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Natural tourist resources in Rhodope tourist region

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Abstract: *Rhodope Tourist Region is one of the most attractive tourist regions in Bulgaria and one of the few that stand out with almost uniform year-round development of tourist activities. The outlines of the tourist area largely coincide with the outlines of the mountain of the same name. This fact predetermines the exceptional richness and diversity of natural tourist resources. Here are the largest coniferous forests in the country, some of the largest dams, the largest number of caves used for tourist purposes, many mineral springs, bizarre rock formations, etc. The relatively well-preserved natural environment is a prerequisite for the presence of extremely high biodiversity, as well as a large number of protected areas. The region is specialized in mountain tourism, incl. ski tourism and hiking. In connection with the available natural tourist resources, the tourism product is increasingly enriched with various specialized types of tourism, incl. balneotherapy tourism, ecotourism, rural tourism, etc. In connection with the increasingly intensive tourist load, the problem of protecting the natural tourist resources from the growing anthropogenic pressure, as well as the prospects for sustainable development of the tourist industry in the region are becoming especially relevant. The aim of the present paper is to valorize the natural tourist resources of the Rhodope tourist region and to give guidelines for their sustainable use.*

Keywords: Rhodope tourist region, natural tourist resources, valorization, sustainable development

Introduction

Rhodore Tourist Region is one of the nine modern tourist regions in Bulgaria. It is located in the southern part of the country. It extends on the territory of the mountain of the same name. It borders the region of Thrace to the north-northeast, to the west the region of Rila - Pirin, and to the south it reaches the border with Greece. It covers 27 municipalities from 5 districts (Table 1). The center for management of the tourist area is in the town of Smolyan.

Table 1. Territorial scope of the Rhodore tourist region [1]

RHODOPE TOURIST REGION	
Main specialization	Mountain and rural tourism
Advanced specialization	1. Mountain tourism (skiing, hiking, recreational tourism, etc.) 2. Rural tourism 3. Balneotourism, SPA and wellness tourism 4. Adventure and ecotourism 5. Cultural-historical and festival tourism 6. Religious and pilgrimage tourism
Management Center	Smolyan
Districts	Municipalities
1. Pazardzhik (part)	Batak, Bratsigovo, Velingrad, Rakitovo
2. Plovdiv (part)	Asenovgrad, Kuklen, Lucky, Rhodopes
3. Smolyan (whole)	Banite, Borino, Devin, Dospat, Zlatograd, Madan, Nedelino, Rudozem, Smolyan, Chepelare
4. Kardzhali (whole)	Ardino, Djebel, Kirkovo, Krumovgrad, Kardzhali, Momchilgrad, Chernoochene
5. Haskovo (part)	Ivaylovgrad, Madzharovo

Methodology and aim of the research

The aim of the present study is to valorize the natural tourist resources of the Rhodore tourist region and to give guidelines for their sustainable use.

A combination of research methods was used to achieve the set goal. Field research is a basic method for geographical, and more specifically tourist-geographical study of territorial units of various scope and

rank, including tourist regions. It was conducted in a long period, which makes it possible to note the changes that occur in the tourist development of the studied area. The cited numerical data are based on the review of the literature on the topic. To present the obtained results we used a combination of general logical methods such as analysis, comparison, induction, deduction, etc.

Characteristics of the natural environment

The Rhodopes are the oldest and most extensive mountain massif in Bulgaria, consisting of a complex system of hills, valleys and deeply incised river valleys with a total area of about 18,000 km². Of these, 14,737.5 km² (82%) are located on Bulgarian territory, which occupy about one-seventh of the country's territory. The remaining 18% are on Greek territory. It stretches for 230 km in the east - west direction and about 100 km in the north - south direction.

The name of the mountain has a Thracian root and was first mentioned by Herodotus (5th century BC). Other ancient historians (Pseudo-Plutarch, Mendes, Ovid) also mention it in their works such as the Rhodopa or the Rhodope. The origin of the name is sought in different directions - it is associated with ore, with the pagan goddess Rhodope, with high waters, etc. Homer calls this impressive mountain system the Thracian Snow Mountains. In the Middle Ages it was known as the Nightingale Mountains, and during the Ottoman rule - as the Dospat Mountains.

The rock composition is diverse. Proterozoic metamorphic rocks predominate - marbles, gneisses, shales and granites embedded in them. Extensive karst areas are formed in the marble rocks around Velingrad, Peshtera, Trigrad, as well as in Ardin and Dobrostan karst areas. There are a significant number of caves in the Rhodopes. The Yagodinska Cave, the Devil's Throat, Snezhanka, Uhlovitsa, Dobrostanski Biser are well-developed for tourist visits, and the Harami Cave, Lepenitsa and others are used for extreme tourism. Interesting objects are the rock figures - The Wonderful Bridges, The Stone Wedding, The Petrified Forest, etc. The most visited peak is Snezhanka with the TV tower. A characteristic feature of the Rhodopes are the many large dams around which recreational areas have been formed - Batak, Dospat, Vacha, Studen Kladenets, Ivaylovgrad, Kardzhali, etc. The abundance of mineral and karst springs is also impressive: Velingrad (Kleptuza), Narechenski and Bedenski mineral baths, Mihalkovo, etc. The largest river in the Rhodopes is Arda, but besides it the rivers Dospat (tributary of Mesta), Vacha, Chepelarska (tributaries of Maritsa) and others flow from here.

According to its morphohydrographic features, the mountain massif is divided into Western and Eastern Rhodopes. The Western Rhodopes are higher with an average altitude of 1,098 m) and covered with forests. Their area is 8,732.1 km². The Eastern Rhodopes are significantly lower (average altitude 329 m). They are significantly deforested, with an area of 6 005.4 km² [2].

The *Western Rhodopes* comprise two well-defined morphographic areas:

- Batashko-Dabrashka area (including the hills: Batashki, Dabrashki, Alabak, Karkaria, and the valleys: Batashka, Chepinska, Dospatska and Devinska);
- Perelik-Prespa area (including the hills: Perelik, Prespa, Chernatitsa, Dobrostan massif and the valleys: Hvoynenska, Smolyan and Ardinska).

The highest peak in the Western Rhodopes is Golyam Perelik (2,191 m).

The Eastern Rhodopes unite the following morphographic areas:

- Haskovska area (and the hills Uzundzhovski, Haskovski, Huhlata, Chukata and Gorata);
- Ardennes area (and the valley extensions: Karzhali, Gnezdovsko-Osmanovsko, Rabovsko, Borislavsko and the gorges: Birarmutski, Zhelezni vrata, Studen kladenets, Gornomadzharovski, Dolnomadzharovski and Kamildolski);
- Varbishko-Krumovishka area (and the hills Zhalti Dyal, Stramni Rid, Iran Tepe and Sirta);
- Gyumyurdzhinsko-Maglenishka (and the hills Gyumyurdzhinski Snezhnik and Maglenik).

The two parts of the Rhodopes differ significantly from each other. The *Western Rhodopes* have the largest coniferous forests in Bulgaria. This is one of the few mountains in the country inhabited by brown bears. Despite the existence of many maintained reserves (Dark Forest, Konski Dol, Beglika, Mantaritsa, Kupena, Amzovo, Kazanite, etc.), there is still no declared nature or national park. Other interesting and visited sites in the Western Rhodopes are the villages of Shiroka Laka (an architectural reserve), Kovachevitsa, Dolen, Leshten (for rural tourism), the cities of Smolyan, Devin, Ardino, Chepelare (the highest town in Bulgaria), the observatory in Rozhen, Asenova. fortress, Bachkovo monastery, Krastova gora, Belintash, Zlatograd, the fortresses Malasar and Ustra, Canyon eco-path and the waterfalls near Smolyan, the Smolyan lakes, etc.

The *Eastern Rhodopes* are significantly lower and deforested, with higher temperatures in all seasons. They are characterized by specific rock formations. In the National Strategy for Conservation of Biological Diversity, the Eastern Rhodopes are defined as one of the richest in species and a priority place for conservation in Bulgaria. More than 1,335 species of plants, 350 species of butterflies, 21 species of fish, 10 species of amphibians, 26 species of reptiles, 273 species of birds and 59 species of mammals have been found here. There are also the most important colonies of birds of prey in our country. The center of ornithological tourism is the town of Madzharovo, located in the picturesque gorge of Arda River. However, there is also no separate natural or national park here. In addition to the mentioned sites, Perperikon, Tatul, Utroba Cave, Ivaylovgrad, Mezek, the Petrified Forest, etc. are interesting and often visited. There are also a significant number of still poorly studied megaliths.

The mountain climate with its favorable (healing) effect on the human body is also crucial for the development of tourism. One of the most important features of this climate is the low atmospheric pressure

and, accordingly, the lower oxygen content in the air. This stimulates respiration and blood circulation and increases the hemoglobin in the blood. The intensity of direct solar radiation, as well as ultraviolet radiation, and their proper use are also a factor that contributes to strengthening human health. The snow cover lasts significantly longer in the mountains and thus further enriches the space with sunlight. A characteristic feature of the uneven mountainous areas is the mountain-valley wind and the foehn. The mid-mountain and high-mountain climate is characterized by high purity of the air. There are no plant and domestic allergens, typical for cities and plains. The forest microclimate is characterized by volatile substances and phytoncides in the air, which have antibacterial action.

Due to its large area, lower altitude and diverse nature, the Rhodopes are more easily accessible than Rila and Pirin and offer rich opportunities for tourism. They are the most populated Bulgarian mountain and the mountain with the best transport infrastructure. The roads are laid mainly along the many river valleys.

Survey results

Valorization of natural tourist resources

Each of the separate areas of the tourist region of the Rhodopes has its own distinctive natural resources, which mark, on the one hand, the main accents in the construction of the respective tourist proposals and, on the other hand, mark the guidelines for sustainable development of the territory.

The part of **Pazardzhik region** (4 out of 12 municipalities), falling within the boundaries of the considered tourist area, is distinguished by its large karst springs. The most remarkable of them is Kleptuza, near Velingrad. The richest hydrothermal deposits in Bulgaria are concentrated in Bratsigovo, Rakitovo, Velingrad and in the valley of Chepinska River. The undisturbed natural environment, the diverse relief, the presence of many mineral and geothermal deposits, the rich history and cultural values, the way of life and the preserved traditions of the population favor the development of alternative forms of tourism. Priority types of tourism at the moment are mainly mountain tourism and balneological tourism [3]. There are several established resorts: Yundola, St. Konstantin, Tsigov Chark, Batak Dam, as well as Velingrad. All this creates real preconditions for tourism to become a leading sector of the district's economy.

Velingrad is the city most generously endowed with mineral water in Bulgaria. It is declared a spa resort of national importance in 1951 and of international importance in 1981. In 2005 the city was named the "SPA capital of Bulgaria", and three years later (in 2008) it was named the "SPA capital of the Balkans". The mineral water here springs under natural pressure from a depth of up to 1200 m. Its deep origin helps to filter it naturally, passing through many porous rocks until it reaches to the earth's surface. This process is natural and preserves its mineral structure. The waters from the three deposits along Chepinska River: Chepino, Ladjene, Kamenica, as well as from the deposit in the village of Draginovo, have an official flow rate of

124.28 l / sec and a temperature of 25°C to 97.30°C. It is the largest flow in Bulgaria and on the Balkan Peninsula. The waters' healing effect is due to the specific mineral and gas composition, as well as the diverse biologically active substances contained in them. Inhalation, drinking and external balneotherapy here is combined with a favorable climate. The resort has excellent conditions for treatment, recreation and prevention, sports and tourism.

Every year **Velingrad** reports over 200,000 visitors. They are accommodated in over 20 hotels, 43 holiday resorts with nearly 1,500 beds, as well as in more than 300 private rooms and guest houses. Numerous sanatoriums, public health stations, modern SPA centers and complexes have been built. There are prerequisites for the development of ski tourism, ecological and hunting tourism. The municipality is surrounded by several dams and cascades: Batak, Beglika, Dospat, Belmeken, which predispose the development of fishing tourism. Well-marked paths in the area lead to dozens of cultural and natural attractions. One of the symbols of Velingrad is the great karst spring - Kleptuza. Its flow rate is 580 - 1 180 l / sec with a constant temperature of 8°C. Part of the water is used to supply the city, as well as to meet economic needs. Another part fills two beautiful artificial lakes, which are among the most popular places for rest and relaxation among guests and residents of the resort. In the area Markovi skali above Kleptuza is the only intersection of a meridian and a parallel in Bulgaria (geographical coordinates 24° east longitude and 42° north latitude).

Among the most famous natural tourist resources in the area of **Batak municipality** are Batak dam and Tsigov Chark area; the localities Shiroka Polyana (with the dams Shiroka Polyana and Toshkov Chark), Beglika, Kara Tepe; Golyam Beglik Reserve has centuries-old coniferous trees and Dupkata Reserve is a natural phenomenon with diverse flora and fauna.

Bratsigovo Municipality has all the necessary resources for the development of rural and ecological tourism. Here are the protected areas Atoluka and Tamra. There are 11 hiking trails that provide a wide variety of opportunities.

The town of **Rakitovo**, the administrative center of the municipality of Rakitovo, was declared a high-altitude resort village in 1963. In the second half of the twentieth century it developed with a focus on sanatorium treatment of lung diseases, but today it is in the shadow of the neighboring municipalities of Batak and Velingrad. Among the landmarks in the area are Mantaritsa Biosphere Reserve with an area of 1,069.2 ha (part of a site under the auspices of UNESCO) and Lepenitsa Cave.

In Bulgaria, two caves bear this name (the other one is near Belogradchik). Both are still preserved natural, but the one in the Rhodopes has been used for tourist visits since 2010. It is part of the Velingrad Cave Region and was explored in the 1920s and 1930s. It was declared a natural landmark in 1960. It is 1,525 m long, of which only 600 m are accessible to speleotourists. The cave is three-storeyed with an underground

river on the first floor and underground lakes on the second. Lepenitsa is rich in karst formations. In addition to stalactites, stalagmites and stalactons, rare "cave pearls" have been found here. The most impressive is the stalactite Cleavage. The temperature is about 10°C. The cave fauna includes 24 species of animals, of which 6 species are triglobionts (living only in the dark). Some species are endemic. There are also 6 kinds of bats. The cave can be entered only by prior request. Groups of up to 10 people with provided equipment are allowed. The traffic is only with a guide on a strictly regulated route, which is an important condition for the safety of visitors.

Snezhanka Cave is located in Batashki Hill in the Western Rhodopes, not far from the town of Peshtera. Formed about 3-5 million years ago, it is one of the oldest caves in Bulgaria. It was used as a refuge by the Thracian tribe Besi about 2,600 years ago. Remains of hearths, pottery made without a potter's wheel, bones of wild and domestic animals have been found there. Snezhanka was discovered and declared a natural landmark in 1961. It was opened for visitors in 1966. The name comes from the snow-white calcite. Its length is not large (145 m along the main axis), its area is 3,150 m², but the cave is abundant in formations. In addition to stalactites, stalagmites and stalactons, sinter ponds, cave draperies and pearls are formed there. Impressive are the Great Hall, the Magic Hall, the Landslide, the Beard Hall, the Udder Hall. The cave is inhabited by 3 kinds of bats.

Part of **Plovdiv District** also falls in the outlines of the Rhodope tourist region - with only 4 of its 18 administrative-territorial units. In this region remains the second largest municipality in the district - **Asenovgrad municipality**. It has ample opportunities for tourism development as a priority industry and for creating a specialized tourism product that meets modern trends [4]. As part of the Rhodope Mountains, **Asenovgrad** region abounds in rich and varied terrain, natural vegetation and interesting animal species. The Red Wall is located in the area - the largest biosphere reserve in the Rhodopes (65,409,399 ha), part of a vast deciduous forest under the auspices of UNESCO and one of the richest in caves, waterfalls and water cascades in Bulgaria. Here is the highest waterfall in the Rhodopes - Slivodolsko padalo (50 m).

The Dobrostan karst massif is called the kingdom of the cavers because it offers exceptional pleasures for the connoisseurs of mountain beauty - steep slopes, precipices, "stone rivers" and caves, most of which are in close proximity to each other. This is one of the richest karst areas in Bulgaria (after Karlukovo) with about 250 mapped caves. Among them, *Dobrostan Pearl* is the newest cave opened for tourists in the tourist area of the Rhodopes - a precipice cave, which can be reached by a well-marked path from Marziganitsa mountain hostel. It was first studied in 1963. It is not large - between 500 and 1,000 m². The depth of the slope at its entrance is 15 m. It is rich in rock formations and sinter lakes, numerous lateral branches and bat colonies.

In the area of Usoykata near the village of Dobrostan is preserved a centuries-old forest of black pine (aged 200 - 220 years), located as an island in karst rocky terrain.

Narechenski Bany (**Asenovgrad** municipality) is a resort of national importance. It has existed since 1891. Its mineral water is hypothermal, moderately mineralized, sulphate-hydrocarbonate-sodium, radioactive and fluoric. It is clear, colorless, odorless, and pleasant to drink. Its healing effect is due to the high radioactivity, as well as the valuable chemical ingredients in it. Narechenska mineral water has a general sedative and analgesic, anti-inflammatory and anti-allergic effect primarily on the central nervous system, peripheral nerves and metabolism. Today the resort has attenuating functions due to the reduced flow of mineral water.

In the southern part of the municipality of **Kuklen** on an area of 23,000 decares, with an altitude of 700 m to 1,700 m spreads Rodopi Forest Park, with four main tourist resorts - the mountain hostels: Zdravets (1250 m), Koprivkite (1350 m), Studenets (1450 m), and White Church (1650 - 1700 m) [5].

The preserved clean natural environment of the municipality of **Lucky**, as well as its traditions in the field of hunting tourism, are among the specific advantages of the region. The Kormisosh hunting farm creates attractions for Bulgarian and foreign tourists, offering hunting, fishing, photo hunting, equestrian and ecotourism. It welcomes its guests in a hunting residence with 16 seats and a helipad, 2 mountain hostels and 11 hunting huts. In the area known for the diversity of game, red deer, wild boar, chamois, mouflon, brown bear, roe deer, capercaillie, fallow deer, as well as predators are successfully hunted. The success rate of hunting for the last 3 years is impressive - more than 90% [6]. On the territory of the farm are the waterfalls Holy Spirit and Gumburtia. The natural phenomenon Rock Bridge over Belishka River is also of interest to tourists.

Located in the central part of the Rhodope Mountains, **Smolyan district** falls entirely within the outlines of the Rhodope tourist region. It covers 3,193 km². Its territory is adjacent to those of the districts of Plovdiv, Pazardzhik, Kardzhali and Blagoevgrad. To the south, its borders coincide with the state border with Greece. Larger rivers in the region are Arda, Vacha and Chepelarska. Among the main water resources are following dams: Dospat, Vacha, Golyam Beglik, Krichim, Zlatograd, Polyana. The Devin region is rich in karst and mineral waters. The average altitude of the district is in the range from 450 m to 2 191 m, which has an impact on the overall socio-economic and infrastructural development.

Tourism is a priority sector of the economy in Smolyan district [7]. The region has a number of favorable conditions for the development of specialized types of tourism. It has a wide range of natural resources, lacks polluting industries; it is proximal to the White Sea, rich in cultural and historical heritage, and has a common border with an EU member state. On its territory, in addition to the traditional winter ski tourism, which develops mainly in the mountain resort of Pamporovo and in Chepelare, there are opportunities and alternative forms of tourism. Balneological tourism is established as a leader in the municipality of Banite and the municipality of Devin.

The village of **Banite**, the administrative center of Banite municipality, is a resort of national importance, a starting point for excursions in the vicinity of the Malka Arda River and for excursions (to the peaks Rozhen, Svoboda, Veshkata, to the Devil's Bridge, Pamporovo, etc.).

In the **municipality of Devin** some mineral springs (Devin, Bedenski bani, Mihalkovo, Nastan - 1, Nastan – 2) are valuable for the development of tourism. The mineral springs have been discovered by deep drilling. They have a similar chemical composition, but with different temperatures (from 37°C to 45°C). Their water is clear, colorless, odorless, with a pleasant taste. The presence of different types of mineral water in the resort enriches its balneological spectrum, expands and diversifies its uses. Due to its location at 710 m above sea level and the surrounding forests, the resort is suitable for climatotherapy. The spa complexes in Devin offer balneotherapy, mud therapy, paraffin and alkali treatment, kinesitherapy and physiotherapy. Mineral water is also bottled in the area for retail distribution.

The natural wealth, the protected areas and the clean air reveal excellent opportunities for the tourists. The area attracts with its unique caves, exciting hiking trails, the variety of birds and plants, mountain biking, horseback riding, rafting, etc. Rivers, dams and micro-dams are an attractive place for fishing enthusiasts and for rest and recreation in nature.

The *Devil's Throat Cave*, together with the nearby Trigrad Gorge, were declared a protected area in 1963. The cave has been recently formed, it is assumed that it was about 280,000 years ago (in the second half of the Quaternary). The climate in these places is tropical, which significantly accelerates the karst processes occurring in the Proterozoic (old) marble rocks. The first attempt to penetrate the cave was made in 1962 and took human lives. The actual exploration began in 1965, slowly and intensely due to the available underground rivers and waterfalls, erosion cauldrons, hard-to-reach corridors. It was opened for visitors in 1977. Its length is about 1 km and the tourist route is 350 m. Devil's Throat is one of the few Bulgarian caves that does not shine with exquisite formations. What attracts people to it is the opportunity to touch a real natural element, a part of the mysterious and scary underworld. This has nourished the human imagination since ancient times and gives rise to many legends. The most popular legend is that it was through the Devil's Throat that Orpheus descended into the underworld of Hades in search of his beloved Eurydice. The entrance to the cave today is a 150-meter artificially dug tunnel leading to the Roaring Hall, so named because of the roar with which the river water falls from a height of 42 meters. This is the highest underground waterfall in the Balkans. The roaring hall (110 m long, 40 m wide and 35 m high) is the second largest underground gallery in Bulgaria (the first one is the entrance hall of the Devetashka Cave). It is estimated that the hall can accommodate the St. Alexander Nevsky cathedral. About 400 meters from the entrance, the waters of the underground river are lost in a "siphon" and in a 60-meter gallery they leave the cave and come to the surface again through another cave. There are 301 steps along the breathtaking roaring waterfall. The view of the

boiling water, the deafening roar of the waterfall and the huge space of the hall are really impressive. The local cave club organizes boat trips to the cave from the beginning of May to the end of October. The club provides equipment - boats, life jackets and belts.

In the immediate vicinity of the Devil's Throat is the *Harami Cave*, which is also part of the Trigrad Cave Region. It was first studied in 1924, and in 1981-1983 archeological excavations were carried out there. Remains of primitive people who inhabited the place during the Neolithic (4,000 BC), tools, ceramic vessels, etc. from the Stone-Copper and Bronze Ages have been found. Some of the finds are presented in the Regional Historical Museum in Smolyan. The Harami Cave is a precipice - its total length is 510 m, and its two parts are connected by a large, almost vertical abyss. There is no specially built infrastructure for visitors. It is among the sites for extreme tourism in our country - to visit it requires a little courage, a little strength and a lot of enthusiasm. In the Harami Cave, one encounters one's natural fears of the dark, narrow space, and height. Overcoming them with the help of experienced professional guides guarantees unforgettable moments in the cave. Its entrance is reached after climbing a 23-meter vertical wall with the necessary equipment (protective clothing, headgear, alpine and speleological equipment). What follows is another ascent over the rock with a metal rope. The most adrenaline-inducing is the descent into a 43-meter precipice to a large hall, the bottom of which is covered with stone blocks. No less exciting is crawling in some of the narrow entrances of the small halls, where you can enter only by appointment. Nearby passes one of the routes Via Ferrata (from Italian Via ferrata - railway) in Bulgaria - a system of metal ropes, cable bridges, stairs and railings, which allows overcoming the hard-to-reach rocky terrain. This type of sports facilities are suitable for all mountain lovers who want to experience the pleasure of rock climbing without special training. After 40 m of climbing, the road leads to a site in front of the Lilac Cave, from which rare birds can be observed.

The Jagodina cave region in the Western Rhodopes includes 32 caves. Of these, the Jagodina Cave is well-developed for visitors. Although not far from the Devil's Throat, the two caves are significantly different. Jagodinska is the longest cave in the Rhodopes and the third longest in Bulgaria (over 10 km). The complex cave system was formed in 3 stages, during which its three floors with wide and narrow tunnels were formed. The top floor was formed 280,000 years ago, the middle floor 150,000 years ago, and the lowest floor about 25,000 years ago. In addition to the three main floors, there are two intermediate levels. In 1971 (together with Buynovo Gorge) it was declared a natural landmark. It has been open for visits since 1982. It is one of the few Bulgarian caves in which special events are organized. Among the underground beauties of its largest hall called the New Year's, tourists can celebrate the New Year or get married with an official ceremony. Jagodina Cave is also one of the richest in various karst formations. It contains almost all types of stalactites (ordinary, macaroni, sword, helictite, etc.), as well as stalagmites and stalactons. Cave draperies are also typical, as well as the rarer cave pearls, calcite roses and the so-called "Tiger skin" (red clay filling the indentations in the

marble vault). Out of a total of 28 types of cave formations in Yagodinska Cave, there are 22 types. There are 9 species of animals (including 3 species of bats). Archaeological finds indicate that the cave was inhabited during the Eneolithic, Bronze and Iron Ages. Remains of hearths and pottery, as well as landslides from a major earthquake, were found.

Uhlovitsa Cave is formed in the upper reaches of Arda River. It ranks among the most beautiful in Bulgaria (compared to an underground palace). It is less often visited than the above mentioned caves in the Rhodopes due to its remoteness from major cities and roads. It is located in Smolyan municipality, in the area of Sinite Virove and not far from the border with Greece. The nearest town to it is Smolyan (25 km). Its name comes from a species of owl that probably lived in this part of the mountain. It was formed in Proterozoic marbles, and it is assumed that its formation began 3.5 million years ago - this makes it one of the oldest caves in Bulgaria. Its length is 460 m, 330 m of which are accessible to visit. Uhlovitsa was declared a natural landmark in 1979, and since 1983 it has been open to visitors. Access to it requires a steep climb, and the challenge inside is the 189 metal steps after the entrance and the 288 - between its underground levels. Its attractiveness is due to the amazing formations sculpted by the water and the air currents - dendrites, resembling corals and trees, which create the impression of a seabed; the rarer helictites, which resemble small stone suns, and the typical for each cave stalactites, stalagmites and stone waterfalls. The cave is a two-storeyed precipice. In its upper level is the Hall of the Abyss - the throats of four deep abysses descend to a surprisingly beautiful lower floor (a long and relatively narrow gallery with indescribable cave shapes). The landscaped part ends with a snow-white limestone waterfall and beautiful sinter lakes, which fill with water in the spring. Attractive formations are also the Great Stalactite (with a circumference of 4.2 m); The Wart Sinter, the Corridor of Corals and Helictites, etc. During the different seasons of the year the cave is inhabited by 8 species of bats.

Chudnite mostove are located in the municipality of Chepelare near Golyam Persenk peak at an altitude of 1300 m to 1550 m. In the past, the river was much deeper and managed to carve marble rocks. Thus a deep water cave was formed. Over time, its ceiling collapsed in places and rock bridges formed. The big bridge is 100 m long, about 15 m wide and up to 45 m high. The small one is 60 m long and up to 50 m high. There is a third, even smaller bridge. In it the waters of the river disappear and appear after 3 km. *Chudnite mostove* were declared a natural landmark with an area of 38.92 ha in 1949. Two huts were opened nearby for tourists. There are many marked hiking trails in the area. An ancient Roman road has been discovered 4 km away. There are many caves around, but they are not suitable for tourist purposes.

Buynovo gorge is located in the municipality of Borino between the villages of Yagodina and Teshel at an altitude of 876 m (near Teshel Dam) to 1,307 m. This is a geotope of aesthetic, scientific, ethnographic and spiritual value, formed by the destructive action of Buynovo River, which over time has carved the

Proterozoic marble layers and created an impressive by size natural phenomenon [8]. The rocks surrounding Buynovo River and often overhanging the road are several hundred meters high in some places, and in its narrowest part (between the Teshel power plant and the junction for the village of Yagodina) the semi-dark canyon is only 10 meters wide. The place is called Wolf Jump. This is the largest gorge in Bulgaria with a length of about 16 km. It was declared a natural landmark in 1971 with an area of 759.15 ha. It is accessible both on foot and on an asphalt road that passes by the river at the very base of the rocks. The road is narrow and it is not recommended for trucks and impatient drivers [9]. The beauty of the Buynovo gorge is visible from a bird's eye view as the local tourist association has built an Eagle's Eye facility on the steep slope of St. Iliya, a peak with a height of 1,563 m. The metal platform reveals a beautiful view of the whole area. In good weather you can see the whole Rhodopes, the peaks of the surrounding mountains and even part of Greece.

The protected area of Buynovo Gorge, together with Trigrad Gorge, located only a few kilometers to the east of it, occupy almost half of the Trigrad Karst region, which has an area of about 210 km². The two majestic gorge forms, together with the small gorge of Haidushki dol, the numerous caves, the diversity of unique species of reptiles, amphibians, fish, birds and insects, as well as the endemic plants in the area, are an excellent prerequisite for turning it into a geopark [10].

The Trigrad gorge is within the municipalities of Borino and Devin. Its total length is about 7 km, and 3 km of them are especially picturesque. It is formed by the activity of the Trigrad river, which with its incision in the marble rocks forms a gorge with a depth of 300-350 m. The rocks on both sides are very close to each other, the distance is 100-300 m. With these dimensions the Trigrad gorge ranks third in size in Bulgaria after Buynovo and the gorge of Erma river. It has been under protection since 1963. Today it has the status of a protected area with an area of 710.57 ha. It is accessible and especially popular for tourism. A single road passes through it to the neighboring villages. It is also crossed by tourists visiting the Devil's Throat and Haramiyska caves. Nearby is Trigrad rocks mountain hostel, as well as the only bear museum in our country. Another suitable site to visit is the Museum of the Rhodope Karst in the town of Chepelare.

Kardzhali District with all 7 municipalities also falls in the scope of the Rhodope tourist region. It covers an area of 3,209 km². It borders Smolyan, Haskovo and Plovdiv regions, as well as the state border with Greece. Its location determines opportunities for cooperation in the field of tourism; implementation of joint projects, joint use of resources, facilities and logistics centers; development of common tourist destinations, advertising campaigns, etc. The relief is mostly low mountainous and semi-mountainous. Arda river passes here with its tributaries (Varbitsa river, Krumovitsa river, and Perperek river) and on it are built three of the largest dams in the country: Kardzhali, Studen Kladenets, and Ivaylovgrad.

The potential for tourism development in the region is considerable and diverse and this is one of the main prospects for the local economy [11]. The specific features of the district favor the upgrading of well-

developed established types of tourism (recreational, cognitive, cultural, etc.) and presuppose the development of alternative forms: hunting, fishing, water, sports, rural, holiday tourism, photo safaris, etc. This is a way to attract a certain type of tourists, as well as a means of overcoming the seasonality of traditional tourism. There are a total of 42 protected areas in the region, including: 1 reserve (Valchi Dol), 3 maintained reserves (Zhenda, Borovets, and Chamlaka), 15 protected areas and 23 natural sights. As a result of the various geological processes and the complex geological past of the Eastern Rhodopes, bizarre rock formations can be seen here, associated with myths and legends transmitted orally from person to person. In number of registered natural landmarks, Kardzhali ranks second in the country after Burgas district [ibid].

In the **municipality of Kardzhali** you can see the natural phenomena Stone Wedding (rock formations, which resemble a wedding procession of people, horses, birds, etc., sculpted from volcanic tuffs and modeled by the sun, water and winds, for millions of years) and Rock Mushrooms (modeled by intense underwater volcanic activity during the Paleogene with the pink color of the mineral clinoptilolite, with gray stumps of manganese nodules and green goggles because of the mineral celadonite). Both formations are near the village of Zimzelen. Near the village of Krushka is the Rock Window (a natural rock bridge formed by the lush waters of Kostinsko Dere, hanging in the air, supported by two columns, with a canvas cut on all sides). Much of the area here is dotted with such rock wonders and passing through it is an unforgettable experience. The third locality of the beautiful fern Venus hair (included in the Red Book in the category of rare species), declared a protected area in 1970, is located in the region. A place with Rhodope Silivryak (Orpheus flower) was found near the village of Prileptsi. Preserved from past geological times (late Tertiary), the plant was distributed throughout Europe and Asia, but it now grows only in Bulgaria and a little in northern Greece, therefore it has been declared a Balkan endemic species. It blooms in April. On the territory of the municipality there are many caves that provoke constant tourist interest - Utrobata, near the village of Nenkovovo, the only cave of this type discovered so far in Bulgaria; Karangila (near the village of Shiroko Pole), Inikler (Strem Labyrinths) close to the village of Stremtsi, the seven caves Snezhinkite (near the village of Snezhinka), etc.

In the territory of **Kirkovo municipality** there are also unusual rock formations and cult complexes - the Stone Town in the village of Benkovski (built on natural volcanic rocks with zoomorphic figures among the many rock excavations, carvings and caves); the elephant in the village of Kayaloba; the turtles near the village of Fotinovo (the largest rock deposit of horizontal type in Bulgaria - resembling turtle shells, the work of the Stone Age civilization), etc. Near the village of Kirkovo is the picturesque area Banichkite with several gushing springs along a small river. Some of them are caught in small fountains. Near the village of Stareishino is located the ancient cult complex Damla Kaya (The Dropping Stone) with a small waterfall, a stone spring and water flowing on the rocks. The place is extremely beautiful. The municipality of Kirkovo

includes the largest protected area in the Eastern Rhodopes - the mountain hill Gyumyurdzhinski Snezhnik (declared a protected area in 2003). To the south it reaches the state border with Greece, and the highest peak is Veikata (1,463 m) - the southernmost point of Bulgaria (unknown and until recently forbidden destination, but today open to tourists). In clear weather from the top you can see Greece and the White Sea. All sites in the region are easily accessible and suitable for ecological and hiking tourism. There are large areas where there are remnants of the so-called Silva Magna Bulgaricum (Great Bulgarian Forest), which impressed many travelers in the distant past. Primarily maple, beech and beech-fir forests over 150 years old have been preserved. Many of the specimens are over 300 years old, even 400 years old, and there are single trees that are probably much older. The Red Book of Bulgaria includes 11 of the presented plant species [12].

The attractive natural tourist resources in the **municipality of Krumovgrad** are positioned around the Studen Kladenets dam on Arda river. On the left bank of the dam is the Great Scree protected area with impressive high, steep and strongly cracked rocks. This is highest category of protected area recognized by the World Commission on Protected Areas (WCPA). Passing through the protected area is strictly controlled. To the south of the water basin are the only strict nature reserve in the Eastern Rhodopes Valchi Dol nature reserve and the Studen Kladenets nature protection center (with curious exhibits, farsighted observation tubes, etc.). After the dam wall, the Arda River forms the picturesque Sheitan Dere Gorge (Devil's Canyon). The steep cliffs overhanging the canyon with deep black water are called "Abrasive wells" because of the way they are formed. They are dotted with quartz and chalcedony veins. The place is extremely picturesque, resembles a lunar landscape, rich in water-loving and rocky birds, reptiles and insects and is very suitable for eco and photo tourism, kayaking, hiking and geological tours.

The protected area Skalite near Ustra (the village of Ustren) with localities of various plants used in medicine falls within the boundaries of the **municipality of Dzhebel**. In the region are the waterfall with the exotic name Marf near the village of Ridino, the geological phenomenon Schupenata planina/ the Broken Mountain (the village of Vodenicharsko); the beautiful Lebedovi/ Swan Lakes (the village of Lebed) with natural water lilies; the rock sanctuary Vyatarniya kamak/ the Wind Stone (Il Kaya), etc. natural landmarks with emphasized landscape value.

In the **municipality of Ardino** rises the mountain peak Alada, 1,241 m high. There was an old Thracian rock sanctuary associated with the cult of the Thracian Zeus. At the foot of Alada, known to the locals as Allah dag (God's mountain), there are cold water fountains with high drinking and healing qualities, coming from the depths of the peak. The unspoiled nature, the aromatic herbs and the ancient trees, the views to the Western and Eastern Rhodopes and to the Aegean Sea bring unforgettable pleasure to the tourists. An attractive center in the area is Hladilna Cave close to the village of Lyubino. Nearby is the Gaidartsi game farm, which organizes hunting tourism.

In the **municipality of Momchilgrad** a game breeding section has also been formed, bearing the name of the nearby dam Studen Kladenets. It is engaged in the breeding of deer and mouflon. More than 1,500 fallow deer inhabit the area south of the dam. This is the largest field without fences in Bulgaria (and perhaps in Europe) of the animal species. Interestingly, there are wolves in the same area [13]. Within the farm is the Yumruk Kaya rock massif, where griffon vultures, black and Egyptian vultures and rock eagles nest, which are protected throughout Europe. 219 species of birds find refuge in the region, of which 59 are in the Red Book of Bulgaria and 69 are included as protected by Natura 2000. Observations are offered and photo hunting of globally endangered species of vultures, rock and sea eagles, as well as other day and night birds of prey. The farm proposes photo safaris of fallow deer and red deer, bison, wild horses tarpans, fox, wolf and wild boar. Fishing trips are organized for the fishermen from the shore of the dam and with a motor boat for carp, catfish, white fish, perch, bleak, etc.

Another natural landmark in the municipality is the *protected site "Petrified Forest"* near the village of Raven. It is nearly 30 million years old and is the only one of its kind in the world. In many other places on the planet, areas with petrified trees have been found. But the "forest" in the Rhodopes is the only one in which these trees stand [14]. Their height is up to 1 - 1.5 m, and the diameter of the trunk from 0.4 m to 0.6 m. Two of them have a diameter of about 4 m. In the cross section of the logs are clearly different annual circles. Unfortunately, the forest is shrinking every year. Apart from nature, the reason for this are unscrupulous tourists who want to take a piece of the unique rocks.

The *village of Raven* is interesting to visit because of another site - Kedik Chal Nature Park with 21 centuries-old trees of the species Blagun and Hairy Oak aged between 400 - 500 years. These are remnants of the ancient forest that covered the territory of the Eastern Rhodopes and is described by chroniclers as the Great Bulgarian Forest. The Borovets maintained reserve is in the area of the village.

In the **municipality of Chernoochene** there is a reserve, named "Zhenda", where populations of European mouflon, roe deer, wild boar, fallow deer, red deer and Thracian partridge live. The reserve is located on an area of 5,258 ha and offers ideal conditions for hunting tourism.

Haskovo district is included in the tourist region of the Rhodopes with only two of its 11 municipalities - Ivaylovgrad and Madzharovo. The **municipality of Ivaylovgrad** is rich in centuries-old coniferous and deciduous forests, which, however, are subject to logging. On its territory are the meanders of Byala River - the second largest protected area in the Eastern Rhodopes (1532 ha), declared to protect a unique landscape in Bulgaria with an exceptional diversity of rare and endangered species of plants and animals. It covers the most attractive part of the middle part of Byala/ White River with a beautiful complex of meanders (the area of the villages Zhelezari and Meden Buk), where are some of the few natural forests of sycamore trees, as well as lianas in our country included in the national Red Book.

The most difficult to access protected area in the municipality is Hambar Dere with an area of 101 ha, created to preserve a complex of natural riparian forest formations, xerophytic oak forests and habitats of protected and rare species of fish, amphibians, reptiles, birds and mammals. It covers the lower part of Hambar Dere river before its confluence with Byala River (the area of the villages of Kazak and Bial Gradets), whose banks are covered by an almost continuous strip of virgin oak forests over 100 years old (blagun, cer, hairy oak), groves of willow, alder, lianas and floristic species with high conservation status.

The smallest protected area in the municipality is the Likana area (3 ha), which contains the only locality in Bulgaria of the wild orchid Dremnikov Pollack. Known as the kingdom of orchids, the area attracts with its impressive rare plants, including 15 species of orchids [15].

In the **municipality of Madzharovo**, near the village of Gorno Pole, there is a natural landmark called Kovan Kaya (Kosher Rock or Bee Rock) - one of the largest rocks with Thracian niches in Bulgaria. The name is due to the appearance of the massif with dozens of cavities, located in the valley of Arda River, near the road between Haskovo with Krumovgrad. The niches are more than 100, at first glance without order and logic. There is no unequivocal opinion on what they were used for - for rituals dedicated to the revered Thracian deities, or for burial chambers. The relief forms, the water resources and the biodiversity are attractive for the tourism in the region. The rock massifs Kulata, Momina Skala, Sivridikme, Hisarya, Patronkaya, Okopa, Meneka are also exceptionally beautiful. A particularly valuable resource for the development of water and fishing tourism is Ivaylovgrad Dam, whose mouth is located in the municipality. There is a project for construction of a tourist complex near the village of Malki Voden that has not been carried out. Visitors here are mostly foreigners with a special interest in observing vultures, as well as organized groups staying in the region of Haskovo, Kardzhali and Stara Zagora, who come on day trips to Madzharovo [16].

Discussion

Current state of tourism and guidelines for sustainable development

The Rhodope Tourist Region has positive rates of development, caused, on the one hand, by the growth of business opportunities and on the other, by the increasing tourist flow due to the main tourist sites. One of the main goals in the updated National Strategy for Sustainable Tourism Development 2014 - 2030 regarding this region refers to its positioning as a destination with its own brand for mountain and health tourism based on its mountain and spa natural resources [17].

The Rhodopes are one of the best mountains with huts, hotels and various other accommodation. Large mountain hostels are: Martsiganitsa, Dobra Voda, Skalnite mostove, Studenets, Trigradski skali, Chernatitsa. The tourist superstructure around the dams, the mineral springs and, of course, in the largest ski

resort in the region - Pamporovo has been successfully developed. Summer and winter tourist marking is maintained. There are very good conditions, both for hiking and cycling due to the rounded shapes of the terrain, and for motoring due to the good transport security [18]. Pamporovo is the main ski center in the area. Most of the ski slopes in the resort start from Snezhanka peak. They are located at an altitude of 1926 m to 1,400 m and have varying degrees of difficulty. They are sufficiently provided with chair lifts and ski lifts. Other ski resorts in the area are Tsigov Chark and Chepelare. Their infrastructure is under development. The interest of investors in the region is significant [19, 20]. Large-scale construction projects are about to start - hotels, luxury holiday villages with parking lots, restaurants, swimming pools and all amenities for tourists. Additional tracks with modern facilities are to be built.

In recent years, alternative tourism is extremely popular, attracting significant tourist flows due to the diversity of the offer, the personal attitude towards the tourist and the rich opportunities for various experiences it offers. The tourist region of the Rhodopes has the potential for the development of many types of alternative tourism: adventure, rural and ecotourism, cave tourism, hunting, photo safaris, etc. The creation and offering of diverse and specialized tourism products requires activating the resources of municipalities and building adequate infrastructure for the needs of attractions - identification, design and labeling of tourist (eco) trails and health trails, trails for climbing, horseback riding and cycling, off-road routes, picnic areas, signposts, information centers, etc. In order to promote them, there is a need for fruitful marketing and advertising activities, as well as for the integration of the tourist offer, in order to be able to cover specific market niches and to contribute to the improvement of revenues in the local economy. At the same time, increased care is needed to protect existing natural resources.

A complex set of biogeographical, historical and political factors are the reason why many of these resources have retained their high importance to this day. The territory of the Rhodope tourist region is characterized by an exceptional diversity of plant and animal species, a significant part of which are endangered worldwide and in Europe, as well as a large number of rare, endemic and relict species. A rich variety of habitats with high conservation value is preserved here, but the most important conservation element is the preserved natural landscape. This is one of the few territories in Europe in which the disturbances of the natural landscape are mainly of point, island and linear nature, and their area does not exceed 5% of the geographical area of the territory [21]. For more than 20 years, however, the Bulgarian conservation community has made unsuccessful attempts to protect adequately all this. The latest campaign, conducted by Green Balkans and the Bulgarian Union for the Protection of the Rhodopes, accompanied by long-term research and evaluation, has finally been successful - the legal procedure for declaring one of the largest protected areas in Europe - Western Rhodopes Nature Park has been launched [ibid].

During the global covid crisis, the tourist region of the Rhodopes reveals its huge potential. Covid-19 has an exceptional effect on domestic tourism and this analysis will still concern people in the industry, but in any case the growing interest and great popularity of the area are undeniable: the wild hills are literally tamed by urban crowds [22]. According to the website 24rodopi.com, the total number of overnight stays in July 2020 only in Kardzhali region is 9869, of which only 627 were foreigners. The revenues amount to over BGN 400,000. The growth of overnight stays compared to the same month of the previous year was by 7.2%, and their number in 1 and 2 star accommodation establishments increased by 37.9%. Kirkovo municipality already appears as one of the centers of tourism in the Eastern Rhodopes. Eight years after the opening of the Makaza border crossing, 44% of the accommodation in the whole district is concentrated in it. There is a total of 19 hotels and villa complexes in the area, and the beds are over 400. Every fourth tourist in July visited and spent a night in Kirkovo. Only for the first 15 days of August the number of tourists accommodated in the municipality is 4 437 people. From the beginning of spring to the beginning of September 2020, over 15,000 tourists from all over the country enjoyed the beauty of the Eastern Rhodopes, passing the Paradise View eco-trail (near the cave Utroba) and the meanders of Kardzhali dam [ibid]. The strong influx of tourists confirms the Rhodopes as an increasingly popular destination, offering its hospitality in the four seasons of the year.

Conclusion

The magnetism and charm of the Rhodope tourist region are hidden in the harmonious combination of authentic nature and unique historical and cultural heritage. The rich potential of natural and anthropogenic tourist resources of high quality implies that these resources need to be "composed and packaged" in unique and attractive tourist products. However, their creation, development and imposition on the market requires professional and competent communication and marketing activities. They should be implemented in accordance with the goals and priorities set in the Strategy for Sustainable Development of Tourism in Bulgaria, as well as in unison with the marketing strategy of the Rhodope tourist region, when such a strategy is developed.

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