



## Chapter 1.5

# THERMAL SPAS IN MACEDONIA

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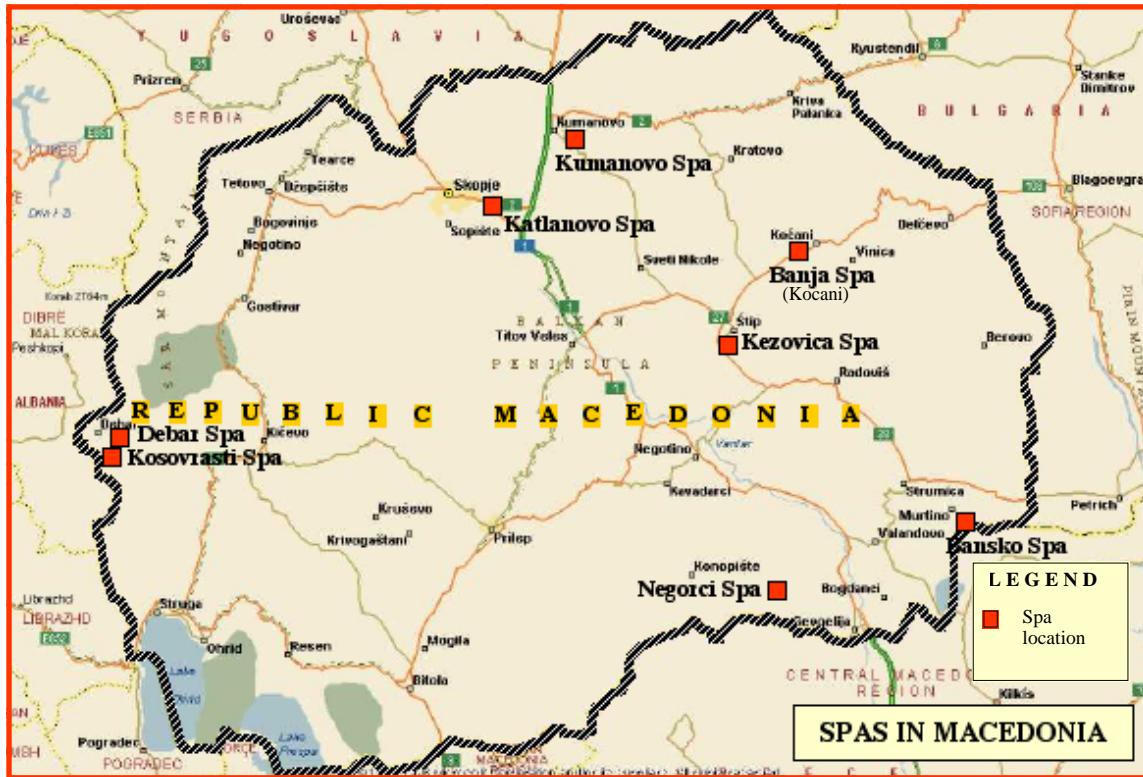


Fig. 1. Location of the spas in Macedonia

### Summary

Even with a long tradition in medical use of thermal waters, Macedonia doesn't have active thermal spas. A short summary of the situation, experience, problems, benefits of use and perspective is

made in this paper. It's evident that the approach to this economy sector should be generally changed in order to reach possible benefits. Orientation towards introduction of recreational activities looks as one of the feasible and economically justified solution.



Fig.2. Ruins of the Roman Bath in Bansko – Strumica

## Introduction

Appearance of the very large number of thermal and mineral waters over a such small territory as is Macedonia is connected to its diverse geological composition and continual tectonic processes over the past. Four main tectonic compositions can be identified, all with completely different composition and evolution of the relief:

- Serbian-Macedonian Massif
- Vardarian zone
- Pelagonia Massif, and
- West Macedonian zone.

Thermomineral waters with different physical and chemical characteristics appear above the rifts lines between them.

Temperature of the thermal waters differs, depending on the location and geothermal field in question. Highest is the temperature of the water in Bansko Spa (73°C), then in Banja – Kocani (55°C), Kezovica Spa (54°C), Katlanovo Spa (40.5°C), Debar Spa (38.6°C), Negorci Spa (38°C), Kumanovo Spa (31°C), etc.

The same is with the flows on disposal, i.e.: Debar Spa (91.2 l/s), Kosovrasti Spa (68.8 l/s), Bansko Spa (35 l/s), Kumanovo Spa (3.34 l/s), Kezovica Spa (5.4 l/s), Negorci Spa (1.8 l/s), etc.

From the chemical point of view, thermal flows can be divided in two groups:

Acidic thermomineral waters and sulphuric, jodic, radioactive, fluoric waters. Largest is the participation of the acid waters with the mineralization between 500-5,000 mg/l, most of them with excellent curative characteristics. Radioactivity of some of them is significant, as it is in Kezovica Spa (43.7 ME), Kosovrasti Spa (33.79 ME), Banja-Kocani Spa (26.75 ME), etc.

The use of thermal waters for medical purposes has been known from the ancient Greek and Roman times. Particularly Romans used to built luxury baths for public and private uses (Fig.2). After the declination during the mediaval times, the same intention has been followed during the long Turkish occupation with establishment of numerous public and private baths. After the First World War a more systematic approach to the problem has been taken (chemical analysis, medical investigations, etc.), however without building modern spa centers. The existing 7 spas have been built during the period between 1960 and 1980. After that, a new period of stagnation began, as a consequence of the economical and other influencing factors in the country and the whole region. During the recent 2 years some new initiatives to recover the situation are in flow.

Fig.3. Bath for medical treatment (Negorci Spa)

### 1. Curative characteristics

Curative characteristics of the spas are mainly connected to the chemical composition of thermal waters but also to the climatic characteristics of the spas location.

Debar Spa is located four km far from the town Debar, near to the Albanian border. It is at 780 m above sea level, below the Krcin and Desat montains. Climate is moderate but can be quite cold during the winter months. Thermal waters are of sulphur and iron type, depending on the source in question. The first ones are used for baths for curing rheumatism, ishias, eczemas and female illnesses. The second ones is used for drinking and baths and cure gastric, kidney and urinary, bronchial astma, diabetis, giht, and anemia illnesses. That is one of the older spas in Macedonia (about 700 years).

Katlanovo Spa is the oldest and most known spa in the country, lasting from the ancient Greek times. In the Roman time it was very important regional medical center. Spa is located 15 km near Skopje (capital of Macedonia), near the highway to Greece and in an isolated location in the mountain, with clean air and calm atmosphere. Several springs produce thermal waters of sulphur-jod type but also alcaline-carbon-acid type. Sulphur-jod waters are used for baths against rheumatism, paralysis, neuralgia, female illnesses, diabetis and consequences of injuries. Hot alkalin

waters and carbon/acid waters are used against problems of circulation of blood, stomach illnesses, high blood pressure etc. The cold alkalin and radioactive waters are used against stomach and urinal illnesses.

Banja Spa is 6 km far of the town Kocani and is also known from the Roman times. It has sulphur type thermal waters with low mineralisation and radioactivity. It is curative against rheumatic, skin and female illnesses, inflammation of joints, muscels and veins, stomach, gall and urinal illnesses.

Kosovrasti Spa is also near the town Debar, near the Albanian border. It is very near the Debar lake, at the height of 550 m above the sea level. The spa is about 700 years old, like the Debar Spa. It was very famous during the Turkish times, when was beautifully arranged. Thermal waters are very much sulphurized but also with carbonates. Some of them are of high radioactivity. They are curative against ishias, rheumatism, female and other illnesses.

Kumanovo Spa is about 3 km far from the town Kumanovo, near the railway line to Belgrade. Mineral waters of calcium-magnesium-iron type are curative against stomach, kidney, liver, urinal illnesses and high blood pressure. It is located in a beautiful surrounding with many recreational possibilities.

Negorci Spa is located at the far South of Macedonia, near the town Gevgelia. Cli-

Fig.4. Indoor pool for medical treatment (Negorci Spa)

mate is typically Mediterranean. Waters are curative against rheumatism, ishias, neuralgia, paralysis, female and skin illnesses. The spa is known from very old times but it was arranged in 1903 by the local Turkish pasha and later on after the Second World War.

Bansko Spa is located below the mountain Belasica, in the village Bansko. The spa was known in ancient Greek and Roman times but later on abandoned. Then, 300 years ago it was renewed by the Turks and is in use continually until now. The biggest spa center is hotel “Tsar Samuil” but there are also several small hotels and resthouses. Thermal waters are the hottest ones in Macedonia (75°C) and is of iron-sulphur type. It is curative against rheumatism and ishias.

Kezovica Spa is located at the suburb of town Shtip in East Macedonia. It's known from very long ago but there are no data about the real its origin. Thermal waters of chlorid-hydrogen type with quite high radioactivity (43,7 Mach) and high temperature (66°C). They are curative against rheumatism, joint inflammations, female illnesses, some skin illnesses, etc.

There are also additional 19 thermo-mineral springs in the country, convenient for balneological uses. However, the plans to establish several new spa capacities have been disturbed with the recent political and economical destroying of the country.

## 2. Energy use of thermal waters in spa centers

Temperatures and flows of thermal waters in spa centers in Macedonia, at least of the known springs and wells, allow energy uses in only some of them, i.e. in Bansko, Negorci, Katlanovo and probably in Debar and Kosovrasti..

Presently, the following uses and activities are known:

In Bansko Spa, the water is used to heat a greenhouse complex of 3.2 ha, hotel “Tsar Samuil”, and a number of small plastic houses. It is also used for sanitary warm water preparation for the hotels in the village and the recreational swimming pool in the hotel “Tsar Samuil”.

In Negorci Spa, all the spa complex is heated with thermal water and all the warm sanitary water supply.

Fig.5. Indoor swimming pool (Hotel “Car Samuil” – Bansko

Fig.6. Plate heat exchangers in Hotel “Car Samuil” – Bansko

The best illustration what economically means such use of geothermal energy is the case of the hotel complex “Tsar Samuil” in Bansko. They are saving

above 300.000 US\$/year by substitution of heavy oil with geothermal energy. In the case of Negorci Spa, it's above 100.000 US\$/year.

Fig.7. Geothermal heating elements (Negorci Spa)

Fig.8. Geothermal heating elements (Negorci Spa)

Presently, there is an action in Katlanovo Spa to introduce geothermal heating except the use of heavy oil. Above 200.000 US\$/year savings are expected.

The World Bank pre-feasibility study resulted with a very positive economical justification of the necessary investments. When the other spas are in question,

### NUMBER OF BEDS IN MACEDONIAN SPAS

1.	Katlanovo Spa	470
2.	Debar Spa	282
3.	Negorci Spa	260
4.	Bansko Spa	160
5.	Kumanovo Spa	72
6.	Kocani Spa (Banja)	130
7.	Kezovica Spa	105
8.	Kosovrasti Spa	100
	<b>TOTAL</b>	<b>1.579</b>

Table 1.

it's difficult to expect any serious engagement before resolving the problem with necessary investments in reconstructions of buildings and infrastructure, after ten years absence of proper maintenance. In any case, Debar Spa and Kosovrasti Spa have temperatures and flows of geothermal water enabling serious energy projects composition. However, due to the very aggressive character of the waters, quite expensive technical solutions should be introduced, conditioning careful studies in order to define technically and economically feasible solutions.

## 2. Problem of introducing recreational contents in the spas exploitation

Number of beds of Macedonian spas is quite small (Table 1). However, for such a small country, even that can be a good business. However, presently it is not because of several reasons:

a) Technical state of the spas facilities is very bad after ten years absence of regular work and maintenance. Neither the medical equipment is contemporary, nor the facilities (accommodation, restaurants, infrastructure, etc.) can attract normal people to spent some money there, except for proper medical reasons;  
 b) Prices, paid by the social insurance, are so low that cannot cover the cost of work. On the other hand, bad technical state of the facilities doesn't allow to introduce higher prices for guests who pay for the stay.

c) Engagement of beds is very low over the year (Diagram 1). Quite high concentration during the summer months, it's becoming very low during the others.

d) Only some spas are really "attractive" for guests (Katlanovo, Debar and Bansko). Note: Bansko has much higher participation than the presented one in Diagram 2, where the presented data are quite old. Not only the medical reasons are the reason for that. The influence of the location, quality of accommodation and facilities on disposal should not be neglected. The case of Negorci Spa is very much illustrative. After getting a new (very active one) manager two years ago, introducing the geothermal heating facilities and rearranging the environment, guests from Greece returned back and the annual engagement of beds increased and its distribution over the seasons more equalized.

The above listed leads to several important conclusions:

a) Absolute must is to reconstruct the spas projects and facilities. However, without their privatization, it is not possible to get investors for that. Presently, state still doesn't have a proper orientation how to perform it. Offered partial solution with "freedom" to offer service also to customers who are not using the "support" of social insurance are not attractive for foreign investors.  
 b) Introduction of new contents is necessary in order to make the stay in spas attractive also during the winter months. Very illustrative is the case of Hotel "Tsar

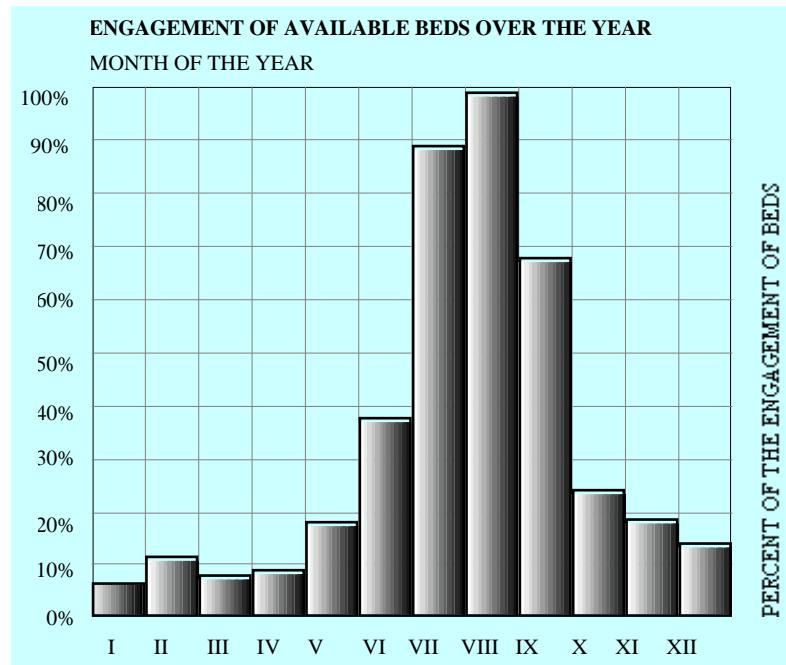


Diagram 1.

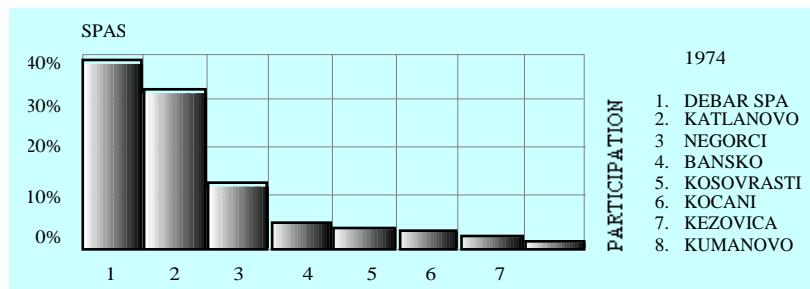


Diagram 2.

Samuil” in the early 90ties. The indoor swimming pool and the night bar have been the main attraction for young guests from Bulgaria, Greece and Strumica who filled the hotel during all the weekends in autumn, winter and spring months.

c) Change of the approach to the spa business in the country is necessary. Even the proper and attractive medical services are not enough to enable a profitable business with them. Social insurance is simply not able to cover the costs of it, at least in a poor country like it is Macedonia now. The case of Negorci Spa is very illustrative what can be done. By reconstruction of one of the accommodation blocks (with proper central heating and small pool with warm water for refreshment) and arranging a simple terrain for sporting activities, the spa became a regular location for out of

season preparation and training of sportsmen of the country. In addition, that's happening during the late autumn and winter months (normally weak engagements of spa's capacities) and they are paying a double price than the one recognized by the social insurance.

It's evident that the experience of more developed countries should be followed, i.e.:

a) Together with the privatization of the social insurance to perform the privatization of the thermal spas, too. Under the present conditions of political and economy organization of the country, it's not possible to perform any normal maintenance or profitable business with the existing capacities. Any kind of development is simply not feasible.

b) Even attractive for a group of consumers (older people), medical treatment cannot offer an all year around engagement of the capacities. This group of customers normally look to avoid absence of home during the winter months. In addition, it's a group of customers which doesn't spent money aside of the essential costs (accommodation and simple food).

c) In opposite, young people look for possibilities to have pleasure recreation during the parts of the year when the nature doesn't offer such possibilities. Indoor swimming pools, recreation centers offering "water" activities for "free" evening hours, pleasant restaurants and bars nearby, lovely parks for day and evening love walks, etc., particularly if located near the big town concentrations or highway connection roads can be a good base for attractive business. This group easy spend money for pleasure.

d) Introduction of an aggressive marketing must be an obligatory part of the business of such "water" centers. It's necessary to make it very carefully in order to keep the "normal" spa clientele (medical treatment) and, in the same time, to get the new one (recreational activities). Proper explanation that they are not "mixed" but kept strictly divided must be given but in that way that it's evident that the peaceful atmosphere for the first group is guaranteed but easy possibilities to "fill" the atmosphere of the second group are on disposal. Elder people likes to have the younger ones around, it's making the pleasant atmosphere for them, too.

### **3. Conclusions**

Following conclusions can be extracted of the elaboration made in this paper:

- Republic of Macedonia is reach with geothermal resources offering possibilities for development of a large spa business. However, presently, only 8 spas exist in the country and no development is present.

- Existing spas are in very bad state due to the economy situation in the country during the last ten years. All of them need large reconstruction and renovation works. Investors for such activities cannot be found in the country, i.e. foreign investments are the onliest possibility to perform them.
- Existing use of the spas for medical treatment only cannot guarantee their proper future. Poor social insurance cannot pay the real costs of work of the spa centers. Much higher contribution of guests coming as normal tourists should be ensured.
- The above said can be reached only by introduction of new contents which shall made the spas attractive not only for elder and ill people but also for the normal families and young people.
- Enriching the existing offer of recreational activities by introduction of modern trim and body building centers and centers for out of season preparation of sportsmen is one of the very prospective possibilities.
- For the spas with convenient locations (Katlanovo Spa, Bansko and Negorci Spa) introduction of "water" centers can be the real long term solution for profitable business. Realized studies show excellent economical feasibility based on existing market of guests from home and neighboring countries.

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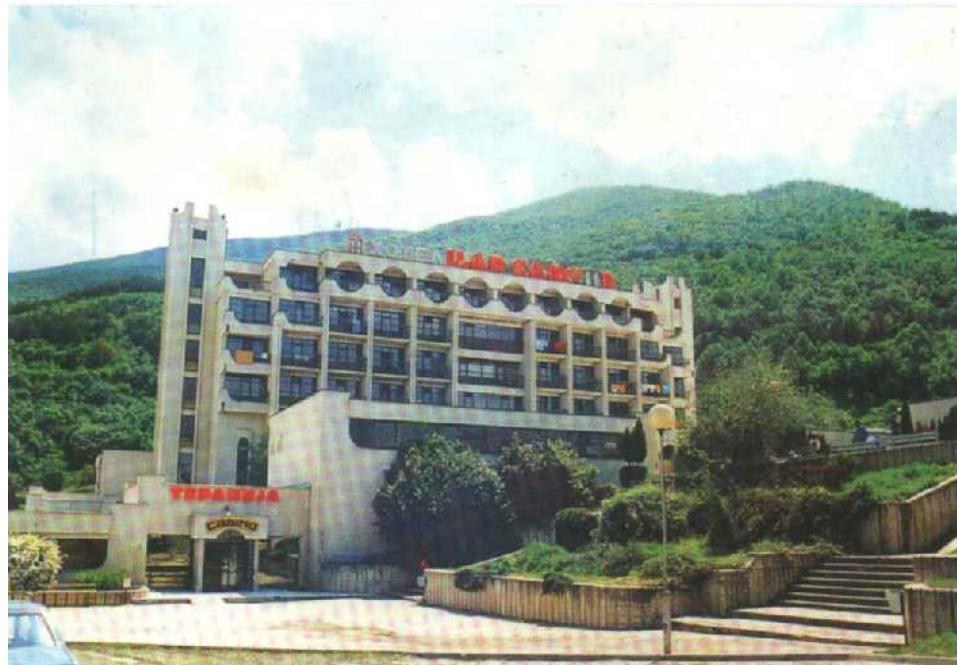


Fig.9. Hotel “Tsar Samuil” in Bansko

