GEOTOURISM AS A FACTOR OF DEVELOPMENT OF MID-BOSNIAN SCHIST MOUNTAINS AREA (EXAMPLE OF FOJNICA MUNICIPALITY)

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Abstract

Mid-Bosnian Schist Mountains is an area of significant geological and geomorphological diversity and aim of this study is to analyse the possibility of the development of geotourism on the example of Fojnica municipality. Evaluation of natural and anthropogenic characteristics was conducted for selected old mines of the region since Fojnica has a long mining history. Results show that Bakovići mine has the greatest geotouristic potential. Further research should be directed towards the creation of a complete geotouristic product for both Fojnica municipality and the entire Mid-Bosnian Schist Mountains area.

Key words: Geotourism, old mines, Mid-Bosnian Schist Mountains, Fojnica

GEOTURIZEM KOT DEJAVNIK RAZVOJA SREDNJEBOSANSKEGA SKRILAVEGA HRIBOVJA (PRIMER OBČINE FOJNICA)

Izvleček

Srednjebosansko skrilavo hribovje je geološko in geomorfološko zelo raznoliko. V raziskavi smo analizirali možnosti razvoja geoturizma na primeru občine Fojnica. Izvedli smo vrednotenje naravnih in antropogenih značilnosti izbranih starih rudnikov na območju Fojnice, ki ima dolgo rudarsko tradicijo. Rezultati kažejo, da ima rudnik Bakovići največji geoturistični potencial. Nadaljnje preučevanje bo usmerjeno v pripravo celovitega geoturističnega produkta za občino Fojnica in za celotno Srednjebosansko skrilavo hribovje.

Ključne besede: geoturizem, stari rudniki, Srednjebosansko skrilavo hribovje, Fojnica

I INTRODUCTION

Geotourism, as a new form of tourism, emerged in the tourism literature during the last twenty years. The first attempt to define the concept of geotourism dates back to the early 1990s when T. Hose gave a definition that was based on geology and geomorphology. Newsome and Dowling (2010) define geotourism as follows: 'A form of natural area tourism that specifically focuses on landscape and geology. It promotes tourism to geosites and the conservation of geo-diversity and an understanding of Earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geosite visitor centers.' The best definition, in regards to this present work, is the one from Rybár (2010): 'Geotourism is tourism connected to a wide range of values of geosites (geological, geomorphological, petrological, mineralogical, palaeontological, etc.) plus the tourism related processes attached to them. Geotourism has also an explorative connotation. It frequently includes archaeology, art, architecture as well as mining related industrial activities.'

Within the researches related to the promotion and tourist valorization of geosites there is a great number of those dealing with the mining heritage, and that is how the concept of mining tourism emerged. Tourism related to the preservation and promotion of the mining heritage in abandoned mining areas and/or areas related to or dependent on mining can be called mining tourism.

Mining heritage includes natural (especially geological and geomorphological), historical, architectural, technological, technical, artistic and other aspects (Rybár et al., 2012). There are multiple possibilities of using abandoned mines for tourism purposes and Schejbal (2011) identifies the following ones. What will be applied depends on the individual site and its preservation:

- recreational use as a natural rest and relaxation area;
- use of artificial water bodies for sporting purposes;
- use of quarries for organizing motorsports, cycling and running events;
- climbing;
- natural science excursions;
- tours aimed at studying the technology of mining (surface and underground);
- use of underground space for therapeutic purposes.

Practice of using old mines for tourism purposes has long been recognized, and the most famous is Wieliczka mine in Poland. This mine is on the UNESCO list of natural and cultural heritage since 1978 and in 1994 it was declared as Poland's historical monument. Today, there is an ever growing interest in mining tourism from, at least, two aspects: on the one hand mining tourism is considered an action sport, an adventure, while on the other hand it gives the opportunity for tourists to get familiarized with the tools, technologies, ores and the way of life and work of miners (Rybár, Hvizdák, 2010). In most of the areas where mining activities were once concentrated, local communities now have to rely on tourist valorization of old mines to ensure further development. Therefore,

the development of tourist traffic is very important for those local communities. There is a great potential for cultural and historical monuments, educational routes and other tourist attractions, but they must be properly popularized and purchased (Teplická, Čuliková, Sőkeová, 2011). There are numerous instances of successful mining tourism, serving as examples how this kind of tourism can be a significant branch of tourism on both local and national level.

Due to its geological and geomorphological features, Bosnia and Herzegovina also has the potential for development of this type of tourism. The area of research (Fojnica municipality, located within the Mid-Bosnian Schist Mountains) was chosen because this is an area of significant geological diversity with many vestiges of old mining and smelting activities. Mining tunnels, groves, tailings and other vestiges serve as an evidence of long-lasting and vibrant mining and smelting activities in this area.

Considering all the above mentioned, the aim of this paper is to identify and introduce the most important ancient mines of Fojnica area whose evaluation could contribute to the enrichment of tourism in the municipality, but also ensure the preservation of traces of long-term mineral exploitation in this area. Assessment of old mines of Fojnica area was conducted on the basis of natural and anthropogenic characteristics of the selected sites.

2 RESEARCH AREA

Fojnica municipality is located in the central part of Bosnia and Herzegovina (Figure 1) and includes ranges of Vranica mountain in the west, Zec mountain in the southwest, Pogorelica mountain in the south and Zahor and Kruščica mountains in the north. The area is crisscrossed by numerous streams, with the major rivers Fojnica, Željeznica and Kozica.

In geological terms this area belongs to the Mid-Bosnian Schist Mountains which have a high degree of particularities if compared to other parts of the Dinarides in Bosnia and Herzegovina. Deposits of Paleozoic to Cenozoic age are present in the area (Figure 2), built of genetically diverse rocks: igneous, sedimentary and metamorphic. Metamorphic rocks are represented by dark green schists, followed by quartz-sericite schist, graphite-chlorite schists and phyllites, and quartzites, as well as marbles and metasandstones that appear in contact with rhyolites. Sedimentary rocks are represented by limestones and dolomites. Igneous rocks are also considerably widespread, mainly in the highest parts of the Vranica mountain. They are represented by the rhyolites or quartz porphyry.

Geology of the area is the main factor in the shaping of the relief of a wide area, including both lithological (mostly volcanic rocks) and tectonical characteristics (Mid-Bosnian Schist Mountains are bordered by large faults, but also dissected by a series of small ones). This area has a significant vertical relief diversity and according to their hypsometric characteristics, it is a mountainous area (share of the area above 1000 m is more than 55%). Several endogenous and exogenous factors (low temperature, ice, snow, denudation, and fluvial erosion) led to the creation of today's relief.

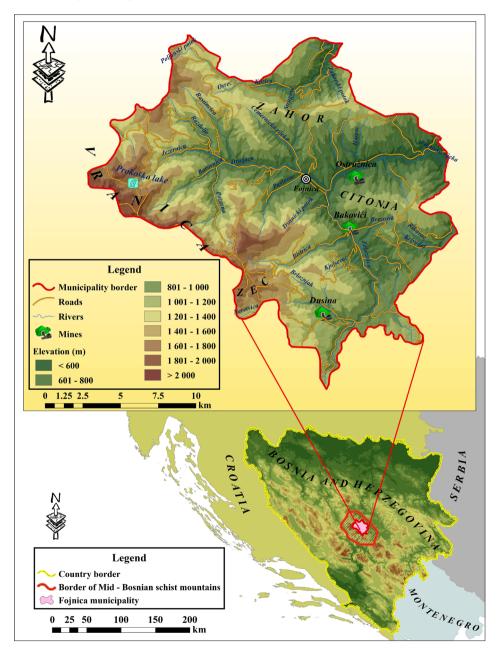
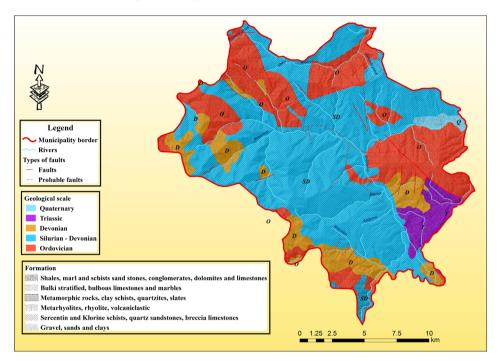
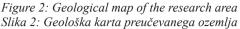


Figure 1: Geographical location of Fojnica and location of selected mines Slika 1: Geografska lega Fojnice in lokacije izbranih rudnikov





3 METHODS

Based on the analysis of the literature related to mines and mining of Mid-Bosnian Schist Mountains, those sites considered of having geotouristic potential were selected. Afterwards, in selected localities of former mining activities in the area of Fojnica, field research has been conducted. Preliminary field studies were published in the early spring of 2013 within which the following mining sites were identified (selected) for further processing: iron mine Dusina, gold mine Bakovići and silver mine Ostružnica. During further field surveys photographic documentation for the selected sites was collected. The maps used in the field work included topographic maps at the scale of 1 : 25 000 and geological maps at the scale of 1 : 50,000 and 1 : 100,000. The evaluation of collected field data was performed using a modified methodology of Rybár (2010) who developed a model for evaluation of value/attractiveness of geotouristic objects through two basic principles – natural and anthropogenic (Table 1). Each parameter was assessed with grades 0 to 8.

Table 1: The parameters of evaluation of value/attractiveness of geotouristic sites (Rybár, 2010) Preglednica 1: Parametri vrednotenja vrednosti/privlačnosti geoturističnih lokacij (Rybár, 2010)

Natural features	Anthropogenic features		
Primary geological properties	• Age of the object		
• Uniqueness	Historical value		
The accessibility of the object	Aesthetic value		
Existing scientific and technical literature	• Authenticity		
Conditions of observation (research)	Connection with the mining tradition of the place and its surroundings		
• Safety	Exceptionality/excellence		
Availability of existing data	Emotional value		
Visual value of the object	Utility value of the object		
Value of provided services	Provided services – options		
Site and tourist environment	• Safety		

Final evaluation of geotouristic potentials of selected mines was made as follows:

- score 0–3 (inconvenient / impossible): not suitable for tourist presentation and use (rank 3);
- score 3–6 (difficult / bad): partially suitable for tourist presentation and use (rank 2);
- score 6–8 (suitable / possible): suitable for tourist presentation and use (rank 1).

4 SELECTED MINES OF FOJNICA AREA

For this study, iron mine Dusina, silver mine Ostružnica and gold mine Bakovići were selected. They were selected because of geological characteristics of international significance, historical value, uniqueness, accessibility and their interconnections.

Ostružnica mine has been mentioned in documents from the 14th century (Drmač, 2012) and remained known as the oldest silver mine in Bosnia. Later, due to the frequent Ottoman invasions, mining activities have been relocated in the mountainous part (Deževice, Dusina) and thus significance of Ostružnica declined. Iron, copper and gold were excavated too, besides silver. Ore was found in parallel layers of slate rocks, and pits were right next to the river, or not too far from it, which made the exploitation much easier. More than 150 pits is mentioned in the literature while the toponyms in the Ostružnica area such as: 'Majdan' (= Mine), 'Jame' (= Pits), 'Zlatni dol' (= Golden Valley) all indicate a significant mining activity in the past. The most important caves are in the valley of Brloški creek (right tributary of the Fojnica river) at the foot of the mountain Citonja, 0.5 km southeast of the village Polje Ostružnica (Figure 1). Field research on the site showed that there are no significant remains of the former mining operations. Traces of mining have been largely destroyed by the exploitation of wood in this area. Construction of the trail for harvesting and extracting wood is the most prejudicial to the preservation of traces. The exploitation of forests also increased soil erosion, which caused the backfill of former shafts, although erosion had been present before.



Figure 3: Dusina mine (pits) Slika 3: Kopi v rudniku Dusina

Dusina mine is referred in the literature as the iron mine (descriptions of an old furnace, large hammers driven by water) while somewhat further from Dusina lead and silver were excavated in the so called Saxony pits. Jurković (1996) states how numerous ore occurrences were explored in the area of Dusina. Saxons used to dig caves in very solid rocks that were crisscrossed with mineral veins. One such cave was singled out for this study. The pit is located west of the Dusina village (Figure 1) and can be reached by the gravel road Dusina–Pogorelica or by challenging hiking trail. Traces of former mining activities are preserved on the site – entrance (window) to the former mine (Figure 3). The site has certain geotouristic potential such as rock outcrops, more pits nearby, and two caves (one is about 300 m east of Saxon pit and the other is about 400 m southwest of the village Dusina).

Bakovići mine is located on the southern slopes of the mountain Citonja, 4.5 km southeast of Fojnica (Figure 1). This mine was the largest gold producer in Bosnia and Herzegovina. Among other mineral resources, gold and silver are particularly well-known in this area, with the largest concentration of gold in oxides and pyrite quartz veins (Filipović, Nikolić, 2009). Production started in 1885 and ceased in 1939, with an interruption from 1918 to 1934. Filipović and Nikolić (2009) indicate that the surrounding tailings of processed ore still contain a certain amount of gold, which leaves the possibility of washing it. Mine includes several tailings and old undermines. Near the Bakovići tailings the entrance to the cave Juris has been established, which dates back to Roman times, and today it stands paved. There is another entrance near the Juris into the mine pit

from where the sulfuric water flows with a yellow precipitate which gets deposited and goes to the Željeznica River. Two more entrances to the pit were established on the other tailings. The first entry is sealed with stones, while the second one is preserved (Figure 4). An oak construction and several meters of underground corridors are visible at the second entrance. Sulfuric water comes out of this cave. The access to the mine is easy and it can be reached through the footpath from the village Bakovići.

Figure 4: Bakovići mine (sulfuric water and entrance) Slika 4: Rudnik Bakovići (žveplova voda in vhod)



5 RESULTS AND DISCUSSION

It is necessary to perform an evaluation of the attractiveness of selected geotourist sites if we want to develop geotourism. The methodology used in this paper (Rybár, 2010a) provides an opportunity to determine whether the selected site is a potential tourist object with dominant either natural or anthropogenic characteristics. The results obtained in this way represent the basis for the development of projects in geotourism.

Ten parameters were evaluated, and the results are shown in Table 2. The highest average score was met in the safety parameter (score 6.0), which means that no protective equipment for visiting the site is required. Dusina and Ostružnica sites got a lower score than Bakovići because of somewhat poorer accessibility that requires a slightly more physical effort to get to it. Three parameters got the average score of 5.6 (primary geological properties, the accessibility of the site, and the visual value of the site). The area of research, a part of the Mid-Bosnian Schist Mountains, has some significant geological particularities, while among the selected sites Bakovići gold mine stands out. This mine has the highest score when it comes to accessibility. The third parameter is used to assess the visual value of the site and its surroundings. With its beautiful views and mountain scenery Dusina mine stands out (Figure 5), while Ostružnica mine was rated with the lowest score. Three parameters have the score of \geq 4: existing scientific and vocational literature, uniqueness, and the conditions of observation (research). For all three parameters Bakovići mine has been assessed with the maximum score. Parameters used to assess the value of services that might be provided to tourists and the availability of information were rated with the lowest score.

After all ten parameters were evaluated, the average score for all three mines was 4.5. Bakovići mine has an average score of 6.5 which makes it suitable for touristic presentation. Dusina mine is partially suitable (score of 4.9), while Ostružnica mine is unsuitable for touristic presentation (score of 2.2) according to its natural characteristics.

Figure 5: Landscape of Dusina mine Slika 5: Pokrajina v okolici rudnika Dusina



Figure 6: Tailings of Bakovići mine Slika 6: Jalovina iz rudnika Bakovići



Mine	Ostružnica	Dusina	Bakovići	Average
Primary geological properties	3	6	8	5.6
Uniqueness	2	4	8	4.6
Accessibility of the object	5	5	7	5.6
Existing scientific and vocational literature	0	8	8	5.3
Conditions of observation (research)	0	4	8	4.0
Safety	5	5	8	6.0
Availability of existing data	2	2	5	3.0
Visual value of the object	3	8	6	5.6
Value of provided services	2	2	2	2.0
Site and tourist environment	0	5	5	3.3
Average	2.2	4.9	6.5	4.5
RANK	3	2	1	2

 Table 2: Evaluation of the natural characteristics of the old mines

 Preglednica 2: Vrednotenje naravnih značilnosti opuščenih rudnikov

Just like in natural characteristics, ten anthropogenic parameters were also evaluated and the results are shown in Table 3. Connection to the mining tradition was rated with the highest score (score of 7.0). A correlation with other old mining areas in Bosnia and Herzegovina (Kreševo, Srebrenica, Olovo) is noticeable as well as the interconnection between these three mines. Two parameters were evaluated with the average score of 6.6: the age of the site and historic value. Bakovići mine has been evaluated with the highest score since some remains from the ancient times were found here, while the other two mines belong to the medieval period. Safety of all three sites for sightseers is good and this parameter is rated 6.0. Four parameters (aesthetic value, exceptionality, emotional value, utility value of the object) were evaluated with an average score of 4.0. In these four parameters, the Bakovići mine has an average rating of 7.0, which indicates a great potential for the development of geotourism on this site. Gold panning might be established on the tailings of Bakovići mine (Figure 6). The lowest-rated parameters are those of authenticity and service capabilities because there are few well-preserved archaeological traces. Collapsed windows are visible, but it is not possible to visit the interior of the mine.

The average value of all three mines for all ten parameters is 4.9. Bakovići mine has the highest average rating, followed by Dusina and Ostružnica mines. The assessments of anthropogenic characteristics suggest that the only mine fully suitable for touristic presentation is Bakovići mine.

Mine	Ostružnica	Dusina	Bakovići	Average
Age of the object	6	6	8	6.6
Historical value	6	7	7	6.6
Aesthetic value	0	6	6	4.0
Authenticity	0	5	5	3.3
Connection with the mining tradition of the place and surroundings	8	5	8	7.0
Exceptionality	3	3	6	4.0
Emotional value	0	4	8	4.0
Utility value of the object	0	4	8	4.0
Provided services – options	0	4	6	3.3
Security	5	5	8	6.0
Average	2.8	4.9	7.0	4.9
RANK	3	2	1	2

 Table 3. Evaluation of anthropogenic characteristics of old mines

 Preglednica 3: Vrednotenje antropogenih značilnosti opuščenih rudnikov

The overall touristic value of the old mines of Fojnica in terms of natural and anthropogenic characteristics is 4.7 (Table 4). It is evident from the ratings that Bakovići gold mine has the greatest geotouristic potential (the average score of 6.8) and that it is suitable for touristic presentation and utilization. Dusina mine is partly suitable (score of 4.9), and Ostružnica mine is considered as unsuitable for touristic presentation and utilization (the average score of 2.5).

 Table 4: Values of assessment of natural and anthropogenic characteristics of old mines

 Preglednica 4: Rezultati vrednotenja naravnih in antropogenih značilnosti opuščenih rudnikov

Mines	Natural characteristics	Antropogenic characteristics	Overall mark
Ostružnica	2.2	2.8	2.5
Dusina	4.9	4.9	4.9
Bakovići	6.5	7.0	6.8
Average	4.5	4.9	4.7

6. CONCLUSION

The history of mining activities in the area of Fojnica can be traced back to the prehistoric times up to the 20th century. The exploitation of gold, silver, mercury, copper, iron, limestone, and dolomite was being performed which shows the diversity of lithological composition, and generally a high level of geological diversity of the area. After the termination of the exploitation the mines were (and still are) deserted. Due to the increasing popularity of nature-based tourism and the emergence of geotourism as a new tourist segment the question arises: whether the current state of the mines could be used for tourism purposes and for additional tourist affirmation of Fojnica? The results of the evaluation of natural and anthropogenic characteristics of the three selected mines (Ostružnica, Dusina and Bakovići) show that the overall score of assessment of the touristic value of old mines is 4.7 and that selected mines are partially suitable for touristic presentation and utilization. According to the individual assessments, the results show that Bakovići gold mine possesses the largest geotouristic potential and that it is the most suitable for touristic presentation and utilization (the average score was 6.8). Dusina mine is partially suitable with a score of 4.9, but Ostružnica mine is considered unsuitable for touristic presentation and utilization with an average score of 2.5.

Our results suggest that Fojnica municipality has the potential for development of geotourism based on mining and geological heritage and that further research and activities should be focused on creating integrated geotouristic products which may include geological tours (geotrails of various lengths), recreational gold panning, an educational center with geological and mining facilities, and similar activities. Great potential also lies within connection with other mining areas within the Mid-Bosnian Schist Mountains (e.g. Kreševo municipality).

References

- Drmač, M., 2012. Srednjovjekovna Ostružnica. Fojnička škrinja, 19, p. 18–19. URL: http://www.fojnica-samostan.com/fojnicka_skrinja/Fojnicka_skrinja_broj_19.pdf (Cited 25. 8. 2014).
- Filipović, A., Nikolić, T., 2009. Nove analize zlatonosne rude iz ležišta u Bakovićima. Rudarsko-geološki glasnik, 13, p. 95–102. URL: http://www.geologija.ba/index.php?option=com_docman&task=doc_download&gid=52&Itemid=75 (Cited 25. 8. 2014).
- Hose, T., 2008. Towards a history of geotourism: definitions, antecedents and the future. Geological Society, London, Special publications, 300, p. 37–60. DOI: 10.1144/ SP300.5
- Jurković, I., 1996. Barite, hematite and cinnabar ore deposits in the Dusina area, Mid-Bosnian Shist Mountains. Rudarsko-geološko-naftni zbornik, 8, p. 51–65. URL: http://hrcak.srce.hr/file/20813 (Cited 25. 8. 2014).
- Newsome, D., Dowling, R. (Eds.), 2010. Geotourism: the tourism of geology and landscape. Oxford, Goodfellow Publishers, 320 pp.
- Rybár, P., 2010. Assessment of attractiveness (value) of geotouristic objects. Acta geoturistica, 1, 2, p. 13–21. URL: http://geotur.tuke.sk/pdf/2010/n02/02_Rybar_v1_ n2.pdf (Cited 25. 8. 2014).
- Rybár, P., Hvizdák, L., 2010. Information technologies and mining tourism. Acta geoturistica, 1, 1, p. 12–24. URL: http://geotur.tuke.sk/pdf/2010/n01/02_Rybar_v1_n1.pdf (Cited 25. 8. 2014).

- Rybár, P., Molokáči, M., Hvizdák, L., Štrba, L., Böhm, J., 2012. Territory of Eastern Slovakia – area of mining heritage of mediaeval mining. Acta geoturistica, 3, 2, p. 29–35. URL: http://geotur.tuke.sk/pdf/2012/n02/04_Rybar_v3_n2.pdf (Cited 25. 8. 2014).
- Schejbal, C., 2011. Possibilities of using of abandoned mining sites in tourism. Acta geoturistica, 2, 2, p. 17–25. URL: http://geotur.tuke.sk/pdf/2011/n02/03_Schejbal_v2_ n2.pdf (Cited 25. 8. 2014).
- Teplická, K., Čuliková, K., Sőkeová, E., 2011. Mine workings in area of Gemer as a tool for development of tourist traffic. Acta geoturistica, 2, 1, p. 16–22. URL: http://geotur. tuke.sk/pdf/2011/n01/03_Teplicka_v2_n1.pdf (Cited 25. 8. 2014).

GEOTURIZEM KOT DEJAVNIK RAZVOJA SREDNJEBOSANSKEGA SKRILAVEGA HRIBOVJA (PRIMER OBČINE FOJNICA)

Povzetek

Številne raziskave na področju geoturizma se ukvarjajo z rudarsko dediščino. Za vključevanje opuščenih rudnikov v turistične namene obstaja več možnosti (rekreacija, priprava tekmovanj, poučevanje, terapevtski nameni idr.), katere od njih pa bodo izkoriščene, je odvisno od posamezne lokalitete in njene ohranjenosti.

Zaradi geoloških in geomorfoloških značilnosti ima Bosna in Hercegovina velike potenciale za razvoj te vrste turizma. Območje te raziskave (občina Fojnica znotraj Srednjebosanskega skrilavega hribovja) smo izbrali ravno zaradi dejstva, ker ima pomembno geološko diverziteto s številnimi ostanki stare rudarske in talilniške dejavnosti (pridobivali so zlato, srebro, živo srebro, baker, železo ter apnenec in dolomit). Po koncu rudarjenja je sledilo obdobje, ko so rudnike opustili in takšni so ostali do danes. V članku so predstavljeni najpomembnejši stari rudniki v občini Fojnica, ki bi s ponovno valorizacijo lahko prispevali k obogatitvi turistične ponudbe občine, z njo pa bi tudi zavarovali sledove dolgoletnega pridobivanja rud na tem območju.

Na osnovi zgodovinskih virov in terenskih raziskav smo za nadaljnje preučevanje izbrali rudnik železa Dusina, rudnik zlata Bakovići in rudnik srebra Ostružnica. Zaradi geoloških značilnosti so te lokalitete mednarodno pomembne, prav tako zaradi zgodovinske vrednosti, edinstvenosti, dostopnosti in njihove medsebojne povezanosti. Vrednotenje starih rudnikov smo izvedli na osnovi njihovih naravnih in antropogenih značilnosti s pomočjo desetih parametrov. Vsak parameter smo ovrednotili z oceno od 0 do 8, nato pa smo na osnovi dobljenih rezultatov rudnike razvrstili v tri kategorije: neprimeren, deloma primeren in primeren za turistično predstavitev. Uporabljena metoda omogoča določiti, ali je izbrana lokaliteta potencialni turistični objekt s prevladujočimi naravnimi in antropogenimi značilnostmi.

Rezultati vrednotenja naravnih in antropogenih značilnosti treh izbranih rudnikov kažejo, da je skupna ocena turistične vrednosti starih rudnikov v Fojnici 4,7 in da so izbrani rudniki deloma primerni za turistično predstavitev in koriščenje. Posamične ocene kažejo, da ima rudnik zlata Bakovići največji geoturistični potencial in da je najustreznejši za turistično predstavitev in koriščenje (povprečna ocena 6,8). Rudnik Dusina je z oceno 4,9 delno primeren, rudnik Ostružnica pa je s povprečno oceno 2,5 neprimeren za to.

Rezultati preučevanja kažejo, da ima občina Fojnica možnosti za razvoj geoturizma na podlagi rudarske in geološke dediščine. Nadaljnja preučevanja in aktivnosti bi bilo treba usmeriti v oblikovanje celovitega geoturističnega izdelka, ki bi lahko vključeval različno dolge geološke poti, rekreativno izpiranje zlata, izobraževalno središče z geološkimi in rudarskimi vsebinami in podobne aktivnosti. Velike možnosti so tudi v povezovanju z drugimi rudarskimi območji znotraj Srednjebosanskega skrilavega hribovja (npr. z občino Kreševo).

(Prevedel K. Natek)