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**The Glacial Lakes of Shar Mountain as a Tourist Attraction**

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**Abstract.** Every tourist resource does not have to be a tourist attraction, but every tourist attraction represents a tourist resource. These resources are the main factors for the development of tourism because, without the existence of tourist attractions, there can be no tourism. The tourist attraction is a basic prerequisite to provide places as tourist destinations on the market. The decision for tourist movement is made when there is a geographical area with natural or cultural resources that meet a certain human need, when those resources are activated and when potential tourists have appropriate knowledge about it. The experience so far in the care and protection of certain natural rarities and sites that abound in natural beauty notes a positive trend. Natural rarities receive treatment that contributes to their sustainable development, which increases the role of society towards the organization and humanization of the environment, protection and improvement of nature, and through these activities development of tourism as an economic category. The Republic of North Macedonia is characterized by numerous natural rarities, and Shar Planina is one of the most noticeable. Numerous cirques, glacial lakes, and various forms of glacial relief distinguish Shar Mountain as a natural rarity. Because of the beauty of these glacial lakes, they are called "Mountain Eyes". This paper aims to present the glacial lakes of Shar Planina in the part that belongs to the Republic of North Macedonia as tourist attractions that attract a large number of tourists.

**Key words:** Shar Planina, glacial lakes, tourism, tourist resources, tourist attractions

### **Introduction**

The destination must contain certain elements to be appealing and attractive to potential tourists and to satisfy their basic and tourist needs. Basic elements include attractions, services, and facilities, affordability, human resources, image, and price.

Attractions are the biggest motivator for tourists to come to a certain destination. The attractiveness of the destination is in the first place because it attracts tourists who need rest, fun, entertainment, recreation, etc. The destination based on its attractions creates its image that represents the views, perceptions, experiences, opinions, and prejudices that some tourists hold for certain geographical areas.

The tourist movements related to the mountains are one of the most massive in the world, where the demand for quality spaces is constantly on the rise in the tourist market. Natural values such as tourist attractions represent the entirety of all natural-geographical conditions that can affect the overall economic life of a place. These are all the goods that are found in the natural environment: land, water, flora, fauna, and the like. Besides, these resources must have a high degree of attractiveness to be able to attract a certain segment of tourism demand.

Tourist resource represents an opportunity, potential for tourism development and achieving complementarity with other elements of the tourist destination. On the other hand, the tourist attraction occurs through the transformation of tourism resources into means of labor and a well-designed development policy.

Natural tourism resources consist of all-natural elements and factors that have a high degree of attractiveness and that reflect their geographical environment and can be valued for tourism purposes. According to their relevant characteristics, these resources can be classified

as geomorphological, climatic, hydrographic, and biogeographical, and as protected natural heritage.

Natural tourist resources are created by nature itself and they as such exist in geographical areas regardless of the demand and need of tourists. They can be considered as recreational tourist resources if they are used by tourists to meet their recreational needs (for example, mountainous areas are independent of the needs and desires of the people, but at the moment when they are used for recreation of tourists, they become natural recreational tourism resources) (Gjorgievski at al., 2013).

According to this approach, natural tourist resources can be: mountains, rivers, lakes, flora, and fauna, and from such resources arise the following recreational tourist activities: mountaineering, hiking, alpinism, skiing, cross-country car, cycling, paragliding, swimming sports, hunting and fishing and the like.

Knowing the characteristics of natural tourist attractions and their grouping is of great importance for their valorization and tourist activation.

### **Methodology**

The main task of this research paper is to map the glacial lakes of Shar Planina as natural rarities and beauties, in an integrated tourist offer that should contribute to the development of tourism. After gathering the necessary information and their analysis, this research paper shall open the possibilities for using the existing ones and creating new tourist locations at a local and regional level.

The research is based on primary and secondary data sources. The primary data sources were obtained through a survey questionnaire that was applied to a group of 78 mountaineers after returning from mountaineering from Popova Sapka to Lake Krivoshi and vice versa in November 2020. The survey questionnaire contained five questions related to gender, age, the reason for hiking, the attractiveness of natural resources, and the need to set up tourist facilities. Systematization, data processing, as well as the presentation of the obtained results are an integral part of this research paper. Secondary data are obtained through analysis of the available literature and field research. After processing the obtained data, a descriptive method was applied for presenting and describing the phenomena and recognizing their characteristics and constituent elements, as well as drawing a conclusion.

### **Shar Mountain Tourist Resources**

Shar Planina is located in the extreme northwestern part of the Republic of North Macedonia and is one of the highest and most widespread mountain areas (840.2 km<sup>2</sup>) in RNM. The main ridge of the mountain has a length of 80 km and a width of 10-20 km and extends to the southwest-northeast (Kolcakovski, 2006). This mountain range has an excellent geographical and tourist position. Shar Planina is the most striking mountain massif in the Republic of North Macedonia. Its tourist value is a result of the vertical and horizontal division of the mountain, then the climate, hydrography, flora, and fauna. Its morphological heterogeneity enables pleasant walks through the area, both on arranged paths but also on paths that should be arranged in the future and properly marked for the lovers of mountain tourism. Very clean and fresh mountain air makes Shar Planina attractive to the population from the polluted urban areas (Ministry of Environment and Physical Planning, 2008).

Shar Planina captivates with its hydrological diversity as well. The water richness of Shar Planina consists of many springs, several glacial lakes, and steep mountain watercourses that are the result of the evolutionary development of glacial and fluvial erosion. Glacial lakes have a special place in the overall nature of Shar Planina. All of them, both permanent and periodic, as well as those that have already disappeared and left traces in the form of peatlands, fall into the category of natural phenomena of national importance, which shall be adequately protected

(Panov & Stetic, 2008). The tourist resources of Shar Planina as natural tourist attractions are visited by many mountaineers. They are the main reason for organizing mountaineering tours.

### The Glacial Lakes on Shar Mountain

Shar Planina, after Pirin Planina, with a total of 176 and Rila with 140, has the most glacial lakes on the Balkan Peninsula. Nikolić (1912) registered 25 on this mountain, including the periodical lakes, while according to Krivokapic (1969) there are 39 lakes, of which 25 are permanent. There are a total of 27 lakes on the part of the mountain that belongs to the territory of the Republic of North Macedonia. 19 of them are permanent and 8 are periodical (Kolcakovski, 2000).

Shar Planina due to its hydrological diversity, especially after the appearance of several glacial lakes, is a significant natural entirety (Stojmilov, 1975). Glacial lakes are located in a clean unpolluted natural environment, with streams flowing into them and tributaries flowing into several smaller rivers. Some of these streams sink, which makes these lakes even more attractive. Some of the lakes do not have tributaries but are filled with underground springs. In some of the lakes, wildlife is present and some of them are stocked every year, which means that fishing is possible. The landscapes that make up the lakes and their natural surroundings are especially attractive to visitors (Selmani & Dimitrovska, 2004).

**Table 1. The glacial lakes of Shar Planina**

	Name of the lake	Altitude (m)	Longitude	Latitude	Area (m <sup>2</sup> )
1	White Lake	2275	203.4	100.0	14 820
2	Lake Bogovinjsko	1941	470.4	200.2	62 000
3	Lake Bozovachko	2107	39.9	10.02	287
4	Lake Karanikolichko	2184	296.1	116.9	27 020
5	Lake Ginovodno	2260	109	55	12740
6	Large Lake Dedelbeshko	1980	100	80	/
7	Large Lake Jazhinechko	2180	/	/	9890
8	Upper Lake Vrachansko	2190	59.5	39.8	1771
9	Upper Lake Dobreshko	2314	46.7	32,6	1006
10	Lake Defsko	2112	150	100	13000
11	Lower Lake Vrachansko	2179	27.0	19.02	362
12	Lower Lake Dobreshko	2263	90.4	72.9	3674
13	Lake Krivoshisko	2237	204.1	120.1	15540
14	Small Lake Dedelbeshko	1820	80	30	/
15	Small Lake Karanikolichko	2288	107.5	103.3	7610
16	Small Black Lake	2165	175.3	65.2	6700
17	Black lake	2164	320.7	237.9	34820
18	Lakes Chelepinski	2250	/	/	/
19	Lake Shutmansko	2070	160	100	12740



Upper and Lower Lake Dobreshko



Black lake



Lake Krivoshisko



Lake Shutmansko

**Results and Discussion**

A total of 78 people aged 18-47 were surveyed, 54% were women, and 46% of their lives (Figure 1). The glacial lakes of Shar Planina can not be used for transportation, it is necessary to ascend for hours because of the high altitude. Tourist facilities in the vicinity of only one lake are not used. 64% of the respondents think that it is a disadvantage and it is necessary to have tourist facilities and catering services (Figure 2).

The best reason to visit the lake Krivichko Semejstvo is the beautiful nature (55.1%), natural attractions (56.4%) and then recreation (46.2%), fresh air (41%) and socializing (35.9%), as presented in the Figure 3. Natural resources are rated as very attractive (61.5%), Figure 4.

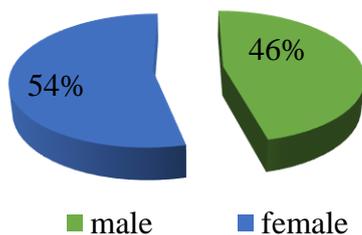


Figure 1. Respondents' gender distribution

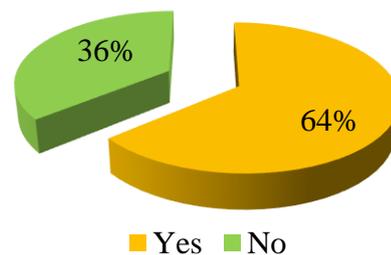
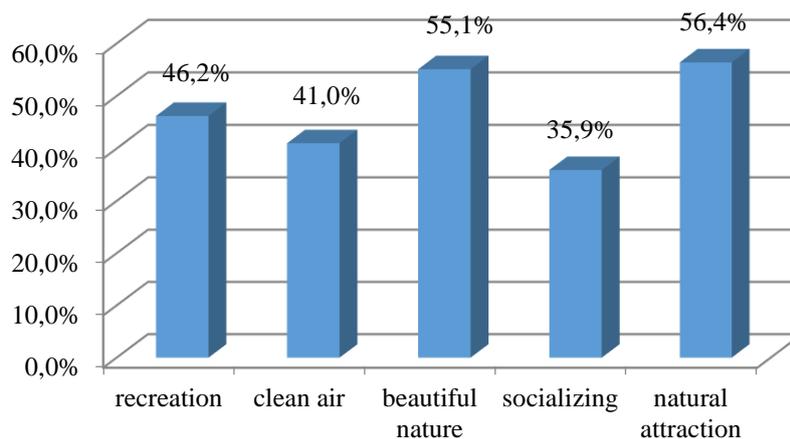
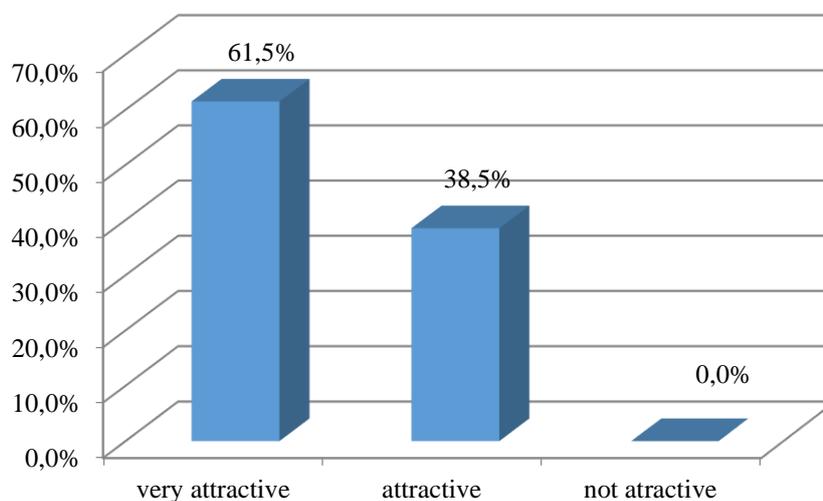


Figure 2. Is there a necessity for tourist facilities around the lake?



**Figure 3. Reasons to visit lake Krivoshisko**



**Figure 4. Attractiveness of natural resources**

### Conclusion

Tourism has the power to influence and change the environment, to ensure the sustainable use of resources, protect natural attractions, etc. However, tourism also has the power to destroy. If tourism is not properly planned and implemented, it can destroy the flora and fauna, cause and stimulate unplanned construction, degrade the region, create wastewater problems, ignore and neglect the needs of the domicile population, and so on.

Tourism must provide environmental protection, protection of natural tourist resources and attractiveness, to meet the needs and motivation of tourists, while ensuring its sustainability.

When we say tourism development, which is proportionally related to the preservation of the environment, we usually mean the one that meets the current tourist demand and tourist offer, facing the improvement of opportunities for the use of tourism resources in the future, without jeopardizing the opportunities to future generations to meet their tourism needs.

For tourism to truly contribute to the overall development, it needs to be planned and managed in a way that enables protection and improvement of the environment. Regarding Shar Mountain, tourism is of great importance and represents an even greater chance for improvement and transformation of the region (Eko-Natyra, n.d.).

Due to the change of the traditional way of life in the region and in general, the growing poverty and the political instability, the natural values of Shar Mountain are under strong anthropogenic pressure. This causes numerous threats that can lead to the degradation and destruction of all-natural values.

The results of the survey show that young people need tourist facilities around the lake, which contradicts the reason for visiting the lake (attractiveness, clean unpolluted nature, clean air, and beautiful landscapes).

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