in the complete collapse of the ecosystem of a mountain area (Torres-Delgado and Lopez Palomeque 2012). Therefore, it is an imperative to monitor the effects of the development of tourism on a particular mountain. This control is most important particularly in mountainous regions, where uncontrolled exploitation of natural resources can occur, thus eventually leading to significant threat to the destination environment and affecting their tourism development (Peattie 2010). Hence, tourism sustainability in mountains is achieved by observing and monitoring the requirements of all users and participants in mountain tourism, starting from the host communities and their needs to the tourists and tourism in general, as an industry (Bošković et al. 2020). Observing and maintaining harmony and balance between all these components ensures effective sustainable development of mountain tourism.

5 Conclusion

Using the selected methodology, the paper unequivocally shows that tourism development in selected mountains in Serbia is not harmonized with sustainable development, and thus not viable in a longer period of time. The analyzed indicators point to generally unsustainable solutions, which are primarily a consequence of insufficient tourism development over the past period. This is the result of relying on tourism development predominantly based on winter tourism, which due to global climate change, has a tendency to shorten in time during the year. Such trends lead to insufficient occupancy of accommodation capacities, as a key economic indicator, which results in the economic unsustainability of most of the analyzed destinations. Relatively favorable values of indicators of social and environmental sustainability are rather a consequence of insufficient development of tourism, than planned solutions. Cultural unsustainability is present in all analyzed destinations; this, in case of the development of mass tourism, would be even more pronounced and completely unacceptable in analyzed mountains.

The assessment of sustainability indicators concerning selected mountains in the region of Šumadija and Western Serbia calls for incorporating substantial changes in the current tourism portfolio. These changes must be in line with the global trends relating to the development of mountain areas. Transformation of mountains from the predominant white tourism towards a more significant participation of the green tourism, will significantly improve sustainability indicators. This is relatively easy to achieve, given the resource availability and well-established image of the tourism destination, which exists in the national and regional frameworks. The forms of tourism that demonstrate the highest potential are ecotourism, recreational, adrenaline, cultural, manifestation, nature, geo, ethical and community-based tourism. The development of aforementioned tourism forms will lead to an increase in economic indicators, in terms of greater occupancy of accommodation facilities and reducing the seasonal concentration of tourists, which will result in a greater share of tourism in Gross Domestic Product (GDP). The achievement of social and cultural sustainability greatly benefits the satisfaction of the local population and makes it possible to maintain the authenticity of the destination. The participation of the local population in mountain tourism industry is one of the preconditions for sustainable development, therefore it must be significantly improved in the future. Relying on the green forms of tourism, which are less intensive than the mass ones, will ensure the preservation of the environment, and thus the ecological sustainability.

Bearing in mind that the analyzed destinations are relatively close in spatial terms, especially Zlatibor, Zlatar, Mokra Gora and Tara, the option of creating an integrated tourism product in the future should be considered. Tourism development in the observed regions can be significantly improved through synergistic benefits, including overcoming local features of individual destinations and achieving their sustainable development, eventually resulting in an integrated and unique tourism destination with tourism products that are competitive on the European market. In addition, due to the large number of different attractions located in these areas, the number of tourists can be significantly increased, the tourism season extended and sustainable development supported. This is how the attractiveness of the whole region of Šumadija and Western Serbia can be enhanced, leading to the improved sustainable tourism development in other mountains in the region (Kopaonik and Goč), as well as across Serbia.

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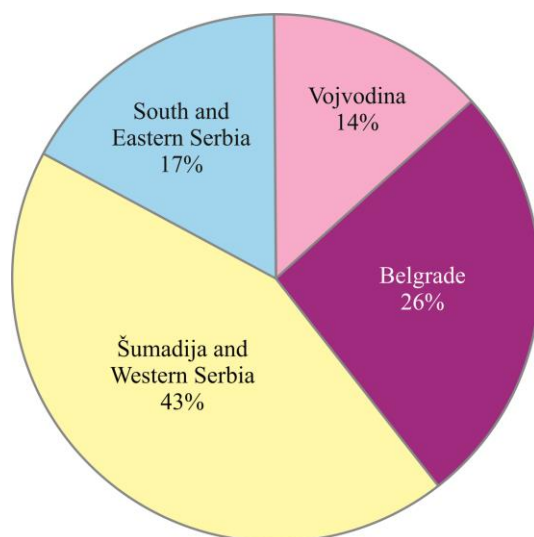


Figure 1 Ratio of overnight stays of tourists per region in Serbia, 2018.

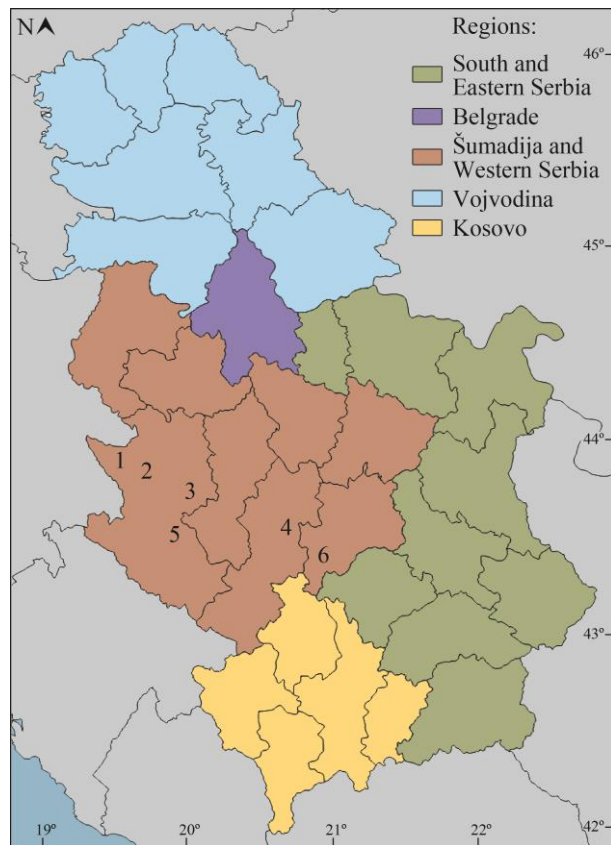


Figure 2 Locations of selected mountains in Serbia (1-Tara; 2-Mokra Gora; 3-Zlatibor; 4-Goč; 5-Zlatar; 6-Kopaonik).

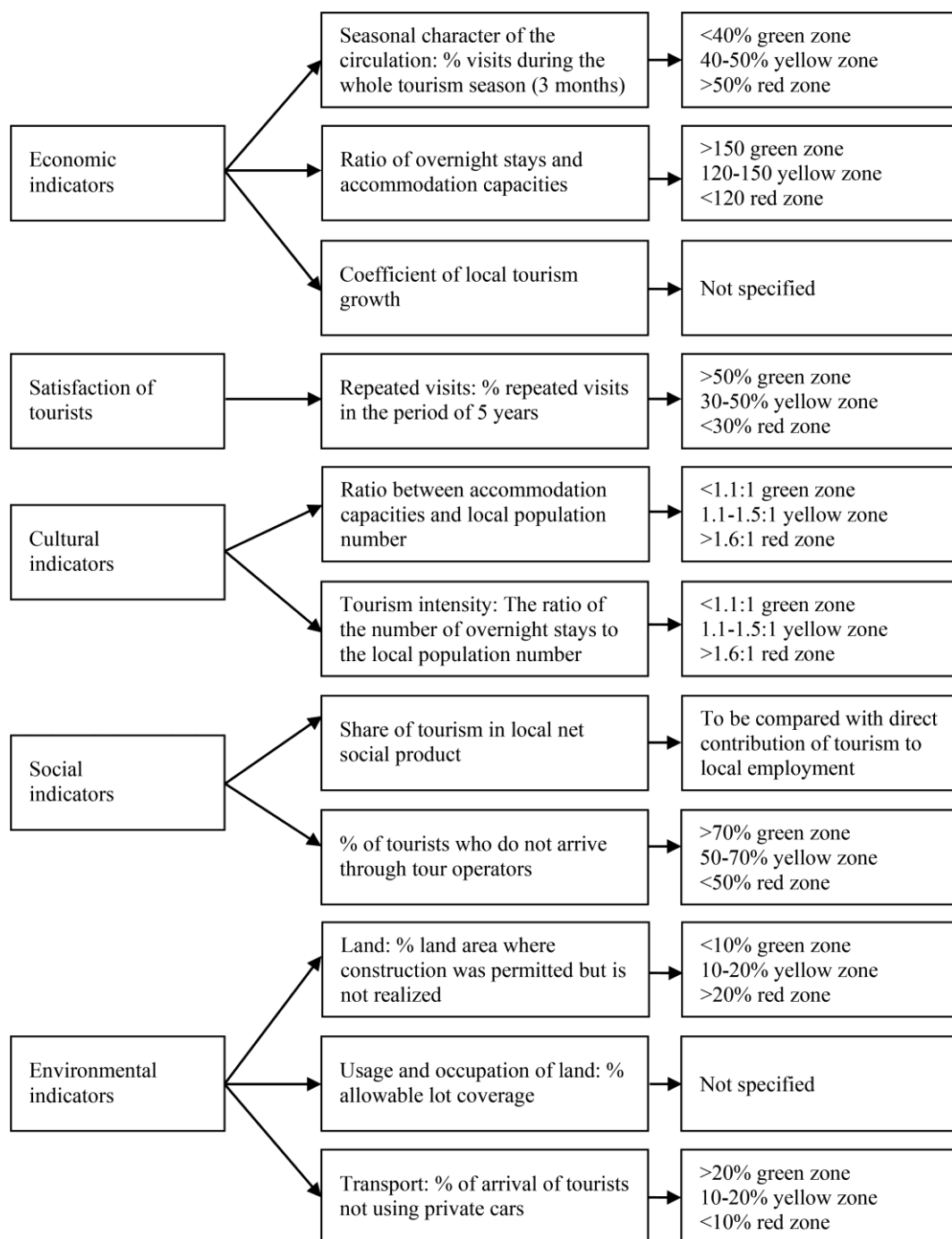


Figure 3 Sustainable tourism destination indicators (green zone-sustainable solution, yellow zone-relatively sustainable solution, red zone-unsustainable solution, coefficient of local tourism growth represents the impact of tourism on the development of the local economy).

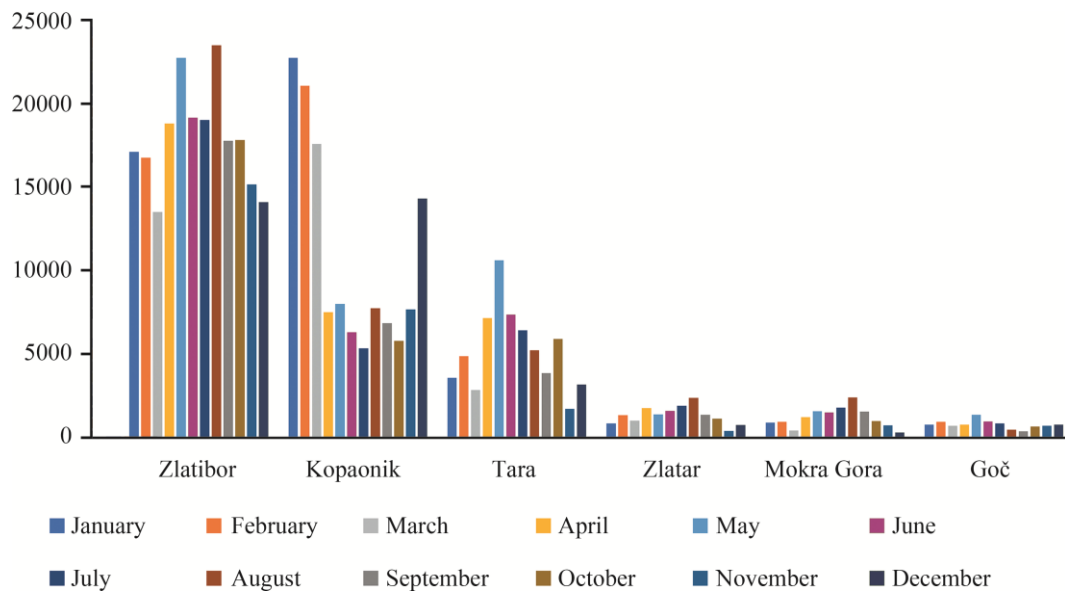


Figure 4 Number of tourists per month in selected mountains in Serbia, 2018.

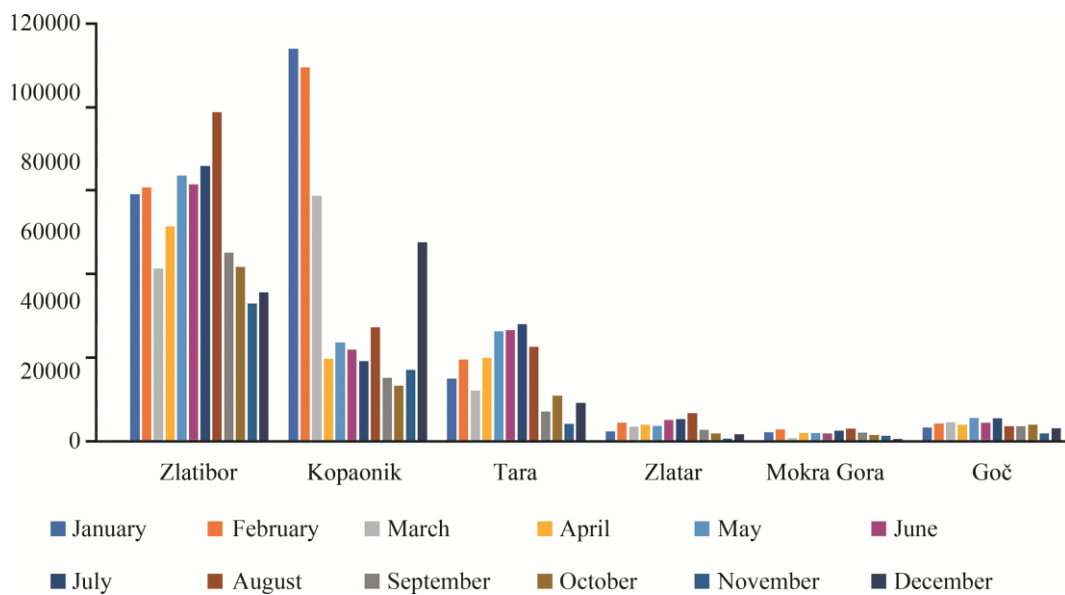


Figure 5 Number of tourists' overnight stays per month in selected mountains in Serbia, 2018.

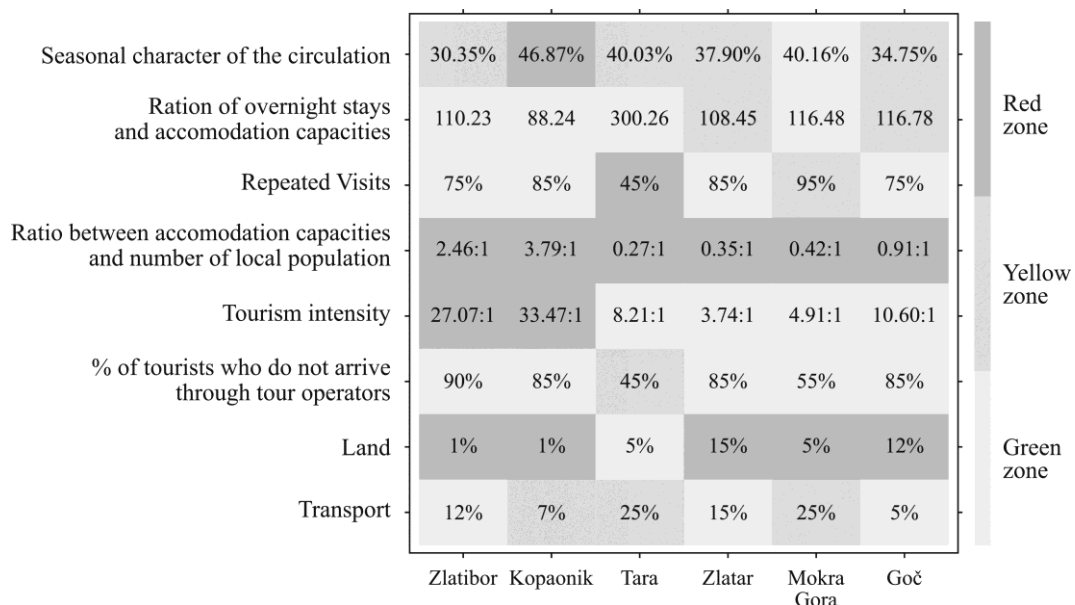


Figure 6 Sustainable tourism indicators of selected mountains in Serbia, 2018.

Table 1 Tourist arrivals and overnight stays per destination type in Serbia, 2018

Type of destinations	Tourist arrivals		Overnight stays	
	No. of tourists	% of tourists	No. of nights	% of nights
Urban destinations	1308638	38.15	2707776	29.00
Spa destinations	596884	17.40	2542391	27.23
Mountains destinations	596313	17.38	2172906	23.27
Other tourism places	769201	22.42	1539478	16.49
Other places	159486	4.65	373552	4.01
All destinations	3430522	100.00	9336103	100.00

Table 2 Tourist arrivals and number of overnight stays in selected mountains in Serbia, 2018

Mountain destinations	Tourist arrivals		Overnight stays	
	No. of tourists	% of tourists	No. of nights	% of nights
Zlatibor	217311	36.44	763867	35.15
Kopaonik	132080	22.15	535594	24.62
Tara	63356	10.62	241707	11.12
Zlatar	16157	2.71	50429	2.32
Mokra Gora	14565	2.44	27023	1.24
Goč	9591	1.61	57341	2.64
Other mountain destinations	143253	24.03	496945	22.91
All mountain destinations	596313	100.00	2172906	100.00

Table 3 Tourist arrivals and overnight stays per month in selected mountains in Serbia, 2018

Destination	Zlatibor		Kopaonik		Tara		Zlatar		Mokra Gora		Goč	
Month	No. of tourists	No. of nights	No. of tourists	No. of nights	No. of tourists	No. of nights	No. of tourists	No. of nights	No. of tourists	No. of nights	No. of tourists	No. of nights
January	17248	70762	22936	112455	3609	17974	872	2803	915	2589	801	3953
February	16898	72768	21249	107094	4913	23493	1368	5334	950	3351	955	5099
March	13625	49498	17722	70397	2892	14576	1021	4251	429	915	721	5397
April	18975	61571	7572	23692	7221	23883	1794	4760	1251	2335	801	4781
May	22937	76178	8081	28318	10708	31537	1401	4368	1602	2429	1390	6728
June	19330	73705	6358	26312	7434	31836	1631	6120	1524	2278	988	5349
July	19174	78846	5396	22984	6479	33626	1925	6335	1808	3059	859	6614
August	23688	94264	7825	32690	5276	27097	2405	8041	2439	3601	484	4315
September	17930	54110	6910	18245	3899	8546	1391	3339	1583	2437	382	4274
October	17975	49926	5844	15903	5969	13078	1154	2308	998	1849	684	4803
November	15299	39526	7740	20431	1744	5007	417	754	742	1539	734	2251
December	14232	42713	14447	57073	3212	11054	778	2016	324	641	792	3777
Total	217311	763867	132080	535594	63356	241707	16157	50429	14565	27023	9591	57341

Table 4 Number of beds and number of local population in selected mountains in Serbia, 2018

	Zlatibor	Kopaonik	Tara	Zlatar	Mokra Gora	Goč
Number of beds	6930	6070	805	465	232	491
Number of local population	2821	1600	2941	1348	549	541