

## Geotourism and sustainable development in Skrapar

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### ABSTRACT

Skrapar region has a great number of geomonuments, such as canyons, caves, waterfalls, karstic landforms, valleys, etc. On the other side this region is one of the poorest of the country where the population has limited resources to live and the unemployment rate is high. These last years this almost forgotten region is developing geotourism thanks to the presence of a great number of geomonuments, especially the canyons. Geotourism development is encouraging local people to improve the services and the government to invest in the infrastructure. However, these geomonuments are not known enough yet due to the lack of information or poor promotion. Valorisation of the geomonuments and better promotion will stimulate geotourism development, what will have a significant impact on sustainable development of this region. The paper is aimed to describe the geotouristic values of the geomonuments, with the aim to promote geotourism in this area.

**Key words:** Geomonument, geotourism, valorisation, promotion, sustainable development.

### INTRODUCTION

Skrapar region lies almost totally in the Southern Mountainous Region of Albania, on the north east of this geo-physical region. It is bounded by the valley of Tomorr (branch of Devoll River) on the northeast, valley of Osumi on the southeast and southwest and the northern mountain foot of Tomorr. Within this area it has numerous impressive geological and geomorphological features besides rich cultural heritage.

Although very rich in geomonuments, Skrapar was not known of any touristic attraction until 1990. The promotion of the great touristic values of these geomonuments and their declaration as protected sites increased the interest of tourists to visit them. Their scenery beauty and water sports have attracted many tourists, whose number is continuously increasing, and some travel agencies have included these geomonuments in their tours. Geotourism development in this

region is resulting into the creation of the touristic infrastructure, promotion of the natural and cultural heritage of the area, increase of the employment in the tourism sector, increase of the land price, development of the local bio products, etc. However, there is still a great need to highlight geoheritage of Skrapar and include it in the touristic map of Albania and Skrapar. Rare geosites features of this region have scientific, educative and recreative values, which need to be valorised, protected, preserved and promoted.

### GEOLOGY AND RELIEF

The lithology of the territory of Skrapar is represented by the limestones of cretack and paleogen and flysch of eocen-oligocen. The carbonatic structure belongs to Kruja tectonic zone (Akademia e Shkencave, 1990a), whose characteristic is the development of the karstic landforms.

Flysch deposits of Krasta-Cukal tectonic zone are characterised by degraded and smooth landforms. Current mountainous landform of Skrapar is attributed to the new alpine tectonic uplift, especially during the quaternary with 1500-2000 m amplitude (Aliaj, 2012). The mountainous relief of this territory is represented by the mountain range Tomorr-Kulmaka-Miçan, with predominant altitudes 1200-2000m, reaching up to 2416 m (Mountain of Tomorri) (Akademia e Shkencave, 1990b). The alpine shapes create morphological contrasts with the deep river valleys creating stunning landscapes.

Rivers have followed the continuous tectonic uplift of the limestone structure, deepening their valleys and creating impressive geomorphological shapes such as canyons. Tomorrca River flows on the synclinal structures, but Osum River cuts transversally the antycline of Miçan, in the sector between Nikolara and Malindi, creating the grand canyon of Miçan of about 6 km long and 120-150m deep. The other Canyon of Osum River is created along the axis of the limestone anticline of paleogen, having almost the same length and width with this structure (about 12 km long, 30-50 m deep and 20-35 m wide). The canyon of Gradec is formed by Çorovoda stream cutting transversally the limestone antycline of Kulmak-Miçan following also a tectonic fault close to the periclinal closure of this structure.

The tectodynamic conditions have stimulated the regressive river erosion especially on the flysch deposits, creating degraded lands which are situated mainly in the upstream of Tomorrca and along Osum River, such as the bad land “Bokërrimat e Tomorricës”.

On the mountain of Tomorri, karstic landforms are the evidence of the process of karst on the limestone of cretac and glacial cirques and moraines are the testimony of the glacial of quaternary on this territory. In the mountain range Tomorr-Kulmak-Miçan the development of the underground karstic processes are evidenced by the presence of

numerous water springs such as Springs of Bogova, Ujaniku, Guaku, Sotira, which flow in the periphery of this mountain block along the lithological contact of limestone and flysch.

## **VALORISATION OF THE GEOMONUMENTS OF SKRAPAR**

Geomonuments are natural monuments with particular aesthetic, ecological and touristic values, which are protected by law being classified in the third category of monuments of nature of the International Union for Conservation of Nature (IUCN). Thanks to the efforts of geologists, geographers, ProGeo members, etc., 291 geosites of Albania, or 41% of the monuments of nature, are listed on the list of the protected areas, in the third category, so called geomonuments. Some of the most important geomonuments of Albania are located in Skrapar region such as the Canyon of Osum (the longest canyon of Albania), Canyon of Gradeci (significant for its depth), Cave of Pirrogoshi (the longest cave in Albania), glacial cirques of Tomorri, moraines of Ujanik, etc. The canyons and the cave are the main touristic attractions in the region due to many reasons, but mainly due to their accessibility. The valorisation of the geosites of Skrapar for their geotourism potential is made based on the criteria according to Knapik, et al, modified by Anna Solarska and Zdzisław Jary (Solarska & Jary, 2010).

The fixed criteria allows making a statement of every object significance for scientific research and study of their geotouristic and educational functions (Solarska & Jary, 2010). The results of valorization proved the existence of a significant geotouristic potential of geomonuments of Skrapar. Three of 16 evaluated geosites resulted with highest potential for geotourism.

Two of the geomonuments have average to high scientific value (canyon of Osum and canyon of Gradeci). One of them is

**Tab. 1** Criteria of assessment for inventoried geomonuments (according to Knapik, et al., 2009, modified)

Criteria	Traits	Points
Accessibility	Site clearly visible, located directly on the touristic trail or nature's path	5
	Site clearly visible, located on the road or path	4
	Site barely visible, located more than 250 m away from the path or road	3
	Site difficult to access for tourist (ex. significantly overgrown or difficult to access)	2
	Site unavailable for tourists	1
State of preservation	Well preserved site with no visible signs of degradation	5
	Site in slight violation of its structure	4
	Partially destroyed	3
	Site heavily modified by human	2
	Site destroyed - loss character of geosites	1
Scientific worth	Very high: one site in the region, unique in a wider scale	10
	High: very important for regional studies	8
	Average: significant for regional research	6
	Low: common site with average values	4
	Very low: no particular distinctive features	2
Education	Very high: number of represented issues: 5 and more	10
	High: number of represented issues: 4	8
	Average: number of represented issues: 3	6
	Low: number of represented issues: 2	4
	Very low: number of represented issues: 1	2

clearly visible and is located directly on the road trail (Canyon of Osum). Two of them are well preserved with no visible signs of degradation, especially Canyon of Gradec, which is naturally protected (difficult terrain). Cave of Pirrogoshi is barely visible and located more than 250 m away from the road. However it is in slight violation of its structure due to irresponsible visitors who prefer to cut stalagmites and stalactites from the walls of the cave. All three of them have high education values, although people are not aware of their values. People visit these sites mainly for water sports or esthetic values. Other geosites have also high scientific value such as the glacial cirques of Tomorri, Moraines of Ujaniku, Neck of Kulmaku, Bokërrimat e Tomorricës (bad lands of Tomorrica), but these sites are difficult to be accessed by tourists, for they are located in difficult terrain and high altitudes.

### Canyons of Osum River

Osum River has formed two big canyons, that of Miçan and that of Osum. This river has deeply cut the carbonatic anticline structure of Qeshibeshi forming the great canyon of Miçan, which lies in the borderline of Skrapar municipality, belonging to Përmet Municipality. But the longest canyon of Osum is situated in the sector Çorovodë-Hambull of the valley. This canyon is 12 km long, 4-35m wide and 70-80 m deep. The canyon has deep vertical slopes and is formed in the limestone rocks of Paleogene, which are covered by the flysch rocks of Oligocene. Along the canyons some waterfalls of multi step type fall from high altitudes creating rainbows such as the waterfalls of Çerenisht, Zogas, Kalanjas, Dhores, Pigas and Blezënckë. On the vertical walls of the canyon there are

**Tab. 2** Valorisation of geosites of Skrapar

Nr.	Geomonument	Criteria				
		Accessibility	State of preservation	Scientific values	Education	Summarised value
1	Canyon of Osum	5	5	6	8	24
2	Canyon of Gradec	3	5	6	8	22
3	Cave of Pirrogoshi	3	4	4	8	19

small caves and other karstic forms. One of them is “Vrima e nuses” which is a small karstic cave in a gallery shape of 7-8m long and about 2m diameter. The picturesque view of the canyons can be clearly seen from the bridge close to Blezënckë village, where the canyon has the narrowest width. Along the valley and the road nearby there are a lot of cold water springs.

The canyon is also an interesting ecosystem with rich biodiversity. On the slopes of the canyon grow oak and herbal vegetation and many birds like wild pigeon, merlin and sparrow have their nests. Osum River is also the habitat for some species of fish, reptiles and amfibes.

### **Canyon of Gradec**

Canyon of Gradec is situated three km on the north east of Corovoda town. It is formed by the stream of Corovoda in the southeast edge of the karbonatic anticline of Kulmaka. The transversal throat of Gradec is formed by Corovoda stream terthor the limestone antycline Kulmak-Miçan following also a techtonic fault close to the periclinal closure of this structure. Canyon of Gradec is very deep and narrow. Its vertical slopes of up to 300 m altitude are very close to each other in a distance from 2-3 m and 10-15m. The canyon can be clearly seen in the middle level of the structure, on the road to the Neck of Devrije. From the road it is about 250 m walking distance in a relatively difficult terrain.

### **Pirrogoshi cave**

Pirrogoshi cave is one of the most interesting geomonuments of Skrapar. It is situated on the right slope of the Canyon of Gradec, on the limestones of Cretac. This cave has been a water spring, but the tectonic uplift of the structure and the riverbed deeping have exposed the entrance of the cave on the surface. This cave is a testimony of the tectonic uplift of the structure and the evolution of the underground karstic processes. Currently this cave has temporary water flow, only in

wet season. From the cave the view is breathtaking with the waterfall of Radesh stream on the background, rich vegetation on the slopes, and the ruins of the citadel of Skrapar on the west. The explored length of the cave up to now is 1853m. The cave has stalagmites, stalagtites and bats.

### **Glacial cirques of Tomorri**

On the mountain of Tomorri the glacial of quaternary (Vym) have shaped the karstic preglacial relief forming glacial cirques along its northern and eastern slope on the 1800-2200m altitudes. On the footstep of these glacial cirques, the moraine deposits of Ujaniku (25-80m thick) are situated over the flysch, in the altitude 1200-1800m. Currently the glacial landforms are shaped by the nivokarstic and periglacial processes. Glacial cirques are simple and have typical shape of an amphitheater.

### **Neck of Kulmaka**

Neck of Kulmaka separates Mountain of Tomorri from that of Kulmaka. It is 2 km long, 1 km wide and 1460-1500m high. The sizes of this neck are among the biggest in Albania of its type. It is situated on the deposits of flysch of Oligocen, which lay in transgresiv position to the limestone of Cretak of Mountain of Tomorri on the west and Mountain of Kulmaka on the east. This neck separates the meridional direction of Mountain of Tomorri from the NW-SE direction of Kulmaka.

## **GEOTOURISM AND SUSTAINABLE DEVELOPMENT**

According to National Geographic Society (2015), geotourism is defined as a tourism that sustains or enhances the geographical character of a place, its environment, culture, aesthetics, heritage, and the well-being of its residents. This means that geotourism is a multifaceted sustainable tourism centered on the conservation of geoheritage, appreciating its geological creation through learning and

enrichment of the economy (Swarna et al., 2013). Skrapar region in a way has initiated geotourism in Albania, mainly for the scenic landscape and rafting. Albania Rafting Group is the first tourism and sport organization in Albania which has helped in developing sustainable outdoor tourism attracting an increasing number of tourists in remote areas and extending the time of their stay in Albania. They are contributing in generating revenue for local tourism, while maintaining the authentic values of the area, creating new jobs and opportunities for young people in the tourism and recreation industry.

The majority of visitors are foreigners (Italian and French) who come for water sports mainly. The analyses of a questionnaire realized with visitors of Canyon of Osum in May-July 2015, shows that 65 % of visitors visit the canyon for rafting, 24 % for its esthetic value and 11% for both of them. According to the statistics native tourists have still insignificant impact to the economy of tourism of Skrapar. The main income is generated by the foreigners, for the price for a rafting trip (provision of the equipments and specialised staff) is too high for the domestic visitors. According to the Albania Rafting Group, the cost of the water sports in Osum is 50 euro/person (Albania Rafting Group, 2015). However, the promotion of the values of these geosites and the activity of water sports is bringing an increased number of visitors in Skrapar. This has stimulated local investors to build small hotels and restorants in Çorovoda and improve their services. On the other side the improvement of the roads has made accessible some of the main geosites, resulting with the increased number of visitors. About 78% of the 100 local people that were interviewed in Skrapar answered that they do not want to leave the area. This is a positive sign for a remote area which has been facing migration since 1990. Geotourism perspective of the area has increased also the value of the land and people feel motivated to grow local

products to support tourism.

People feel optimistic that geotourism development will stimulate employment. According to the program of the major, geotourism development is a priority for Skrapar municipality that will generate employment and income. To achieve this goal local people need to be trained as tour guides or water sports instructors and services need to be improved. Also traditional handicrafts like pottery, carpet makers, raki makers, besides handmade souvenirs using geomonuments images and local materials such as wood or stone etc., need to be encouraged. This will create job opportunities for local people and motivate them not to migrate. So far there is no entrance fee to the geomonuments and no information documents such as guide books, maps, postcards, etc., but in the future the revenues gathered from these items can be used for better management of the geomonuments.

### **Promotion of the geomonuments**

The list of the monuments of nature of Albania is the main publicly accessible database of natural heritage sites which has some very basic information. There are no guidebooks for geomonuments in Albania besides some publications by Albanian geologists, geographers and ProGeo Albania. Public education is contributing to educate the young generation with the complex values of the nature and the human impact in the landscape. In the programs of the elementary schools, high schools and some bachelor and master programs are included syllabuses about natural heritage and human ecology. This is raising the awareness of the people about the values of the protected areas in general and geomonuments in particular resulting with an increased desire to visit them. On the other side, as Joyce and Brohl (2008) state, tourism of geological and geomorphological sites can be used to harness the public's growing interest in environment and ecology, and educate them in the story behind the landscape.

Unfortunately, so far there is no guide book for Skrapar and any maps or informative tables for each geosite. Databases with up to date information about geological heritage is missing and this was the reason why a project about geoinformation of the protected areas in Albania is being held by the Department of Geography, in the scope of natural heritage program. So far we have done some progress concerning geoinformation of the Albanian caves, canyons, waterfalls, glacial landforms, etc., and currently we are working for the geoinformation of the geomonuments of 61 municipalities\*. Skrapar is the first region we worked about where the valorisation of the geomonuments for geotourism is done and geoinformation of geosites is created.

The geoinformation of geosites of Skrapar (Fig. 1) created with the help of ArcGIS10, is a digital database about each geosite of this region, where data about geographical position, geology, geomorphology, hydrology, biodiversity,

etc., are provided. For example the database of a waterfall besides esthetic, hydrologic and biological values includes also important data for the visitors like geographical coordinates, distance, altitude, accessibility, itineraries, scale of difficulty, etc. The database completion is an ongoing process, for in many cases there is no updated data or total lack of information. Hopefully this will be improved in the future with continuous monitoring of the state of the geosites from the experts in the field of geology, geomorphology, hydrology, biology, etc. The website “Heritage of Skrapar” is being set up, where the public will be informed for the geoheritage of this region besides the cultural heritage. Ministry of Tourism and travel agencies need to promote and include in their itineraries the geomonuments of Skrapar. In this way better promotion of geomonuments can help within the geotourism development, what will have a significant impact on sustainable



Fig. 1 Database of geomonuments of Skrapar

development of this region.

## CONCLUSION

Based on the valorisation of the geosites, Skrapar has a considerable potential for geotourism development. State and local authority of Skrapar are yet unaware of this rich geoh heritage and its economic potential in terms of geotourism development. Concerning protection and conservation it is done almost nothing, but their declaration as monuments of nature. Proper management of the geosites should consider providing basic facilities to the visitors, recreational activities and geotours need to provide geological, geomorphological and biological knowledge to the visitors. Geoh heritage of Skrapar can also be used to create images for the country and in the context of the sustainable development, geoh heritage can be a significant contributor to the achievement of economic development, social development and environmental protection. The contribution of geographers should not be limited to the identification and protection of heritage values, but also extend the application of new technologies GIS/RS for cataloguing

the geoh heritage to turn it an accessible tourism product with economic benefits.

## REFERENCES

- Akademia e Shkencave** (1990a) Gjeografia fizike e Shqipërisë, vol. 1, 43. (Tectonic zones of Albanides: Korabi, Alpet, Vermoshi, Sazani, Mirdita, Gashi, Krasta-Cukali, Jonike, Kruja).
- Akademia e Shkencave** (1990b) Gjeografia Fizike e Shqipërisë, vol. 2, 298.
- Albania Rafting Group** (2015), available at: [www.alrafting.com](http://www.alrafting.com)
- Aliaj S.** (2012) Neotectonic of Albania, Klean.
- Joyce B.** and **Brohl M.** (2008) Geological and geomorphological features of Australia: how our geosites can be used in geoparks and geotourism to promote better understanding of our geological heritage and as a tool for public education, Global Geotourism Conference "Discover the Earth beneath our feet".
- Swarna K., Biswas, S.K.** and **Harinarayana T.** (2013) Development of Geotourism in Kutch Region, Gujarat, India: An Innovative Approach, Journal of Environmental Protection, 4, 1360-1372.
- Solarska A.** and **Jary Z.** (2010) Geoh heritage and Geotourism Potential of the Strzelin Hills, Geographica Pannonica, Vol.14, Issue 4, 118-125.
- National Geographic** (2015) About geotourism, available at: [http://travel.nationalgeographic.com/travel/sustainable/about\\_geotourism.html](http://travel.nationalgeographic.com/travel/sustainable/about_geotourism.html)