

BALNEOLOGICAL TOURISM IN FOJNICA – STATE AND PROSPECTS

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Balneological and health tourism Fojnica is based on sources of thermal mineral waters created by Mesozoic, mainly limestone and dolomite with the Mid-Bosnian Schist Mountains in the core. These forms of tourism are the basis of the overall economic development of Fojnica. Applying the standard classification on the basis of realized analyzes, it can be concluded that Fojnica thermal water belongs to weak mineral waters hydrocarbon - sulphate - calcium - sodium type, that is by gasses-nitrogen, per-radioactive radon, according to temperature - hypothermal. Also it is worth to note that it contains rare trace elements such as lithium, strontium and rubidium in balneotherapy terms very important for complex effects of water on human health.

Tourist traffic is based on accommodation facilities in Reumal, Aquareumal and newly built hotel Natura. Above mentioned objects achieved far more overnight stays than in any other institution of a similar type in Bosnia and Herzegovina. In tourist traffic there is no pronounced seasonal character, as opposed to the tourist destinations in Bosnia and Herzegovina predisposed to the development of the beach and mountain tourism.

In the modern period the spa facilities in Fojnica try to restructure the tourism industry from strictly healing tourism in wellness, sports and recreation tourism. Accordingly, it is necessary to a greater extent attribute tourist valorisation of natural and social elements of the geographic environment where municipalities Fojnica has. In this way, developed to complement the tourist industry and partly relieve the primary tourism potential presented by Fojnica spas.

Keywords: *Fojnica, spas, balneological tourism, health tourism, wellness, Reumal, Aquareumal, tourist traffic*

INTRODUCTION

Balneological tourism is tourist branch, which is based on the use of thermo-mineral waters in tourist traffic. This natural resource is one of the earliest used on which to develop the oldest tourist-medical branch called balneology (balneum, lat. - Bathroom, logos, gr. - Science). Treatment in the thermal mineral waters, the use of mineral spring water for drinking and inhalation of the released gases from the water at the point of rising, is a very ancient therapeutic method, almost old as civilization. (Spahić and Temimović, 2014) Thermo-mineral water, as a natural tourism resources, are differently tourist valorized and

used for spa treatment, recreation, rehabilitation, and they have, in accordance with the above, different tourist value. The level of tourist valorization of thermal mineral water depends on their exploration, ways of capturing resources, their yield, chemical composition, understanding of modern medicine about the healing properties of water, the tradition of the population, medical equipment, tourist and catering facilities and other features.

Very important properties of thermal mineral water, as well as attributive element of natural geographic environment, whether for therapeutic, recreational, and sometimes aesthetic properties. Using thermo-mineral waters for tourism in the world has a very long tradition and is often basic of new settlement resorts (spas) almost fully committed to the admission and stay of tourists. Some of these spa resorts have become world-famous, such as Karlovy Vary, Biarritz, Herculaneum, Baden Baden, Merano and others. Our country is very rich with spa and thermal resort of which the most famous spas are in Fojnica, Olovo, Ilidza, Teslic, Bijeljina, Gradačac, Prnjavor, Laktasi and Kozarska Dubica. Often, as is the case precisely in Fojnica, these thermal mineral springs and spas are the basis of economic development of the entire municipal economy.

BASIC CHARACTERISTICS OF TERMOMINERAL WATERS IN FOJNICA

Classification of termomineral waters

Mineral waters are considered to be those waters which in one liter contain more than one gram of dissolved mineral substances. In the case when quantity exceeds 50 grams in one liter of water, such water is referred to as solutions. (Stankovic, 2000) Numerous and various medical research has identified the healing properties of mineral water and a solution for the treatment of a whole range of different diseases and injuries. Because of these above facts, often, for mineral water uses the term healing water. It is noteworthy that healing waters include those waters that have less than one gram of mineral substances in one liter of water, if it contains an increased amount of dissolved gases. If the content of radium emanation of gas (radon) is high, water is called therapeutic radioactive water.

Whether talking about the mineral, gas or radioactive waters, those origin is from the deeper stratum of the earth's crust, and they very often have a higher temperature and because of that are called thermal- mineral waters. According to the water temperature, the mineral water is divided into cold and hot or achrotopegae or akrothermal. The first group of water is often used as a refreshing drink, because of their medicinal properties, pleasant taste and sparkling looks. As a basis for the development of balneological tourism these waters are used to treat digestive diseases or urinary infections. For Fojnica, from this aspect, far more significant are thermal waters applied in the treatment of illness or injury for which its needed a higher water temperature. Spring water, whose temperature exceed water temperature of normal sources are referred as thermal and divided into:

- Hypothermal,
- Homeothermal and
- Hyperthermal spring water

Hypothermal water have a temperature between 20°C and 34°C, homeothermal have the approximate temperature of the temperature of the human body, with range from 34°C to 38°C, while hyperthermal sources have water temperature higher than 38°C. If the thermal waters have dissolved minerals this kind of water is called thermo-mineral water. (Spahic and Temimović, 2014) From everyday living it is known that all mineral waters are not healing waters, nor are all hot waters are mineral. To some groundwater considered mineral water it is essential that contains a minimum of exactly a certain amount of mineral matter, which is determined in relation to the limit value to ordinary (sweet) and mineral water.

Thermal mineral waters in Bosnia and Herzegovina occur with geotectonic complex of central and inner Dinarides. Most mineral and thermal waters are associated with deep fault zones, which conditioned the moder hydrothermal convection ascendant in deep karst. In addition, there may be in places sariaza Triassic carbonate chalk over fishe, subordinated, an primarily in the cold contact with Paleozoic carbonate rocks. It is not uncommon, cold contact of ultramafic and carbonate and Jurassic-dabase floral series with carbonates. In Central Dinarides thermal mineral water generate from the Mesozoic, mainly limestone and dolomite with middle-bosnian schistose mountains in the core, as well as those in Fojnica. Paleozoic sediments are the foundations for the emergence of thermal and mineral water in the Una-Sana and Drina Paleozoic, such as those near Bihać, Sanski Most, Srebrenica and Višegrad. (Spahić&Temimović, 2014.)

Table 1. Distribution of mineral waters according to the prevailing content of minerals and gases

Component (g/l water)	The border with fresh and mineral water	The minimum for inclusion in the category of mineral water	Name of mineral water
Carbon dioxide	0,250	0,750	Sour
Hydrogen sulfide	0,001	0,010	Sulfurous
Radon (Mach units)	3,500	10,000	Radon
Lithium	0,001	0,005	Lithium
Iron	0,001	0,010	Ironian
Arsenic	0,0001	0,001	Arsenical
Bromine	0,005	0,025	Bromine
Iodine	0,001	0,010	Iodine
Radium	10 ⁻¹¹	10 ⁻¹¹	Radium
Metaboric acid	0,05	0,050	Borna
Silicic Acid	0,025	0,075	Silicon

Source: (Ovchenikov, 1955.)

The first serious scientific analysis of the thermal water in Fojnica did E. Ludwig in 1888. Applying the standard classification on the basis of realized analyzes, it can be concluded that Fojnica thermal water belongs to weak mineral waters hydrocarbon - sulphate - calcium - natrium type, that is by gasses-nitrogen, per radioactive-radon, according to temperature-hypothermal. Also it is worth to note that it contains rare trace of elements such as lithium, strontium and rubidium, in balneotherapy terms very important for complex effects of water on human health. Table 2 shows the basic characteristics of the thermal water. A remarkable thing about this mineral water, compared to other known water, is its weak mineralization, with significant presence of radon as a source of radioactivity moving within acceptable limits. Inhalation of air containing radon, ingestion of water containing radon and treatment in baths, underwater massage and bathing in hot tubs and swimming pools, are treated with rheumatic, skin, neurological diseases, cardiovascular disease, and metabolic disorders.

Table 2. Physical and chemical characteristics of termomineral waters in Fojnica

Physical characteristics		Chemical composition			
		Anions		Cations	
Water temperature	30 °C	Bicarbonates mg HCO ₃ /l	475,8	Natrijum mg Na/l	22,6
Color	No color	Sulfate mg SO ₄ -/l	24,96	Kalijum mg K/l	2,4
Flavour	hydrogen sulfide	Chlorides mg Cl/l	8,1	Kalcijum mg Ca/l	68,69
Transparency (turbidity)	Clear	Consumption KMnO ₄ mg O ₂ /l	0,7	Magnezijum mg Mg/l	12,58
Reaction pH	7,3	Free carbon dioxide mg CO ₂ /l	11	Željezo mg Fe/l	nema
		Hydrogene sulfide mg H ₂ S/l	1,16		
		Nitrite in dh	21,84		
		Constant hardness u dh	-		
		Total hardness	12,47		
		Solution O ₂ mg/l	5,92		
		Total mineralization mg/l	615,4		
		Evaporation residue	260 mg		

Source: (Kasić, 2013)

Balneological and health tourism in Fojnica

Balneological and health tourism are not synonymous terms. In the seventies of the last century, the first attempts of determination and definitions of health tourism, health tourism posing as border activity between medicine and tourism, in which the economic operators in the field of tourism and health authorities organize the stay of tourists in the spa and climatic locations primarily for the prevention of diseases, rehabilitation and treatment with the help of natural healing factors. (Spasojevic&Susic, 2011) The World Health Organization WHO (World Health Organization) and the International Association of scientific tourism experts AASET (International Association of Scientific Experts in Tourism) describe medical tourism as a journey for the use of thermal mineral water and climate to improve health. Analyzing theoretical knowledge about health tourism can be seen that it is a specialized tourist-health-offering developed on the basis of spas, spa and climate places. Resource base of health tourism, in the narrow sense, make natural healing (healing thermal mineral water, medicinal mud - peloids, medicinal oil, medicinal air, medical infrastructure and professional staff), while medical tourism, in the broad sense, involves the use of all tourist attractions, that during their stay can meet individual needs for treatment and recovery, but with the improvement of health, exercise and recreation, cultural education and participation in the events.

Health tourism is, in fact, developed from spa tourism based on thermal springs and healing potential of mineral water. Following the definition of ESPA-e (The European Spas Association), the word "spa" means "mineral resource" or "healing place where there is a mineral spring." The essence of the idea is the availability of such sites to ensure appropriate, not only tourism, but also the health infrastructure and facilities for guests who visit them with a very specific purpose. (ESPA) In other words, spa tourism is a limited

concept of health tourism and includes the type of health tourism which is being implemented in spa centers in order to cure certain diseases, improve the psycho-physical state of health or relaxation of the body.

Spa or balneological tourism in Fojnica in the modern process of transformation of the tourist offer experiencing the transformation from pure spa to health tourism. This means diversification of supply, improving the offer of stay of visitors and the creation of a number of different programs for different needs of tourists. For example in Fojnica, this transformation involves the transformation of healing spa facilities in the modern decorated and enriched programs centers that offer programs for prevention, rehabilitation, wellness and other sports and recreational program, which attracts not only the patient to whom the state finances prolonged treatment and rehabilitation, but also healthy guest who is aware that it is necessary for their own health, fitness and self-financing his holiday and stay in Fojnica spas.

Almost the entire economic development of Fojnica is based on the development of tourism and health balneological tourism. "Fojnica is spa center – and center of recreation, adventure, sport and mountain tourism, secured by the conditions for enterprise development and employment, a clean environment and healthy food, with its infrastructure and efficient local government, which in cooperation with businesses and citizens to create conditions for a better life and be an example to developed local communities." (Excerpt from the Strategic Plan of Fojnica 2010-2015) It is significant to note that the only spa complexes Fojnice may constitute an independent tourism potential, while all other attribute natural and social elements of the geographic environment can only represent complementary tourist potential. As a result, it is quite justified all material investments in order to increase accommodation capacity and offer enrichment in spas Fojnica and reliance of tourism on the development of health tourism. The importance of health tourism is even greater if we realize European trends, where over 10% of clients traveling to different medical treatment abroad, resulting in economic impacts of over 12 billion euros per year. In a world of constantly growing trend in demand for specialized medical and recreational centers that offer a combination of treatment, rehabilitation and recreation. Within the context of enrichment of the offer and extension of the season, the Mediterranean destinations built a modern tourist structure with a number of health and recreational facilities, serving the offer over 160 million visitors a year. Developed European tourist countries have a wealth of experience, a long time even two centuries, the use of natural factors and especially in health, thalassotherapy and balneotherapy centers and intended mostly to local clientele within the health and social security, but more and foreign demand. From over a thousand spas or hydrothermal sites across Europe almost one third of the sites are located in Germany (340), 10% in France (198), a significant number recorded in Italy, Austria and Switzerland, who now make up a significant segment of the tourist offer in the form of health tourism (Geić, Geić&Čmrlec, 2010)

According to the Tourism Development Strategy of the Republic of Serbia, beneficiaries of health tourism are mostly females, although in recent years noticed a steady growing interest in men. They are between 35 and 55 years old and have secondary or higher education. Mainly living in urban areas or suburbs, and visit spa destinations frequented mostly childless. The main motive is the recovery and rehabilitation, recreation, proper nutrition and weight reduction, education programs and the like. These guests prefer to deal with and outdoor activities such as golf, cycling and hiking, and prefer to learn about the cultural and historical heritage of the environment in which there are. They do not have a

seasonal preference. The choice of destinations most rely on recommendations from friends and acquaintances, but will take into account the recommendations of travel agencies or book or guide, also use the internet to raise awareness. Similar conclusions were derived from a study of spa tourism in the world in 2009, where it is noted that a large number of women and people over 30 years of age are users of wellness services and products, but has relatively few men and young people. The reasons for this trend are not fully explored, but of course that women have always been more interested in the physical appearance, cosmetic treatments, the issue of body weight and diet than men. Men prefer other forms of relaxation, some with wellness dimension such as sports or fitness activities. Popular activities for men include saunas, steam rooms and gym. On the other hand, young people (18-25 years) do not have a great need for wellness products and services because they suffer less stress than the population over 30 years of age. In order to attract this population, it is necessary in propaganda to use words such as: fitness, escape, entertainment and the like. (Smith & Puczko, 2009)

Accommodation facilities and tourist traffic in Fojnica

Spa complex of thermal mineral water is the main carrier of the economic development of the whole municipality of Fojnica, situated in a group of health, wellness, spa and health resort and spa tourism. For the purposes of the development of specific types of tourism has been established economic entity RRC "Fojnica" which is a modern equipped center for medical rehabilitation, and within which they operate: Hotel "Reumal" with pool, sauna, a gym, a restaurant, café, lounge with open fireplace and a complete medical content Rehabilitation and new hospital with all necessary medical treatment. The center covers an area of 600,000 m² and useful indoor space covering 20.845 m², with a total of 282 accommodation units and 520 beds. The center also consists an apartment complex "Aquareumal" (for accommodation, recreation, and consists of 16 buildings with 74 apartments), as well as the "Waterpark" on 12,000 m² of which 1,000 m² of water surfaces with different content. Within RRC "Fojnica" it is planned to build additional accommodation capacities in line with the tourist demand.

At the present stage of development, Spa Reumal Fojnica has the following amenities:

- 282 accommodation units of which 70 single rooms, 164 double rooms, 8 triple rooms, 21 rooms adapted for people with disabilities, as well as 19 apartments (total 520 beds);
- Restaurant Reumal (capacity 450 seats), restaurant New Hospital (capacity 120 seats), restaurant Kamin (capacity 60 + 65 Street), restaurant Stara Planina (capacity 70 + 100 garden), a la carte restaurant (capacity 90 seats) and aperitif bar (50 seats);
- Two indoor pools of 120 m²;
- Three closed rooms for aerobics, Pilates and so on. The total area of 200 m²;
- Five rooms for massage, a total area of 80 m². Wellness Center Reumal opened in September 2013 and covers an area of 280 m². Comprises Finnish and steam sauna, jacuzzi, underwater massage, salons for different types of massage, Kneipp and hot benches, fitness room with treadmills and bikes, a beauty salon with the most advanced equipment, relax room designed for rest and relaxation, and vitamin bar for refreshments.

The modern wellness center is part of the strategic expansion and enrichment of the tourist offer of Reumal, and Fojnica, making available specific services in this region. In cooperation with partners wellness center is equipped with modern appliances whose application achieved remarkable results in the field of aesthetics, cosmetics and wellness. Beside traditional wellness services such as massage and sauna center offers treatments in the field of cosmetics and aesthetics. The offer should be particularly emphasized with cavitation and radiofrequency treatments, modern and non-invasive procedures of painless removal of fat deposits, as an alternative to liposuction. The effects of these treatments are numerous: stimulate metabolism, removal of fat, eliminate cellulite, skin tightening and body shaping.

Table 3. Tourism traffic in the spa Reumal Fojnica

	2006.	2007.	2008.	2009.	2010.	2011.	2012.	2013.	Average
Total number of overnight stays	141.925	153.495	163.934	150.414	148.349	144.423	139.086	150.520	149.018
Occupancy (%)	74,8	80,9	86,4	79,3	78,2	76,1	73,3	79,3	79,0

Source: (Spahić & Temimović, 2014.; Marketing strategy, 2014.)

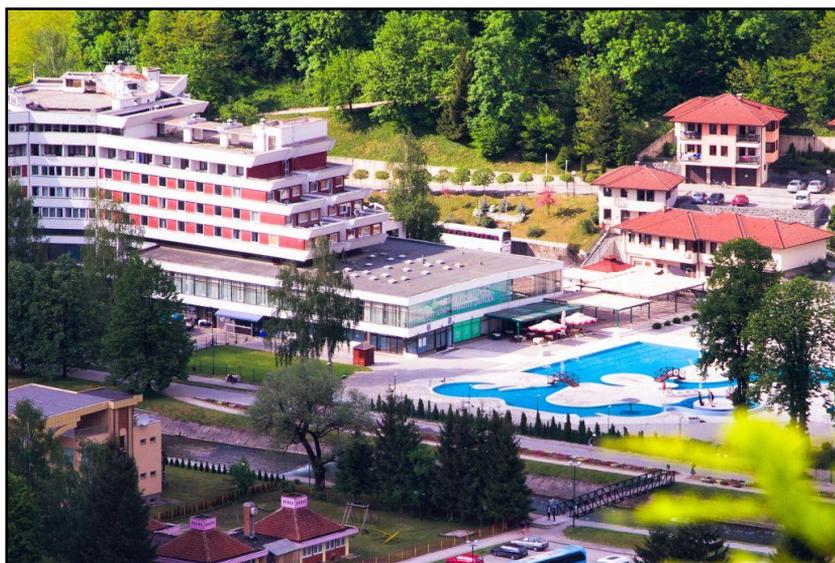


Fig. 1. Spa Reumal in Fojnica

From 2006 to 2013 the number of overnight stays in Reumal varied from approximately 139,000 in 2012, to a record, almost 164,000 in 2008. In the analyzed period spa-complex Reumal realized 149,018 overnight stays, which is far more than any other similar complexes in Bosnia and Herzegovina. For example, Banja Vrucica - Teslic, which has nearly 900 beds, is the second with most overnight stays in Bosnia and Herzegovina with fewer than 115,000 overnight stays on average. This is compared to Reumal less of

34,000 overnight stays. As an exemplar can serve the famous spa Aquaterm in Olovo which generate, on average, 26,000 overnight stays. In other words, the tourist traffic in Reumal is five times higher than the tourist traffic in AQUATERM in Olovo.

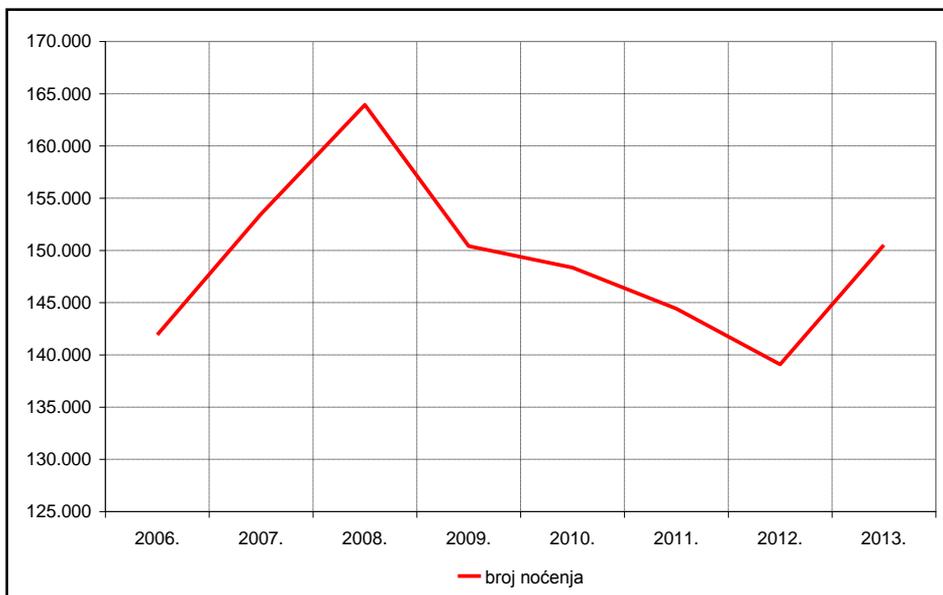


Fig. 2. Tourism traffic in Reumal in the period 2006-2013.

Total occupancy of accommodation for the same period ranged from 73.3% to a maximum of even 86.4% in 2008. The average level of usage of accommodation capacities Reumal is 79%. These figures show that tourism development in Fojnica has no seasonal character, and that we can talk about year-round tourism development. Therefore Fojnica is one of the most important tourist locations in Bosnia and Herzegovina and that, in contrast to eg. Olympic Mountains or the Bosnian coast whose accommodation is filled only during the winter ski or summer swimming season, has a year-round almost uniformly filled accommodation facilities .

Based on the latest survey there is noted that the health and rehab guests (patients) generate about 85% of health tourism demand and wellness guests 15%. These data suggest that the primary consumer group in Reumal people are one with health problems and elderly people. Most of the tourist traffic is realized by domestic guests (84%), while foreign guests mostly come from the Croatia, Slovenia and Libya. All these indicators point to the most developed primarily with the medical tourism that is realized by offering a variety of health programs: balneo therapy, physical therapy, physical therapy for disabled users, and cardiorehabilitation.

The modern period in the tourist market positioning is characterized by investments to expand basic offers with new sport, recreational and entertainment facilities. One of the most tangible investments and market profiling for different consumer segments tourist was carried out by construction of a new modern tourist apartment complex called Aquareumal, and the construction of a water park Aquapark and Aparthotel Natura. Apartment complex

Aquareumal includes 16 objects of type "Bosnian villa", divided into four parts: Terra (Earth), Aeris (Air), Flamma (Fire) and Aqua (Water).

Tourism in Aquareumal in Fojnica is measured on average, with an additional 18,000 overnight stays in the annual average. Based on the statements of employees of Aquareumal, average stay of tourists was 2.7 days, which is dominated by domestic guests (88%), while the rest of the tourist industry make guests from the Croatian, Slovenian, Serbian, and Arab countries. Inside the complex, in addition to restaurants and shopping mall, there are conference halls and restaurants "Terra" and "Avlija". Tourist offer of Aquareumal is extended by the construction of the aquapark area of 14,000 m², which consists of recreational pools and children's pools, underwater massage, whirlpool tank, wellness treatments in the open, sandy and grassy beach, a beach volleyball court, table tennis tables, children's playroom and so on. In this part of the tourist facility dominate one-day visitors interested in sport and recreational tourism.

CONCLUSION

Thermo-mineral springs, baths, accommodation and water parks are excellent tourist potential in Fojnica, which is, in the modern period, valorized in an extremely high level. In this way the tourist industry is the basis of the overall economic development of Fojnica. Traditional balneologic tourism related to thermal mineral springs even today represents the most significant aspect of tourism exploitation of space. Following the latest trends in tourism, spa Reumal and Aquareumal expand its tourist offer through new events for different tourist clientele interested in wellness, sports, recreation and beach tourism. Special attention to this clientele needs to be concentrate to the development of complementary types of tourism. Municipality Fojnica, extremely rich with attributive natural and social elements of the geographic environment, enabling the development of different types of tourism. In addition to the basic facilities that spa offers to its customers, spas program should have programs or organized short or long trips in some of the attractive tourist sites of the municipality, depending on the wishes of the user. In this way, health tourism would significantly facilitate to other forms of tourism, and therefore a stronger development of the Municipality. At the same time it may reduce the overload of the primary tourist capacity presented by Fojnica spas. The advantage of Fojnica spa, which is also a worldwide trend, is the vicinity of two smaller municipal ski center, which should be connected with good traffic and functionally bound, and plan to package programs. Among the tourist potentials that are of outstanding quality and may extend recent tourist offer were presented and the mountainous area of Vranica, Prokoško lake and river Fojnica, visits and tourist tours Franciscan monastery, Atik mosque or Tekijas in Vukeljići and Oglavak, mountains Bitovnja and Pogorelica etc. All these indicators point to the fact that Fojnica is one of the most important tourist areas in Bosnia and Herzegovina.

Literature

- Spahić M., Temimović E., 2014.: Termomineralne vode Bosne i Hercegovine u funkciji balneološkog turizma, *Acta geographica Bosniae et Herzegovinae*, br. 2, str. 65-75, GEOUBIH, Sarajevo;
- Stanković S. M., 2000.: Turistička geografija, Peto dopunjeno izdanje, Geografski fakultet, Univerziteta u Beogradu, Beograd,
- Ovčeničnik A. M., 1955.: Opšta hidrogeologija, Moskva
- Kasić A., 2013.: Istraživanje prirodne radioaktivnosti u mineralnim i termomineralnim vodama BiH, Doktorska disertacija, Prirodno-matematički fakultet, Univerzitet u Tuzli, Tuzla
- Spasojević M., Šušić V., 2011.: Savremene tendencije u razvoju zdravstvenog turizma u svijetu i Srbiji, *Teme, Časopis za društvene nauke*, Godina XXXV, br. 1., str. 149-162, Univerzitet u Nišu, Niš;
- Geić S., Geić J., Čmrlec A., 2010. : Zdravstveni turizam - egzistencijalna potreba u suvremenom društvu, *Informatol.* 43, str. 317-324., Split,
- Smith M., Puczko L., 2009.: Health and wellness tourism, Oxford, UK: Butterworth - Heinemann/Elsevier, Oxford
- Marketing strategija zdravstvenog turizma u prekograničnom području Bosna i Hercegovina – Srbija, 3K Consulting d.o.o. Srajevo, Sarajevo, 2014.
- Internet izvori:
www.reumal.ba (Pristupljeno: 27. 12. 2015.)
www.aquareumal.ba (Pristupljeno: 27. 12. 2015.)
www.espa-ehv.com (Pristupljeno: 27. 12. 2015.)

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