

GEOTOURISM IN BOSNIA AND HERZGOVINA - STATE AND DEVELOPMENT PERSPECTIVES

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Abstract: Geodiversity presents overall diversity of relief shapes, processes and the diversity of landscape. It basically consists of geological, geomorphological and pedological diversity. The most interesting for tourism valorisation are karstic areas that cover over 50% of the territory of Bosnia and Herzegovina. When it comes to geoparks, it is necessary to emphasize that such forms of protection have not yet been established in Bosnia and Herzegovina. The European Geopark Network exist since 2000 and currently there are 140 geoparks in the 38 countries in Europe. Three geoparks stand out in our region; in Slovenia, Idrija and Karavanke (together with part in Austria) and Papuk in Croatia. Their main goals are promotion of geoheritage, protection of geodiversity and support of economic development through geotourism, with the inevitable participation of local communities. In the meantime, this initiative has been raised to a global level by including these areas in the newly adopted UNESCO program - International Geodetic and Geopark Program, which now has over 130 parks in 33 countries of the world. In our country, Blidinje Nature Park and the Protected landscape of Bijambare, have potential for becoming geopark. These parks would be based on promotion of the geological heritage, the geodiversity of the karst zone of Bosnia and Herzegovina, preservation of biodiversity and the protection of specific karst hydrography of this area. The plan for protecting these areas and potential admission to the European geopark network should primarily be based on a new legal framework and a plan that would include sustainable development of geotourism in Bosnia and Herzegovina.

Keywords: Bosnia and Herzegovina, geodiversity, protected areas, geotourism, sustainable development

INTRODUCTION

An integral part of geotourism is geodiversity and geoheritage. Geodiversity is the overall diversity of relief forms and processes and the diversity of landscapes on the earth's surface and underground, including their characteristics, relationships and systems. It basically consists of geological, geomorphological and pedological diversity (biodiversity, geodiversity and pedodiversity). Geoheritage describes important elements of geodiversity and landscape diversity, which can be categorised according to its scientific, educational, educational, cultural-historical, economic and touristic significance. As products of the mentioned process of allocation of specific geospatis, geolocities and geoparks are distinguished. The

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most valuable element of geodiversity is geosite. It is the smallest and most basic type of site in the evaluation of geodiversity, and there are many different definitions. One of the most accepted of those definitions states that geosites are parts of a geosphere that are of particular importance for the understanding of the history of the Earth, that is, they are spaces of specific geological and geomorphological forms and processes that have scientific, cultural, historical, aesthetic and socioeconomic significance. The best definition of a geopark is given by the European Geopark Network, which implies that it is a space with well-defined boundaries that contains exceptional and specific elements of geodiversity and geobility, within which geotourism is developed in cooperation with the local community.

TERMINOLOGY AND THEORETICAL FRAMEWORK

In order to give a comprehensive picture of geotourism, it is necessary terminologically to look at all the constituent elements within the theoretical framework of geotourism. In addition to geodiversity, geosites and geoparks, we have a number of other elements related to this topic.

An inseparable part of the story of the protection of geonavers is landscape diversity. Landscape is a part of the space / land that develops in time under the influence of natural processes and human (European Landscape Convention, Florence, 2000). Landscape is the final product of differentiation of basic natural elements (geological structure, relief, soil, climate, water and vegetation), which are influenced by anthropogenic processes, primarily land use, and time is an essential element of transforming natural elements in space.

Natural diversity is today often misunderstood as meaning only biological diversity (biodiversity). Without geographical diversity, there would be no biodiversity in the form we know today. Therefore, the geographic approach to landscape research and natural diversity includes all natural elements and their interrelationships as interactions within the geographical envelope – this includes interactions between the lithosphere, the atmosphere, the hydrosphere, the pedosphere and the biosphere. The importance of geo-heritage / natural heritage was recognized by the United Nations in 1972, with the World Heritage Convention held in Paris. The UNESCO World Heritage Convention defines natural heritage as:

- 1) Natural phenomena composed of physical and biological forms of exceptional universal value from an aesthetic or scientific point of view
- 2) natural sites or precisely limited natural areas of exceptional value from an aesthetic, scientific or security point of view

Nature conservation can be defined as a set of strict measures and procedures to exclude negative anthropogenic impacts and to preserve extremely valuable parts of nature. The best example is strict reservation. Nature protection is a milder form of protection than nature conservation, and is a set of measures and procedures aimed at preserving the natural values of an area, which includes:

- 1) mitigating and preventing negative anthropogenic impacts
- 2) the restoration of damaged and devastated parts of nature
- 3) the sustainable use of natural resources

The basic, smallest and most valuable element of geodiversity, as stated in the introduction, are geosites. Geosites are characterized by certain, usually homogeneous geological and geomorphological characteristics, recognizable by forms that are a result of geological, physico-chemical, biological and anthropogenic factors that directly or indirectly influence them through geological and geomorphological processes. It is important to emphasize that these are spatial units that can be geographically quantitatively and qualitatively described. Essentially it can be a site or an entire landscape (geomorphological area). Examples include lonely rocks, peaks, small caves of less than 1000 m², polygonal geocities of more than 1000 m² and stripline geosites e.g. parts of the coast, river streams / troughs, structural slopes or large cave systems (where protection would mean both above and under ground). The evaluation of geodiversity is an extremely complex and comprehensive process that distinguishes five groups of values (Buzjak et al., 2017):

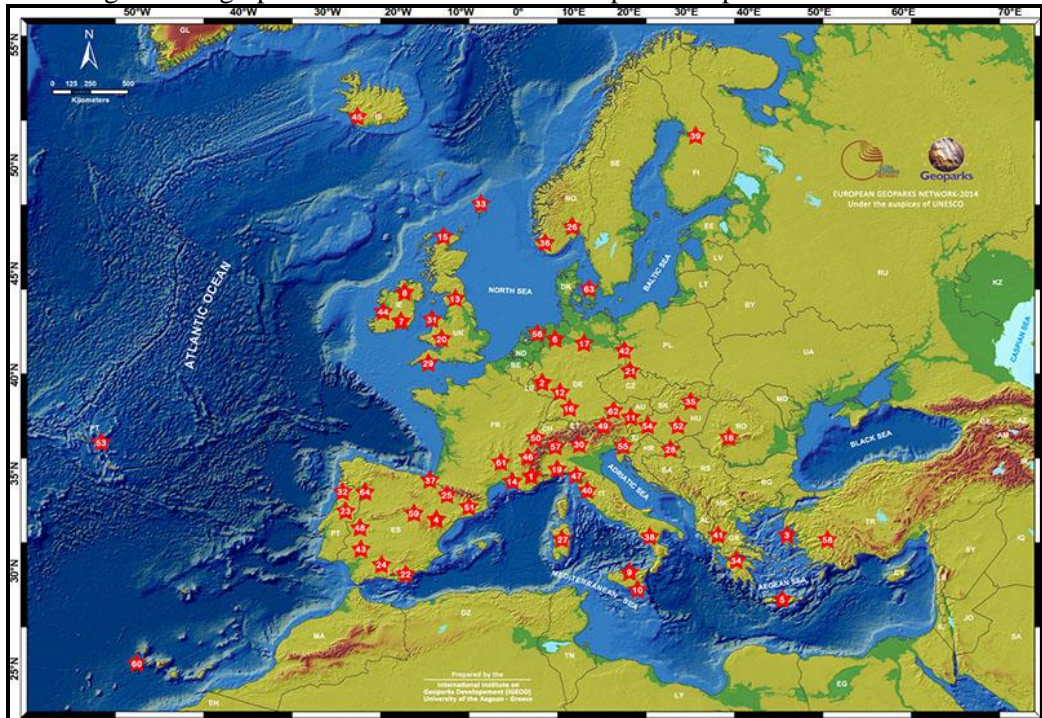
- 1) Real value:
"things" are valuable by themselves or valuable to people
- 2) Cultural and aesthetic value:
the value society gives to the physical and geographical features of the environment because of its importance for an individual or community. It has several levels: cultural value and "geomytology", archaeological and historical-geographical value, spiritual value, sense of belonging to the place, and aesthetic value
- 3) Economic Value:
e.g. The economic value or gain brought by tourism
- 4) Functional value:
determined by the role of geological and geomorphologic elements in the ecosystem and human society
- 5) Scientific and educational value:
geologic conditions favorable to scientific research and field observations

All of these values are an extremely important basis for the development of geotourism as an independent tourist product in addition to ecotourism, extreme sports tourism and the like.

UNESCO's specialized UN agency first introduced and elaborated on the concept of a protected geographic area.

The European Geopark Network was established in 2000 with the signature of representatives of four European countries (France, Greece, Spain and Germany) (Zouros-Martini, 2003). Today the European Geopark Network has 71 geoparks in 23 European countries.

Fig. 1.: Geographical distribution of the European Geopark Network



Source: <http://www.globalgeopark.org> (accessed 03.10.2018.)

In accordance with the Charter for the allocation of geoparks, it is stated that they need to (Gray, 2004):

- 1) Include one or more geosites of scientific significance for geology and geomorphology, as well as for archeology, ecology and culture;
- 2) Have a management plan that supports the sustainable development of geotourism and sustainable socio-economic development;
- 3) Provide resources for comprehensive education;
- 4) Being part of a global network.

The Charter goes on to further define geopark: The European geopark is not only a set of geosites, but also a territory with a specific geo-space and a self-sustaining territorial development strategy. Geosites must have a specific values of European significance in terms of scientific quality, rarity, aesthetic impression or educational value (Vasiljević, 2015).

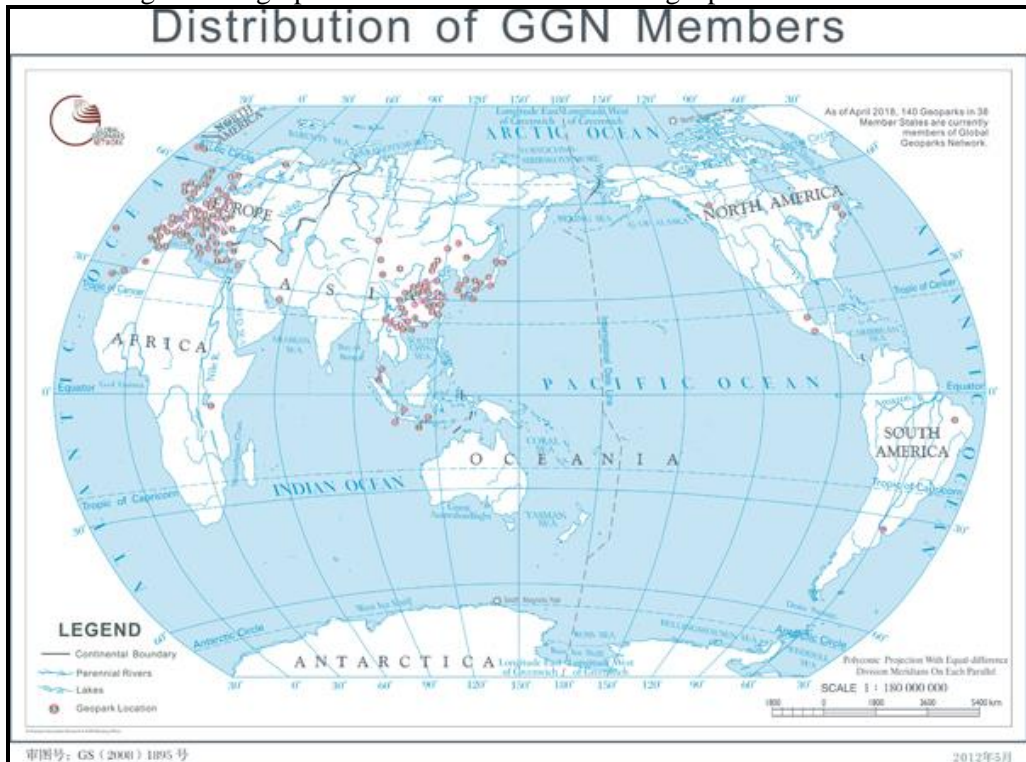
The World Geopark Network was established in 2004 with the significant support of UNESCO, and originally encompassed all geoparks that were previously established in Europe and China (Zouros, 2005). Today, the global geopark network is made up of 140 geoparks across the globe, with most of them in China (37). The initial founders were the first four geoparks from France, Greece, Germany and Spain, but geoparks (even one border) from this network are also found in Ireland, Italy, Austria, Great Britain, Romania, the Czech Republic, Portugal, Norway, Croatia,

Australia, Brazil, Malaysia, Iran, Japan, Canada, Finland, Hungary, Slovakia, South Korea, Vietnam, Poland, Iceland, Indonesia, the Netherlands, Slovenia, Turkey, Uruguay, Denmark, Morocco, Cyprus, Mexico, Belgium, Tanzania and Vietnam. In the founding Charter, three main objectives are highlighted (Zouros, 2005):

- 1) Conservation of a healthy environment
- 2) Global geological and geomorphological education
- 3) Encouraging sustainable local socio-economic development

The formation of geoparks and their networks at the European and world level is in direct relation to the famous UN Agenda 21 and its local community development philosophy. These segregated areas and tourism related ties represent a great opportunity for sustainable rural development through the reduction of unemployment rates and the reduction of migration to urban areas (Farsani et al., 2011).

Fig. 2.: Geographical distribution of the world geopark network



Source: <http://www.globalgeopark.org> (accessed 03.10.2018.)

The criteria that must be met for admission to the Global Geopark Network are extremely comprehensive and complex. Acceptance is primarily based on the:

- size and structure of the area,
- management of the area,
- participation of the local community,
- education and economic development,
- protection and conservation.

The Global Geopark Network provides a platform for cooperation and exchange between experts and practitioners on geodetic, geogeographic, geopark and, ultimately, geotourism issues. Under the common UNESCO roof and through cooperation with global networked partners, important local and national geosites gain world-wide recognition and profit through the exchange of expertise with other geoparks (Vasiljević, 2015).

Following this comprehensive terminological and theoretical introduction, the complex structure of the development and development of geotourism will be considered. The term "geotourism" is originally derived from the geologic tourism compendium, as it includes tourists looking at natural, geological and relief entities, including geomorphologic forms and specific rock complexes, as well as processes that have formed over time (Robinson, 2008). Today's modern concept of geotourism was first defined and developed in Great Britain, where the first world conference dedicated to geotourism (Belfast, 1998) was held (Robinson 2008) by Thomas Thompson. He provided the first official definition of geotourism: Providing interpretative content and services in order to enable tourists to acquire knowledge and understanding of geological and geomorphological sites (including the contribution to the development of geology) above the level of mere aesthetic experience (Hose, 1995).

RESULTS

Geotourism in Bosnia and Herzegovina is at its beginnings. The most interesting aspect for geotourism are karstic areas that cover more than 50% of the territory of Bosnia and Herzegovina, typically in highly attractive natural areas, especially on the karst borders of the outer Bosnia and Herzegovina Dinarides. The explicit geographical diversity of this area offers the possibility for tourist valorization of this area from the aspect of geotourism and complementary types of tourism.

All types of occurring karstic relief forms can be found in Bosnia. Spacious limestone masses are very cracked and do not contain water-resistant sediments on the surface, due to which abundant precipitation waters and sinks are undisturbed and enter the system of underground karst-cracks. The northern border of the Bosnia and Herzegovina karst is approximately on the line Bihac - the upper stream of the Sana River - Kupres - the upper stream of the Vrbas River and the Rama - south of Sarajevo - the upper stream of the Neretva River. North of this line is the area of "green" karst. A green karst is an incomplete karst in which karstic relief forms are not fully developed like they are in heavily karstified zones. Often there are

sinkholes, caves, pits and sinks, but scrubs, bays and karst fields are missing. River valleys in this area are most commonly developed in water resistant terrains.

The diversity of geological and geomorphological forms is the specificity of the karst of Bosnia and Herzegovina and represents the spaces in our country where potential geoparks are possible. The geosites of this and other areas in our country can be classified into levels of international, state, regional and local character, and it is interesting that in addition to the "developed" geosites, there are a whole range of facilities and locations that could be offered as excellent tourist attractions with expert assistance. There are currently 1,275.57 km² of area protected in Bosnia and Herzegovina which is 2.5% of the total area. There are slightly more areas in the Federation of Bosnia and Herzegovina (about 3.8%) than in the Republic of Srpska (about 1.2%).

According to the categorization of protected areas, the situation is diverse. The highest degree of protection has two strict nature reserves: the forests of Janj and Lom and two special nature reserves: Gromizelj and Lisina (mostly separated from the aspect of biodiversity). For the purpose of this paper, the most interesting areas are under the third degree of protection: monuments of nature. There are a total of 16 separate monuments of nature, among them dominant caves (10), cave facilities (1) and specific geomorphological-hydrological areas (5). From among the nature parks and protected landscapes (in total 5 areas with a fifth degree of protection), the nature park of Blidinje and the protected landscapes of Konjuh, Bijambara and Trebevic have been identified as oriented for geotourism.

Bosnia and Herzegovina is currently not in the European Geopark Network, which does not mean that there are no valuable geosites and potential spaces that meet the criteria for the separation of the protected geographic area. In Bosnia and Herzegovina, from the current protected areas, the biggest prospect of admission to this network is the Blidinje Nature Park and the protected landscape of Bijambara, and from the potentially protected areas the planned National Park Prenj-Čvrsnica-Čabulja. It is important to emphasize that all three areas are located in the karst terrains of our country (Blidinje and the Prenj-Čvrsnica-Čabulja area in heavily karstified zones).

The protected landscape of Bijambara was declared a protected area in 2003 on the area of 367 ha. The attractiveness of this area and the specific geomorphologic phenomena and karstic relief forms (primarily caves, sinkholes and sinks) are the reasons why this area is protected. In the area of Bijambara, nine speleological objects and two larger sinks were identified and adequately documented (Brodić and Bjelila). The cave system (a nucleus protected area) in this case represents fundamental geosites that have the potential to be converted into a geopark. Also, the wider area of the protected landscape of Bijambara attracts attention with its geological and relief elements (sinkholes, sinks, certain geological profiles) from the aspect of education and protection (Temimović et al., 2017).

The other two areas as examples of potential geopark protection will be analyzed together because they represent a single unit and must be taken as one geomorphologic-geological complex. Blidinje nature park connects from the southwest to the wider area of the potential national park Prenj-Čvrsnica-Čabulja. It was founded in 1995 as a Nature Park, and the primary object that served as the basis for

protection is Lake Blidinje (the largest natural lake in Bosnia and Herzegovina) located in the southeastern part of Dugo Polje (a field in Karst of High Herzegovina).

In the area of Prenj-Čvrstica-Čabulja, mountain Vran was added as an integral part of this area, which also ultimately included Dugo polje with the Nature Park Blidinje. The research area has now been identified as an area of importance for the Federation of BiH with the possibility of being declared as the National Park. According to the protection plan, the investigated area has an area of 994.5 km², which is about 1.9% of the territory of Bosnia and Herzegovina. The area of potential protection covers parts of six municipalities (Mostar, Konjic, Jablanica, Posusje, Tomislavgrad and Prozor-Rama) and three cantons (Herzegovina-Neretva, West Herzegovina and Canton 10).

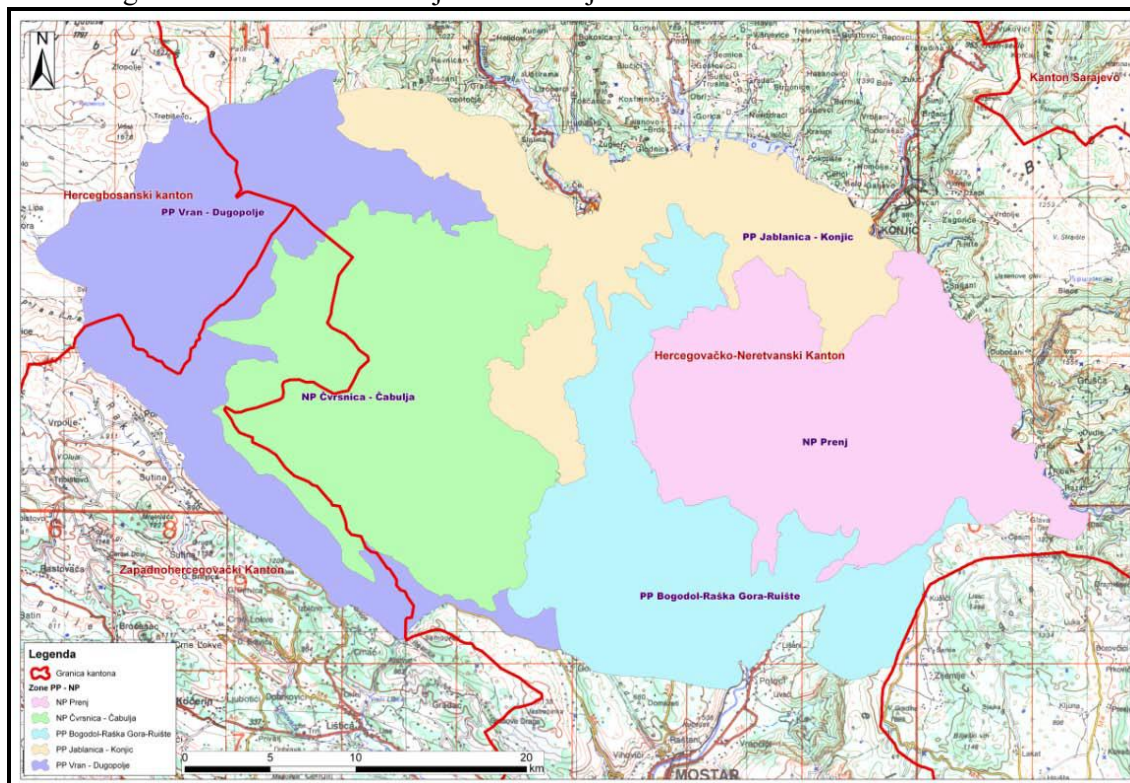
The procedure of determining the boundaries, categories and zone of protection within the investigated area identifies four ranks of protection:

- 1) zone of strict protection
- 2) active protection zone
- 3) in-use zone
- 4) transitional zones

In the context of the basic criteria for determining geopark, the most interesting is the first zone of strict protection defined as areas where scientific research (1a) is permitted, and those areas with minimal anthropogenic influences within which the restricted access of visitors is permitted (1b). According to IUCN, these areas are included in the categories of strict nature reserve and wildlife areas, which is the highest possible form of protection. The selected potential geosites within this category of protection are the morphostructures of Velika and Mala Čvrstica, Čabulje and Prenja, Veliki kuk-Zatamenje, Drežnica Canyon, Bogodol and four special forest reserves (Jelinak, southern Vran, northern Vran and Maska kuka-Boričevac).

A careful analysis shows that in the investigated area dominant geosites are based on geo and bio diversity. With the mentioned special forest reserves, specific geomorphological and geological relief forms are basic recognition. In addition to the mentioned mountain morphostructures, canyons and specific geological profiles (relief structural strands / cliffs), in the explored area, numerous geological parameters based on geodiversity can be distinguished. Primarily this refers to Diva Grabovica as a unique whole or as a special geomorphological reserve, the canyon of Drežanka and Doljanka, Dugo polje as the most important highland field in the karst of Bosnia and Herzegovina, parts of Neretva canyon, some lower plateaus of the investigated area, the hill and the hill of the larger mountain morphostructures, the areas of bottles and sculptures, the Hajduk Gate as one of the most recognizable motives of this area, which is an example of a window shape within the slope relief and all other geomorphologic and geological forms possessing scientific and aesthetic value and recognition.

Fig. 3.: Proposal of borders and categories of potential protection in the investigated area Čvrstica-Čabulja-Vran-Prenj



Source: Feasibility Study for the Protected Area of Čvrstica-Čabulja-Vran-Prenj, 2011.

From the aspect of geomorphological diversity, our area is exceptional. In particular, the diversity of karstic relief forms are among the most representative in classical karst. As typified in scientific literature, moderate classical karst is an integral part of the moderate width Mediterranean karst. Dinaric classical karst extends from Italy and Slovenia in the northwest to Prokletije in the southeast, and includes the Dinaric karst areas of Croatia, Bosnia and Herzegovina, Montenegro and Serbia. The potentially protected area Prenj-Čvrstica-Čabulja is one of the most representative in the Dinaric classical karst with the appearance and diversity of all exocrine and endocrine relief forms, including a specific karst hydrography.

What is the share of geotourism within tourism trends in Bosnia and Herzegovina? It is difficult to answer the question because there are no relevant statistics that capture tourism movements within this sector of tourism and do not record geotourists as such. Everything else is in the sphere of estimation, but when you look at the characteristics of geotourism and geotourism, it is evident that this specific type of tourism has an important standing in Bosnia and Herzegovina, and even today geotourists also participate in the overall tourism traffic. From all of the above, the basic characteristics of geotourism can be distinguished (Vasiljević, 2015):

- 1) Geotourism is based on georesources

- 2) Geotourism can take place in a natural and anthropogenic environment
- 3) Geotourism is significantly dependent on the achievements of the geosciences
- 4) Geotourism raises public awareness of the importance of geodiversity and geoheritage
- 5) Geotourism is a specialized form of tourism and is most often realized in smaller groups
- 6) Geotourism supports geoconservation
- 7) Geotourism is an integral part of tourism

The suggested areas, according to the authors, for geotourism in Bosnia and Herzegovina have all of the above mentioned, and especially the protected area Prenj-Čvrsnica-Čabulja. It is interesting that some smaller geosites in our country have individuality and they attract visitors. These spaces can be called geodestinations, and examples are earthy pyramids in Miljevina near Foca. Geotourism can take place on geosites (in-situ) or in built objects, often abandoned (ex-situ). It primarily refers to various natural museums, abandoned mines and quarries, and abandoned but preserved industrial facilities. They are not analysed in this paper, but, as an example, the abandoned complex of ironworks in Vares could be listed as a representative example of industrial complexes from the Austro-Hungarian period in this region.

Geotourism as a specialized type of tourism requires infrastructure resources: transport, accommodation, marketing, services, management, human resources and financial resources. The concept of geotourism can be divided into three essential elements: form, shape and tourism, where the first two are natural (geological and geomorphological), and the third is an anthropogenic element (Dowling-Newsome, 2006).

And finally, geotourists. The geotourist's typology is difficult to give, though it is discussed in contemporary scientific and professional literature. Initially (research from Great Britain) geotourists were divided into recreational, educational and commercial visitors / tourists (Besterman, 1988). Later, the author Hose sets out dedicated visitors / tourists (students and experts / specialists) and uninvited visitors / tourists (non-specialists and recreationalists) (Hose 2000). At the top of the various typologies and classification, there are "real geotourists". These are visitors, that is, tourists, who deliberately come to geosites in order to learn or expand their knowledge of geography. For them, the geotouristic offer is of extremely complex characteristics and includes information from scientific / professional papers and publications. According to them, the interpretation must be at the highest scientific level and divided into three groups (Hose 2000):

- 1) Geoamateurs: amateur knowledge of geography, but great interest in geography, geodiversity and geolocalities
- 2) Geospecialists: they possess high knowledge of geography, but they only show technical interest
- 3) Geoexperts: they possess top-level knowledge of geology and the highest level of information and interest for geosites / geodesy.

And from the typology and classification of geotourists, it is evident that geotourism will never have the characteristics of mass tourism, both in the world and in Bosnia and Herzegovina. The scientific component is the principal characteristic interest of all geotourists, regardless of whether it is at amateur level or at the highest scientific level.

CONCLUSION

The development of geotourism in Bosnia and Herzegovina should be considered only through the prism of a multidisciplinary approach involving related scientific disciplines, primarily geology (geology, geomorphology and related subdisciplines), ecology, history, archeology, biology, etc. Of course, one should not neglect cooperation with the local community and tourist organizations. Geotourism must be sustainable, both financially and through all other aspects involved in this process.

It is difficult to answer the question what is the share of geotourism within tourism trends in Bosnia and Herzegovina because there are no relevant statistics that capture tourism movements within this sector of tourism. Everything else is in the sphere of estimation, but when you look at the characteristics of geotourism and geotourism, it is evident that this specific type of tourism already has important standing in our country. In general, although Bosnia and Herzegovina, and especially its karst areas, has rich and diverse geological and geomorphological attractiveness, it still doesn't have developed geotourism destination. If we compare the conditions for the development of protection and geotourism in other European countries, Bosnia and Herzegovina, unfortunately, is not at an enviable level.

Literature:

1. Besterman, T. P. (1998): The meaning and purpose of palaeontological site conservation-Spec. Pap. In Palaeontology, No 40., Upssala, Sweden
2. Buzjak et al., (2017): Georaznolikost, geobaština i geoturizam Hrvatske-stanje i izazovi, Knjiga apstrakata međunarodnog znanstveno-stručnog skupa "Georaznolikost, geobaština i geoturizam u krškim područjima, Perušić, Hrvatska
3. Dowling, R.K., Newsome, D. (2006): The scope and nature of geotourism, Geotourism-sustainability, impacts and managements, Oxford, Butterworth-Heinemann
4. Dowling, R.K. (2008): The emergence of geotourism and geoparks, J Tour IX (2), Geoheritage, Springer, London
5. European Landscape Convention (2000): Council of Europe, European Treaty Series, No 176. Florence, Italy
6. Farsani et all. (2011): Geotourism and Geoparks as Novel Strategies for Socio-economic Development in Rural Areas, International Journal of Tourism Research, No 13., Bournemouth University, Bournemouth, UK
7. Gray, M. (2004): Geodiversity: Valuing and Conversing Abiotic Nature, John Wiley and Sons, University of Chichester, Chichester, UK

8. Hose, T.A. (1995): Selling the Story of Britain's Stone, Environmental Interpretation, Vol 10, No 2.
9. Hose, T.A. (2000): European Geotourism-Geological Interpretation and Geoconservation Promotion for Tourists in Barretino, Geological Heritage, Madrid
10. Hose, T.A. (2005): Geo-Tourism: Appreciating the deep side of landscapes, In: Novelli, M. (ed.) Niche Tourism-contemporary issues, trends and cases, Elsevier Science, Oxford
11. Konvencija o svjetskoj baštini (1972): Generalna konferencija OUN za prosvjetu, nauku i kulturu, Pariz
12. Robinson, A.M. (2008): Geotourism: Who Is a Geotourist?, Australia's 1st Conference on Green Travel and Climate Change is taking Shape, Adelaide
13. Studija izvodljivosti za zaštićeno područje Čvrsnica-Čabulja-Vran-Prenj (2011): Federalno ministarstvo okoliša i turizma, Bosna-S Sarajevo-Elektroprojekt Zagreb, Sarajevo
14. Temimović et. al. . (2017): Zaštićeni pejzaž/krajolik Bijambare-primjer zaštićenog područja Kantona Sarajevo u prostoru pokrivenog krša Crnorječke visoravni, Knjiga apstrakata međunarodnog znanstveno-stručnog skupa "Georaznolikost, geobaština i geoturizam u krškim područjima, Perušić, Hrvatska
15. Vasiljević, A. Đ. (2015): Geodiverzitet i geonasleđe Vojvodine u funkciji zaštite i turizma, Doktorska disertacija, Departman za geografiju, turizam i hotelijerstvo, Prirodno-matematički fakultet, Univerzitet u Novom Sadu, Novi Sad
16. <http://www.globalgeopark.org> (accessed 03.10.2018.)
17. Zaštita prirode-međunarodni standardi i stanje u Bosni i Hercegovini (2012): Udruženje za zaštitu okoline "Zelena Neretva", Konjic
18. Zouros, N. (2005): Assessment, protection and promotion of geomorphological and geological sites in the Aegean area, Geomorphologie: Relief, Processues, Environnement, No 3, Université de Lille, Lille, France
19. Zouros, N., Martini, G. (2003): Introduction to the European Geoparks Network, Proceedings of the 2nd European Geoparks Network, Lesvos, Greece