

## SUSTAINABLE TOURISM IN THE PROTECTED AREAS OF BOSNIA AND HERZEGOVINA ON THE EXAMPLE OF THE NATURE MONUMENT "VRELO BOSNE"

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**Abstract:** *The hot springs of the Bosna River represent a wide fault zone in which where six larger and several smaller karst springs can be found. The catchment area of the Bosna springs are presented by the mountainous massifs of Igman and Bjelašnica, which are built primarily from thick limestone deposits. At the foot of these massifs, in contact with the Sarajevo field which represents the hydrogeological barrier, the specific hot spring zone is formed. Water in this area occurs in the shape of hot springs, surface watercourses and underground thermal mineral waters.*

*The Bosna hot springs have been under protection since 2006 when it was pronounced the monument of nature "Vrelo Bosne". The monument of nature is located in the Sarajevo Canton and it is under the protection of "PI Protected Natural Areas of the Sarajevo Canton" and it covers an area of 603 ha. The hot springs of the Bosna river is not the only monument of nature that's under protection of the canton, there are other protected monuments of nature like the "Skakavac" waterfall and the three protected landscapes: "Bijambare", "Trebević" and "Bentbaša". This area is also the main drinkable water resource for the city of Sarajevo (Bačevo water source) and it is a famous excursion site. Since 2014, entrance to the protected area has been charged and about 139,000 visitors were recorded in that same year. Since then, the number of visitors has been rapidly increasing and in 2016 there were over 190,000 visitors registered. The exploration area meets all planned goals of protection and sustainable development of protected areas in Sarajevo Canton and it represents an extremely positive example of sustainable tourism in protected areas of Bosnia and Herzegovina.*

**Key words:** *Bosnia and Herzegovina, Sarajevo canton, the city of Sarajevo, monument of nature, karst hydrography, protected area, sustainable tourism.*

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### 1. INTRODUCTION

Sustainable development is of great importance for numerous human activities, especially when it comes to modern tourism. It is also of great importance for the whole society, the economy and the natural and geographical environment. Sustainable tourism today is an important factor for the general development of tourism in any country, and in particular from the aspect of general economic development and increasing the standard of population [1]. Sustainable tourism in protected areas is of special importance for the self-sustainability of all forms of protected areas because standards in this area emphasize the importance of increasing space under any form of protection. The sustainability process must involve all participants in tourism trends and processes, which include the local community, the tourists themselves, tourism agents and travel agencies. Tourism and sustainable development are interrelated and dependent, because for tourism, resource sustainability represents the cornerstone of economic

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and social development [2]. The World Tourism Organization defines sustainable tourism as a resource management that contributes to economic, social and aesthetic needs, so that cultural integrity, basic ecological processes, biodiversity and systems based on life, create prosperity and well-being for the entire society, taking into account the needs of tourists and its hosts [3]. In brief, sustainable tourism meets the needs of tourists and local communities while simultaneously protecting the resources of future development. In order to be sustainable and successful in long-distance tourism, tourism must respect the basic principles of sustainable development and responsible tourism in its tourism planning. Otherwise, there may be a conflict between planned social development, which include the general development of tourism, and the development of tourism from the perspective of environmental protection.

Surfaces under some form of protection in Bosnia and Herzegovina are still significantly below the planned level of protection under the EU guidelines. Beside the three national parks (Una, Kozara and Sutjeska) there are several parks of nature, monuments of nature, protected landscapes and other spaces under some other form of protection. The Sarajevo canton as one of the ten Cantons of the Federation of Bosnia and Herzegovina is predominant in the process of separation of protected areas in Bosnia and Herzegovina, but still the share of protected areas in the total area is modest (about 2.43%).

## 2. RESEARCH AREA

Sarajevo Canton belongs to the central part of the mountain-valley area of the Bosnian-Herzegovinian Dinarides. As a result of complex geotectonic and geomorphological relations, several negative and positive morphostructural units have been isolated in the research area. The main morphostructures of the anticlinal type are "Igman" with "Bjelašnica", "Trebević" with "Jahorina", "Ozren" and "Treskavica". Among them there

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are the syncline types of morphostructures that are morphologically represented in the ravines and in the river valleys [4]. The largest and the most significant of them is the Sarajevo ravine (with the Sarajevo field as the lowest part), which is an integral part of the great Sarajevo-Zenica basin as the largest in the Dinarids of Bosnia and Herzegovina (region of Central Bosnia, which is one of the most heavily populated regions and most economically developed area). The hipsometric relationships of the investigated area indicate the exceptional vertical articulation (energy) of the relief with the lowest point in the Bosna valley in the village of Lješevno (440 m) and the highest peak at Bjelašnica (2068 m). Along with the complex relief and the geological relations, the explored space is characterized by complex geomorphological processes and marked georadicity. These complex processes have also influenced the hydrographic features of the Sarajevo Canton, where the backbone of the hydrographic network is made up of the "Bosna" river with many tributaries. In the far north, the catchment area of the Crna river (Krivaje basin) is especially separated, and in the far south of the exploration area there is a particular part of the river basin "Rakitnica" (the Neretva basin or the Adriatic basin). Within the Sarajevo field, as the lowest part of the Sarajevo ravine, a narrower exploration area is located in the Protected Area of the Nature Monument "Vrelo Bosne".



Fig.1.: Geographical location of the research area

In the Sarajevo Canton protected areas are managed by "PI Protected Natural Areas of Canton Sarajevo" and by the decision of the Cantonal Government as of 2010. On the total area of 1277 km<sup>2</sup> there are two monuments of nature currently under protection (Vrelo Bosne and Skakavac waterfall) and three protected landscapes (Bijambare, Bentbaša and Trebević). The plan is to protect the canyons and rivers of the river Miljacka upstream from Sarajevo (a part belonging to the Canton). For many years, the plan for protection of Igman, Bjelašnica and Treskavica (parts which are territorially belong to the Sarajevo Canton) is mentioned, but there is little that has been done in that regard.

The monument of nature "Vrelo Bosne" is located in the territory of Ilidža municipality and has a total area of 603 ha. In accordance with the degree of protection, two protected zones were identified within the monument itself. The first protected zone (nucleus) includes the "Bosna" river and its surrounding environment with an area of 54.5 ha. This zone was established with the aim of conservation of its biological and hydrological diversity, protection of special natural and cultural-historical sights and preservation of social and educational values [5]. In the first

zone of protection, the central object of recognizability is the Bosna riverbank zone at the contact of the waterproofed alluvium of the Sarajevo field on one side and the massive Igman limestone block with Bjelašnica, which basically represents the zone of replenishment of the water zone. In the wilderness area, there is about thirty larger and smaller single springs / hot springs. The hot spring zone is represented by water sources of contact type with a total yield of 5 to 24 m<sup>3</sup> / s [6]. The second protected (buffer) zone covers the broader river basin of Bosna, with an area of 548.5 ha. This protected zone has been established with the aim of preserving and protecting the biological and hydrological diversity, landscape cultural-historical, social and educational values as well as sustainable development of tourism and recreation [7]. What is also important to note that the wider area of the monument is the watertight area of the Sarajevo watercourse and where most of the population of the city of Sarajevo is supplied with water. The monument of nature "Vrelo Bosne" is today one of the main excursions for the citizens of Sarajevo and beyond. Within the protected area itself and in the immediate vicinity there are numerous natural and geographical objects that complement the tourists offer of the exploration area. These are the "Banja Ilidža" complex, the archaeological site "Vrutci", the tourist-recreational and excursion center "Stojčevac", the historical monument "Rimski Most" and the famous landscape parks "Velika i Mala aleja".

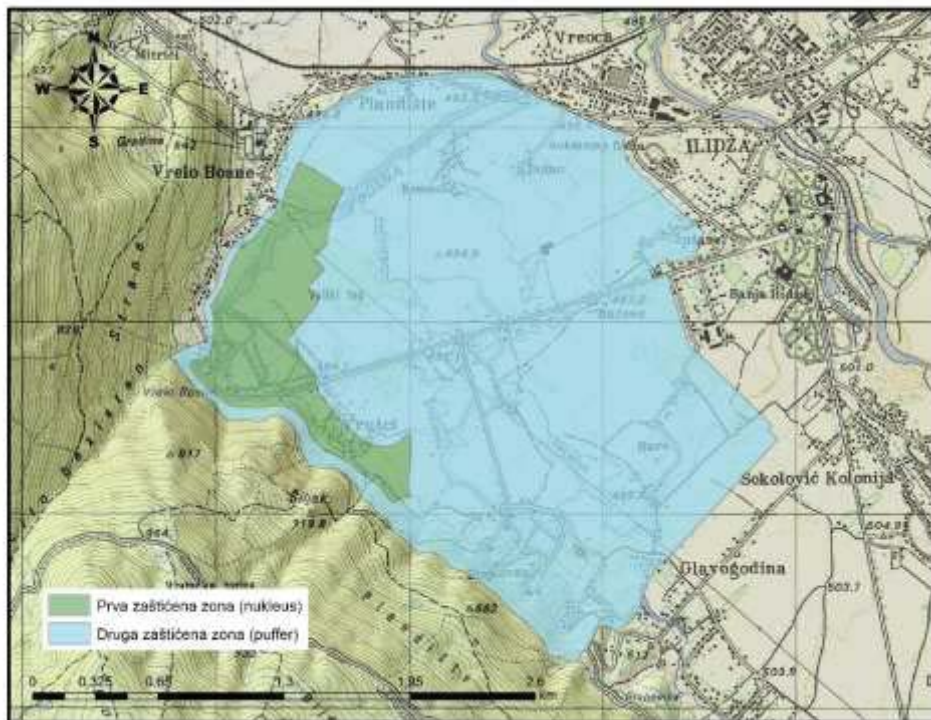


Fig. 2.: The boundaries of the monument of nature "Vrelo Bosne"

### 3. RESULTS

The protected areas of the Sarajevo Canton are primarily designated as areas of special purpose mainly due to their specific natural-geographical features. The largest protected area of the protected area is the Skakavac monument of nature (1431 ha), it represents the geomorphological and hydrological waterfall system of the Skakavac waterfall with its surrounding environment and it is one of the highest waterfalls in Bosnia and Herzegovina. It is located in the northern part of the Canton and in the last couple of years after its proclamation, it has become a recreational and educational area of excursions and recreation. The youngest protected area, the protected Landscape "Bentbaša" is also the area with the least of protection

in the Sarajevo Canton (161 ha), and is part of the upper valley of Miljacka upstream from the eastern edge of Sarajevo (Town Hall). It is a well-known excursion site, an old bathing resort on the Miljacka river and a recreational zone of complex geomorphological and hydrological features of this part of the exploration area. The protected landscape of "Bijambare" (497 ha) is located on the far north of the exploration area, in the northeastern part of the "Crnoriječka" plateau (between the mountains Zvijezda in the north, Ozren in the south and the Čemerske mountain in the west). The specific geomorphological phenomenon and attractiveness of this area, which have placed this area under this form of protection, are the specific karstic relief forms of the covered karst, and primarily caves, sinkholes and slopes [8]. This protected landscape is also one of the first protected areas in Bosnia and Herzegovina based on geographical diversity and geo-inheritance and it could be transformed into the country's first geopark in the future in accordance with the guidelines for the protection of these areas in the EU. The protected landscape "Trebević" (400 hectares) is part of the morphostructure of the Trebević mountain in the Sarajevo Canton with its significant features of geodiversity. For better protection, it would be necessary to put in place the entire morphostructure of Trebević (Olympic building), which would include parts in the Republic of Srpska entity.

The Protected Area Management Policy is contained in the documented plans of the Nature Conservation Plan "Vrelo Bosne". It is primarily based on the policy of preserving and enhancing the natural features of outstanding importance, preserving the quality of the environment and enabling the population living in and near the boundaries of the protected area to use natural resources in accordance with the goals of protection. The basic goals are set out in the Law on the Proclamation of the Bosna Nature Monument and are based on the protection of special natural / cultural values, the protection of biodiversity, the sustainable use of resources (especially water) and the generally sustainable development of the area in accordance with its natural values [9].

What is the situation like today? After the designation of the protected area in 2006, the procedure was started to inventory the natural and cultural values of the protected area and in general in the process of revitalization. Along with the making of the plan management, the spatial plan of the area "Vrelo Bosne" was adopted and a whole series of documents for the plan of protection and sustainable development of the space was made. Some of the documents are the newsletter of Vrelo Bosne and the news of sustainability. There are regulations of the traffic in and around the protected area, the sales and catering segment is regulated with the relocation of the stands outside the protected area, the parking lot, the improved tourist signalization, the area is connected with the surrounding facilities (especially connection with the Velika Aleja and Ilidža settlement), educational paths and significantly improved tourism marketing areas are in place and functioning. There are also significant positive changes in tourist infrastructure, which include guides, rangers, info points, propaganda material, regulated arrangement and restriction of places where people can organize picnics, souvenir sales and souvenirs, traditional gastronomy, transport of tourists (chariots and tourist vehicles), sports and children's playgrounds and many more. Since 2010, all protected areas in Canton Sarajevo are in the scope of "Cantonal Public Institutions for Protected Natural Areas of the Sarajevo Canton". The basic task of the public institution is to protect and preserve the original natural values, the diversity of the environment, the provision of undisturbed natural processes and the supervision of the implementation of conditions and measures of protection in protected areas. From 2014, an entry fee has been set for the Nature Monument "Vrelo Bosne" in the amount of 2KM (1 EUR) for adults and 1KM (0.5 EUR) for students, pupils, pensioners and large groups. It should be noted that children under the age of 6 and visitors with residence in Ilidža municipality (to which the protected area belongs) do not pay the entry fee. Ticket sales data

indicate the trend of increasing visitors from year to year. The first year of billing, the protected area was visited by 139 000 visitors, by 2015 188 000, and by 2016 190 000 visitors. Last year, the largest visit was made to 209 000 visitors with a paid card, and when children under the age of 6 were added, and Ilidža residents; it is assumed that in 2017. there were more than 250,000 people who have visited "Vrelo Bosne". Data from 2018 show 20% higher attendance in the first five months compared to 2017 [10].

The monument of nature "Vrelo Bosne" is the most visited protected area in the Sarajevo Canton. This is indicated by data from 2014 since billing has started in most protected areas in the exploration area. In the second place is the protected landscape "Bijambare". The monument of nature "Vrelo Bosne" is one of the most representative and most recognizable tourist motives in Canton Sarajevo and beyond. Current processes and tendencies indicate that this area has met most of the conditions from the aspect of sustainability with the strong synergy of the local community and other participants, and can be considered as the leader of the development of tourist areas in this part of Bosnia and Herzegovina. One of the problems encountered by this area is the apartment blockade along the boundary of the protected area. Namely, the Ilidža municipality has allowed significant construction in the area of the water protection zone of Sarajevo, which belongs to the protected area. The great pressure of investors in housing construction (especially from Arab countries), with the help of local administration, has led to significant anthropogenic pressure in this area. The archaeological site "Butmir" near the protected area was also under threat. The local community and NGOs are opposed to these pressures by concrete actions and petitions, and it is hoped that this damaging process will be halted in the future. The problem is also the disrepair of the Velika Aleja which is a link to the protected area with the Ilidža settlement and the lack of sanitary knots. From all of this, it is evident that the research space has great potential, but only with the option of continuous work on protection and self-sustainability. The perspective of tourist and sustainable development of this area should definitely go in the direction of green tourism. Green tourism is defined as a form of sustainable tourism that meets the needs of nature and the environment, the local community, entrepreneurs and tourists themselves [11]. The concept of green tourism includes programs that minimize the negative consequences of conventional tourism on the environment and increase the cultural integrity of the local community. The principles of sustainability of green tourism are reflected in its ecological, socio-cultural, technological and economic sustainability. Ecological sustainability is based on natural resources based on development, and socio-cultural sustainability is manifested in preserving the identity of culture, tradition and customs of the local environment (human resources as a cultural offer in tourism). Technological sustainability of green tourism primarily requires the use of technology in terms of its use in the use of renewable sources, reduction of pollution and recycling. Finally, economical viability provides an economically viable space while preserving natural and cultural features [12]. The exploration area, or the monument of nature "Vrelo Bosne" is the most sustainable and ecological and economical aspect of sustainability of green tourism, but there is still room for improvement. For complete ecological sustainability, the Bjelašnica and Igman morphostructures should also be protected as it represents the area of recharge of the Bosna riverbank itself. It is an extremely karstic area with specific features of karst hydrography. The application of modern technologies and applications in the research area is at a very low level and in the future the aspect of technological sustainability should be significantly increased. This includes socio-cultural sustainability and increased ecological education and awareness.

#### 4. CONCLUSION

The protected Area The Nature Monument "Vrelo Bosne" is the most visited protected area in the Sarajevo Canton and is ranked among the three National Parks in Bosnia and Herzegovina (Una, Kozara and Sutjeska). This area has a potential tendency to guide the tourist development of Bosnia and Herzegovina in the direction of sustainable green tourism, which encompasses ecological, socio-cultural, technological and economic sustainability. The indispensable participants of this sustainable process are the preserved environment, cultural heritage, local community, tourism workers, local administration and ultimately tourists themselves. The recognizability process must be continuous and must represent the synergy of all participants in the research area.

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