

# The Usage of Mineral Waters in Bulgaria as a Factor for the Development of the Municipalities

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**Abstract:** *The main goal of this study is an analysis of the use of mineral waters in Bulgaria as a factor for the development of municipalities, increasing the quality of life of local residents and the development of mineral water-related tourism. The research is based on data from strategic documents of municipalities, interviews with their representatives, local residents and local business representatives. The relevance of the topic stems from the fact that the management of mineral waters faces a number of problems that create obstacles to their rational use. The results show that these problems are mainly related to administrative procedures and institutions responsible for mineral waters, as well as to regulatory requirements. The main recommendation is that in order to make full use of the mineral water resource, a national strategy, policy, comprehensive management approach and investment is needed to solve the identified problems at both macro and local levels.*

**Key words:** mineral waters, municipalities, Bulgaria, health tourism, problems

**Ключови думи:** минерални води, общини, България, здравен туризъм, проблеми



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## INTRODUCTION

The main goal of this study is an analysis of the use of mineral waters in Bulgaria as a factor for the development of municipalities, increasing the quality of life of local residents and the development of mineral water-related tourism. The relevance of the topic is caused by the fact that a significant part of the municipalities is in dire need of funds for the rehabilitation of the existing mineral water infrastructure, exploration and discovery of new wells. A number of administrative difficulties and regulatory requirements are cited as obstacles to drilling. The National Plan for Recovery and Sustainability does not provide for such funds. There is no National strategy for the use of mineral waters in Bulgaria.

At the same time, in the EU countries possessing hydrothermal resources, the respective municipalities have a leading role in the management of the potential of mineral waters and ground heat. For example, over 90 % of spa centres and bottling industry enterprises in Italy are developed and managed

by associations of business entities with the participation of the respective municipalities. Similar is the legislation and practice in France, Germany, Spain, Hungary and other countries rich in mineral waters and geothermal energy.

The present research is based on data from strategic documents of municipalities, interviews with their representatives, local residents and local businesses. The results show that in order to make full use of the mineral water resource, a national strategy, a comprehensive management approach and investments are needed to solve the identified problems at both the macro and local level.

## 1. LITERATURE REVIEW

### 1.1. *Studies of mineral springs in Bulgaria*

The first more serious geological and hydro chemical studies began at the end of the 19th and the beginning of the 20th century. Already in 1908, there was a significant number of baths that were known and available for bathing by the general public. There are numerous publications dedicated to the various mineral water deposits, including a description of the intended use and benefits of mineral waters, as well as part of the development of the resort industry. Most of these publications make a number of recommendations for improving infrastructure and public access to water. During the times of socialism, many health spas were built all over the country to provide affordable treatment. A number of small villages are turning into lively resorts with developed public infrastructure.

The years of transition after 1989 radically changed the development of mineral baths and the resort business. Financial problems are deepening, those related to ownership and management t appear, which in some cases lead to the total ruin of the built baths. The new institutional environment and the possibility of privatization give way to new and different interests in the built infrastructure, often even with a change in their purpose. '... private hotels are emerging from among the

abandoned buildings of spa complexes, and parks of mineral baths – monuments of culture, pending restoration, are divided into plots, ready for sale and construction.'<sup>1</sup>. The period after 1990 is characterized by a drastic reduction in drilling activities and reduction of geological exploration enterprises.

### 1.2. *Legal regime for the use of mineral waters*

The use and management of water resources in the R of Bulgaria is regulated by the Water Law (WL)<sup>2</sup>. According to Art. 6 of the WL and Ordinance No. 1 of 10.10.2007<sup>3</sup> on exploration, use and protection of groundwater, water bodies and water management systems and facilities in the country may be owned by the state, municipalities, individuals and legal entities. Mineral waters, included in a special list (Appendix No. 2 of WL), are exclusive state property. With regard to mineral waters – exclusive state property and public municipal property, the Law provides for two types of use by third parties for commercial purposes – concession and permit. Permit mode is when the purpose of water use is for treatment and prevention, recreation, hydropower, etc. The granting of a concession for the extraction of mineral waters is provided for in accordance with the Law on Concessions, when the water intake is intended for bottling, extraction of valuable substances and other purposes. Mineral water extraction concessions, exclusive state property, are not the subject of this study.

For mineral water deposits that are public municipal property, a permit regime is applied in accordance with the Law on Concessions and the Law on Municipal Property. The rights of use are in the form of a concession contract or a water intake permit issued by the mayor of the municipality. Municipalities can make decisions on free use, including setting a fee for water intake.

### 1.3. *Management of mineral waters*

The great variety of mineral waters in Bulgaria enables them to be used for various purposes and economic activities – for drinking

<sup>1</sup> From 'God's bath' to the spa.

<sup>2</sup> Water Law.

<sup>3</sup> Ordinance No. 1 of 10.10.2007.

and household purposes, treatment, spa, recreation, heating, etc. The operating resource is estimated at 1979.99 l/s, of which 1415.19 l/s, or 71.47 %, represent a free resource<sup>4</sup>. Despite the traditions of using mineral waters in Bulgaria, there is still a huge unused resource. According to the data of the Ministry of the Environment and Waters as of 09.08.2023 in our country there are: 102 mineral water deposits of exclusive state property; 51 deposits of public municipal property; 57 municipalities have mineral deposits provided for management, and 13 of them do not have permits issued<sup>5</sup>. According to the data of the National Concession Register (as of 08.2023)<sup>6</sup>, there are a total of 15 state-owned concessions, and a total of 18 municipal concessions.

The mineral waters used for heating and cultivation also fall under the purview of the Ministry of Agriculture for registered producers for cultivation of agricultural crops (vegetables) in heated greenhouses.

The Ministry of Health is the principal and owner of a significant part of the building fund in places, including 'Specialized Rehabilitation Hospitals – National Complex' EAD ('SBR – NK' EAD), which includes 13 specialized rehabilitation hospitals, located in established spa resorts. The list of resorts includes 19 spa resorts of national importance and 35 of local importance<sup>7</sup>.

The development of tourism and, more specifically, health, medical and spa tourism is the responsibility of the Ministry of Tourism. Of total,<sup>8</sup> balneology and spa destinations have been developed. Health tourism (spa, wellness, balneology, medical) is part of the National Strategy for the Sustainable Development of Tourism in the R of Bulgaria 2014-2030, and the Health Tourism Development Plan (2022-2025) has also been adopted.

#### *1.4. Mineral waters and the development of tourism*

The importance of mineral waters for the development of tourism (domestic and international) is widely advocated in publications<sup>8</sup>. In Bulgaria, spa tourism continues the traditions of balneology. The sector became part of the Law on Tourism, and a number of municipalities owe the development of tourism to the mineral waters of their territory. In 2022, over 13 % of tourist registrations in Bulgaria were in municipalities with mineral waters. In most municipalities, the share of Bulgarian tourists exceeds 90 %. There is interest in spa tourism from all age groups. Younger people usually associate spa tourism with recreation and relaxation, while older people often travel to improve their health.

In 2018, the Ministry of Tourism developed a total of seven balneology and spa destinations, which, however, do not fit into established tourist areas. At the same time, spa tourism and health tourism are the main channels for obtaining economic and social benefits from mineral waters for the respective municipalities, local residents and local businesses. The mere availability of mineral water without appropriate tourist infrastructure and easy access for visitors is not sufficient for the development of the relevant settlement<sup>9</sup>.

The Health Tourism Development Plan (2022–2025)<sup>10</sup> includes 4 strategic goals related to the imposition of the country's image as a health tourism destination; creation of competitive health tourism products; marketing and balanced development of healthy tourism. There is no data on monitoring and/or implementation of this plan, which remains yet another wishful document.

<sup>4</sup> Lichev 2011: 15.

<sup>5</sup> Ministry of Environment and Waters.

<sup>6</sup> National Concession Agreement (as of 08.2023),

<sup>7</sup> Council of Ministers Decision No. 153 of February 24, 2012.

<sup>8</sup> Bennett et al. 2004; Cohen & Bodeker 2008; Smith & Puczko 2008; Tabacchi 2010, and others.

<sup>9</sup> National Strategy for Sustainable Development of Tourism in the Republic of Bulgaria 2014-2030: 57.

<sup>10</sup> Health Tourism Development Plan (2022-2025).

### 1.5. Results of interviews with experts

For the purposes of the research, two in-depth interviews were conducted with representatives of the Bulgarian Groundwater Association and the Bulgarian Thermal Heritage Association. Engineer Velichko Velichkov from the Bulgarian Groundwater Association points out the following: there are administrative problems related to a lack of adequate solutions, common “slackness, lack of capacity bordering on criminal negligence”; difficult and complex procedures for obtaining a concession or permit regime; need for a strategy to ensure that mineral water will be used as intended; lack of a legally prescribed mechanism for new explorations, repairs and recovery of wells; most drilling was done in the 1950s and 1960s. Similar considerations were expressed by Prof. P. Penchev, chairman of the Bulgarian Groundwater Association.

In an interview with Ivo Anev and Nadia Ivanova from the Bulgarian Association for Thermal Heritage (07.05.2023), the following problems were highlighted: the good examples of using mineral waters are generally in municipalities where tourism is not developed. There, the resource is not ‘eaten’ by investors chasing profits and returns; in settlements such as Kresna and Zheleznitsa, they do not want investors, but that the water ‘stay’ for the local people; problems with long-term concessions, which are a form of privatization, where the concessionaire is mainly monitored to pay for

the concession; problems with the ownership of the baths, as there are municipal and private ones or part of ‘Specialized Rehabilitation Hospitals – National Complex’ EAD (such as Momin Prohod and Kostenets); only 30 % of the bathrooms have been rehabilitated for their purpose. The overall conclusion is that there is no adequate policy for the management of mineral waters as a resource for local development.

The need for unified management of mineral deposits and the development of a law or a national strategy for mineral waters are the subject of a number of discussions, round tables and debates<sup>11</sup>.

## 2. RESEARCH METHODOLOGY

### 2.1. Formation of a sample of municipalities

During the initial selection of municipalities for analysis, the following factors were taken into account – established routes for balneology and spa destinations developed by the Ministry of Tourism. From a total of seven routes, municipalities were selected considering their material and technical base (including accommodation) and degree of tourism development from the point of view of the life cycle theory of the destination<sup>12</sup>. After an interview with a representative of the Bulgarian Groundwater Association, taking into account the expert knowledge of the actual state of exploitation, flow rate, technical characteristics and development potential of the mineral waters, the initial grouping of the municipalities was changed as follows (**Tab. 1**):

**Table 1.** Regrouping of the municipalities subject to analysis

Developed	Developing	Not well developed	Sunset
Varshets	Chiflik	Rudozem	Starozagorski baths
Velingrad	Belchinski mineral baths	Kresna	Sliven baths
Hisarya	Ognyanovo	Kazanlak (Ovoshtnik)	Banya (Nova Zagora)
Sandanski	Haskovski mineral baths	Kostenets	
Pavel banya	Dobrinishte	Dolna banya	
Sapareva banya	Kranevo	Maglitzh (village Yagoda)	
Banya (Karlovsko)	Banya (Razlog)	Yakoruda	
	Rupite, Marikostinovo (Petrich)	Burgas mineral baths (Burgas)	

<sup>11</sup> Stoyanov 2023; Ivanova 2023; Dineva 2022; Zhikov 2023; Aleksandrova 2023; Explica – Global Metrics 2019; Bilyarska 2018.

<sup>12</sup> Butler 1980.

## 2.2. Research toolkit

Data collection was based on a combination of quantitative and qualitative methods. Quantitative data were taken from analysis of documents, reports and other publications, while qualitative data resulted from observation and semi-structured interviews. From the strategic documents of the municipalities data on changes in the number of populations, the demographic and educational structure, the number and size of local companies, schools and universities; road infrastructure, the quality of streets and sidewalks; green areas, access to sites with mineral springs, etc., have been extracted. The questions for the interviews refer to an assessment of the social and economic effects of the use of mineral waters in the respective municipalities. The field research was conducted by a team led by PhD student Margarita Boeva.

## 3. ANALYSIS OF THE RESULTS

### 3.1. Analysis of the results of the review of strategic documents of the municipalities

At the municipal level, a detailed review of strategic documents of the selected municipalities was made, including their Plans for integrated development (PIDM) or other municipal plans (where no PIDM has been adopted), as well as analysis of media publications on the subject. The strategic documents related to mineral waters of all investigated municipalities (26) or settlements (27) were analysed. Among these municipalities/settlements are 63 % of all balneological resorts of national importance (total 12 out of 19), as well as 29 % of balneological resorts of local importance (10 out of 35). Thus, the sample of municipalities and settlements includes the majority of balneological resorts of national importance and almost a third of balneological resorts of local importance.

The studied municipalities have different degrees of development and different priorities in the use of mineral waters. Nevertheless, there are some common *macroeconomic* and social problems such as the following:

□ Unfavourable demographic trends – population aging and migration to other regions of the country and abroad;

□ Reduction of the available labour resource, which will continue in the future;

□ Relatively high levels of unemployment in a number of municipalities, which are above the average for the country;

□ Lack of a sufficient number of medical personnel, unavailable or insufficient quality healthcare;

□ Poor condition of the municipal road and street network, as well as poor transport connectivity, especially for smaller settlements (Ognyanovo, Yakoruda, Rudozem, etc.);

□ Outdated water supply network as a cause of significant losses of drinking water (60–90 %). Exceptions are Rupite and Marikostinovo (Petrich municipality);

□ Lack of sewage system and treatment plants in many of the settlements;

□ Difficulties in household waste management;

□ Lack of good jobs in order to retain young people, as well as conditions for training and retraining;

□ Insufficient efficient use of mineral waters – exclusively state property, handed over to the municipality for use;

Regardless of the potential of mineral waters as a resource for the development of tourism, and more specifically – spa, health, medical, etc., not all municipalities recognize it as a strategic goal for development.

The data on the demographic profile by municipalities (there are no data for individual settlements and/or villages) show negative values and a demographic decline in 2021 compared to the previous census in 2011. The demographic collapse is between -1.82 % for the municipality of Maglzh to -19.05 % for Velingrad, where in 2014, with the separation of 3 settlements from the municipality of Velingrad, a new municipality was formed – Sarnitsa. There is a general trend for the growth of the population aged 65+, with this ranging from +6.69 % for the municipality of Maglzh to +45.03 % for the municipality of Rudozem.

Unemployment levels are lowest in the municipalities of Pavel Banya, Kostenets (because of labour migration), Hisarya and Sandanski, and at the other extreme with

extremely high levels of unemployment are Yakoruda 36.2 %, Varshets 15.7 % and Velingrad 14.2 %. The average gross monthly salary varies between BGN 871 in Haskovski mineral baths to BGN 1,249 in Dolna Banya, with an average of BGN 1,879 for the country in 2022.

In the context of the availability of mineral waters and medical facilities, established destinations with traditions in balneotherapy stand out – Velingrad and Hisarya, respectively, with 6 and 4 hospitals, while most municipalities and surveyed settlements do not have hospitals. According to data from the Ministry of Tourism, the most certified spa centres are in Velingrad (24) and Hisarya (9). There are balneotherapy centres in Velingrad (11), Pavel Banya (10), and the most wellness centres (3) in Hisarya.

There are mineral baths in almost all destinations (with the exception of Chiflik, Troyan, Kranevo and Rupite, which fall into the so-called developing destinations). The baths in the municipality of Kostenets are non-working and in bad condition, as well as the private baths that have already been sold, but without realized investments, such as in Belchinski mineral baths. The baths in Varshets, Dobrinishte, Yakoruda and the village of Yagoda have been renovated and are well managed.

The accommodation base in terms of number of guest houses, hotels, family hotels, villas and holiday villages stand out first in Sapareva Banya (141), followed by Velingrad (106), Kranevo (86) and Sandanski (84). Velingrad (44) and Kranevo (29) take the top spot in terms of number of hotels. In terms of number of family hotels, Sandanski (31) takes the leading place, while Marikostinovo, Burgas mineral baths and Kresna have the most modest development.

According to the category of number of accommodation places in the high category segment (4-5 stars), Velingrad stands out sharply with a total of 24 objects, followed by Kranevo (8) and Sandanski (8). According to data from 'Capital'<sup>13</sup>, prices in 4- and 5-star hotels during the weekend vary from

BGN 189 to BGN 366, with peaks of BGN 500 per night (Velingrad). In recent years, there has been significant investor interest in the construction of high-class hotels in smaller settlements such as Ovoshtnik (Kazanlak), Banya (Razlog) and Belchin Banya. There are not a few settlements and municipalities without a high-class base.

These data show that mineral waters as a resource are a prerequisite, but not a guarantee, for the successful development of health and spa tourism and the respective municipalities. Investments in spa tourism are mainly in high-class hotels, often outside established resorts, in settlements with insufficiently developed technical and tourist infrastructure. Different investor interests and changes in ownership are often associated with a change in the purpose of the mineral baths, which in the past were public and widely accessible.

### *3.2. Analysis of the results of interviews with representatives of municipalities with mineral waters*

The questionnaires for the representatives of the municipalities were tested with a small non-representative sample. Representatives of 24 municipalities with mineral water deposits were interviewed. One representative per municipality was interviewed, only two from Banya (Razlog) municipality. Among them are chief experts on the environment, municipal property, deputy mayor and mayor, head of the 'European Projects' office, secretary of the municipality, senior experts on ecology, directors of different departments, etc.

Of all these municipalities, only 8 have adopted a strategic document for the development and/or use of mineral water deposits. Among the reasons why other municipalities have not adopted a similar document, the following are stated: 'The deposits do not have sufficient flow' (Kresna); 'The qualities and characteristics of the water are not good enough' (Sliven baths); 'There is a lack of investor interest in the waters' (Burgas Mineral Baths, Sliven Baths, Yakoruda); 'There is

<sup>13</sup> Gencheva 2023.

a lack of a national strategy for mineral waters' – indicated by 10 municipalities. In the free answers it was shared that some municipalities are in the process of obtaining a certificate (Rudozem); the waters are state property (Belchinski mineral baths, Starozagorski mineral baths); no regulatory requirements (Chiflik); work is being carried out under the Water Law (Rupite, Marikostinovo – Petrich municipality).

The investigated municipalities have a different number of mineral water deposits – from one (Dolna Banya, Rudozem, Sapareva Banya, Slivenski Bani and Yakoruda) to 24 (Hisarya). In most cases, almost all deposits are exploited. Only in Kranevo, out of 13 deposits, only 3 are exploited; in Banya (Karlovsko), 7 out of a total of 11 deposits are exploited; in Haskovo mineral baths, out of 7 deposits, 5 are exploited. In the majority of these municipalities, mineral waters are included in the relevant PIDM for the period 2021–2027, with the exception of 6 municipalities. The responsible units in the structure of the municipality for the activities related to the use of mineral waters are various departments and directorates – for environment; municipal property; GRAO; finance; specialized administration, etc.

According to the answers, in 20 municipalities free public access to mineral water in various forms is ensured for local residents, while there is no such access in four municipalities: Kranevo, Maglizh (Yagodovo village), Ognyanovo and Sapareva Banya. In 16 of the municipalities this access is made through public fountains with mineral water, in 8 of them there are public baths, and in 4 also municipal swimming pools. When asked whether people in the municipality have the opportunity to use mineral water in their homes, the representatives of all 24 municipalities answered negatively.

Only two municipalities share that they have public-private partnerships for water

exploitation – Kresna and Yakoruda. One partnership is for a concession (Kresna) and the other for a municipal company (Yakoruda). The concession has been for heating since 2020, and the municipal company has been for maintenance since 2015. Neither municipality has a special investment program nor funding through calls for other municipal financial instruments to support water use projects. Such projects are financed by other programs such as the Tourism Development Program or infrastructure programs. With the exception of four municipalities (Kresna, Yakoruda, Rupite and Marikostinovo (Petrich) and Hisarya), all others declare that there is no sustainable mechanism for financing mineral water activities.

To the question of whether the municipality received financial support from the state for the management of mineral water deposits for the period 2019–2023, 22 representatives of municipalities answered negatively. Only 2 municipalities were supported with Council of Ministers decision (Rudozem and Sapareva Banya), while the Haskovo Mineral Baths won a competition for such support. For the program period 2014–2021, two municipalities have implemented projects for the use of mineral waters (2 projects from Haskovo mineral baths and 1 project from Rudozem). Two of the projects are for exploration drilling and working drilling and one is for the creation of mineral paths between Bulgaria and Greece.

Twenty-three of the 24 representatives of the municipalities responded affirmatively to the question of whether there should be a National Strategy for mineral waters. According to them, the priority should be the provision of targeted national support for more efficient use of mineral waters, followed by a change in legislation, the development of local and national strategies, the creation of capacity through personnel training, etc. (**Tab. 2**).

**Table 2.** What do you think are the activities and measures that should be implemented as a priority for the efficient use of mineral waters? (Up to three answers)

Activities and measures	No of municipalities
Change in legislation	15
Development of local and regional strategies for mineral waters, especially in regions where they have a proven economic contribution	13
Capacity building through education and training	11
Development of partnership between public authorities, scientific and educational institutions	9
Providing funding for integrated national support (targeted)	20
Support for regional brand registration and mineral water quality certification	10
Others	3

Out of all the municipalities, 18 have received a different number of applications for water intake in the last 5 years, and in most cases, they have been approved. A large discrepancy is observed only in the Municipality of Banya (Razlog), where only 6 of 50 such requests were approved, and in the Municipality of Banya (Karlovsko), where 12 of 30 requests were approved. 6 municipalities did not have such requests.

Of all the municipalities, 15 have no revenue in the municipal budget from concessions/permits for water use, while four municipalities have 1 % revenue in the budget per year. Municipality of Banya (Razlog) has 2 % of such revenues; Sapareva bath – 3 %; Hisarya – 4 %, Maglizh (Yagodovo village) – 5 % and Kazanlak (Ovoshtnik) – 10 %.

Five municipalities declare that they have concluded contracts for concessions for the use of mineral waters. These concessions are for bottling (Dolna Banya and Hisarya); balneotherapy (Belchinski mineral baths); heating (Kresna); according to the Water Law "Other Purposes" (Maglizh – village of Yagodovo). When asked what the reasons are if no such contracts have been concluded, 9 municipalities indicate a lack of investor interest and 3 municipalities indicate administrative restrictions. The free answers also state that the waters are state property (Sapareva bath); legislation (Pavel Banya); the deposit is not intended for drinking and has no concession capacity (Starozagorski baths; Banya – Karlovsko); permit regime (Sliven baths), etc. After the expiration of the water use permits of 5 or 10 years, these permits are renewed in 17 of the interviewed municipalities. As the representative of the Municipality Pavel Banya

shared, in 80 % of cases they are renewed. In some cases, the municipality extends the term, as is the case in Sapareva Banya, from 5 years with an additional 11 years (Decision of municipality Council 01.09.2023). Most of the interviewed municipalities share that the revenues from concessions and permits are regular, with only 4 municipalities expressing disagreement.

The representatives of 4 municipalities answered the question of whether there is data on what percentage of the volume of mineral water is used for drinking by the population in public and private places. There is no such data according to the remaining 20 municipalities. Seven municipalities answered about the share of mineral water used for recreation and balneotherapy, while 17 municipalities did not have such data. This share is 1 % (Sliven mineral baths), 4 % (Kazanlak – Ovoshtnik), 31 % (Haskovski mineral baths), 90 % (Kresna), 99 % (Starozagorski baths) and 100 % (Maglizh – Yagodovo village and Pavel Banya). In only one municipality, 10 % of the mineral water is also used for heating public and private buildings (Sapareva Banya). In Kresna, 20 % of the mineral water is used for heating vegetable greenhouses and 8 % in Banya (Nova Zagora).

The presence of mineral waters contributes to the development of the settlement as a balneology/spa/wellness destination according to the representatives of 19 of the municipalities, with 5 municipalities expressing disagreement. The presence of these waters also helps to increase the quality of life of the local residents according to the representatives of 11 municipalities, while 13 do not support this statement, i.e., regarding the effect of mineral waters on the quality of



life, opinions are almost divided. For 15 of the representatives interviewed, the mineral waters have turned the municipalities into a more attractive place to live and attract new residents, while the representatives of 9 of the municipalities do not agree with this statement (Banya – Nova Zagora, Burgas mineral baths, Kostenets, Ognyanovo, Rudozem, Sapareva Banya, Slivenski Bani, Starozagorski Bani and Chiflik). Only 2 municipalities answered the question about the effects of mineral waters on the development of the settlement in terms of local business, tourism, hotels, guest houses. From Banya (Nova Zagora) they say that ‘there is a closed society there’, while the mayor of Rudozem expresses hope for good development in this direction.

To the question of whether the municipality has implemented measures to overcome the consequences of the insufficient use of mineral

waters, 15 municipalities answered that they do not have such measures, in one municipality there is no such problem (Dolna Banya), and from the municipality of Petrich they answer that the waters are state property and there are restrictions on such measures. However, in 6 municipalities, some activities such as ‘water drainage’ were carried out (Banya – Karlovsko); ‘contract with A1 for flow meters in real time and monitoring’ (Kazanlak – Ovoshtnik); ‘constructed collection shaft and reservoir’ (Haskovski mineral baths); ‘control and monitoring every year’ (Banya – Nova Zagora), etc.

For 5 of the interviewed representatives of municipalities, the technical condition of the deposits from the point of view of their construction and maintenance of the catchments is not good, for another 6 municipalities this condition is partially good, partially bad, while for 13 of the municipalities, for the most part, the deposits are in good condition (Tab. 3).

**Table 3.** Technical condition of the deposits

Technical condition - construction and catchments	Municipalities
It's not good	Pavel Banya, Rupite and Marikostinovo (Petrich), Sandanski, Starozagorski Bani and Hisarya
Partly good, partly not good	Banya (Razlog), Dolna Banya, Kresna, Sapareva Banya, Chiflik and Yakoruda
For the most part good	13 municipalities

When asked what are the lost benefits from the insufficient use of mineral waters, 12 municipalities say that there are no lost benefits and everything is used. Other 12 municipalities share some gaps, such as the following: ‘There is no spa treatment, more hotels with mineral pools are being built’ (Banya – Razlog), etc. The Municipality of Maglizh shares that ‘within a few years, the municipality renovated the public bath in the village of Yagoda. The building is a cultural monument. In 2022, the bath was put into operation, which increased tourist interest and made mineral water easily accessible to the population.’

The majority of the surveyed representatives of the municipalities claim that in their municipalities the exploitation resources of the mineral water deposits have been assessed and the relevant orders for the confirmation of the resources have been received from the Ministry of Environment

and Water. Only a larger share disagrees with the statement that the municipality provides free drinking water for the local population and those mineral waters are advertised widely.

The majority of respondents agree with the statement that the financial assistance from the state for mineral waters is insufficient (19 municipalities) and to some extent with the statement that there is a lack of administrative capacity and financial means for additional research and design of mineral water deposits (13 municipalities). In contrast, a larger share of them disagrees with the statements that there are no clear procedures for issuing water intake permits, that the conditions for the development of the mineral water business are not good, that local residents are not interested in the development of mineral water deposits and that the motivation of the municipal administrations to develop the deposits is weak. (Tab. 4).

**Table 4.** To what extent do you agree with the following statements?  
(One answer per line, 1 – ‘strongly disagree’, to 5 – ‘strongly agree’)

	1	2	3	4	5
1. There is a lack of administrative capacity and financial resources for additional research and design of mineral water deposits	6		5	1	12
2. Poor condition of water sources, requiring high initial capital investments	9	1	4	4	6
3. Insufficient financial assistance from the state	3	1	1	1	18
4. There is no clear concept of priorities in the use of mineral water	9	1	5	4	5
5. There are no clear procedures for issuing water abstraction permits	14	2	1	1	6
6. Unfavourable conditions for the development of the mineral water business	13	3	4	2	2
7. Disinterest of local residents in the development of mineral water deposits	16	2	4		2
8. There is a lack of investor interest and strategic partners for the development of mineral water sites	11	1	7	3	2
9. Weak motivation of the municipal administration for the development of these deposits	16	1	4	2	1
10. Insufficient advertising of mineral water deposits	8	1	10	1	4

In the free answers, one of the interviewed representatives points out that state-owned mineral water deposits are provided to municipalities without being properly maintained, and subsequently municipalities are required to incur management costs that cannot be compensated by revenues. Another municipal representative emphasized the confused legislation (the law was last operational in 1956) and the lack of a clear state strategy. A third respondent shared that in a concession for bottling mineral water from a deposit, not all the water is used, because only one concessionaire can bottle from one deposit. For example, the deposit has 100 cubic meters of water per year, and the concessionaire uses 1 cubic meter per year. The remaining 99 cubic meters remain unused in most cases.

## CONCLUSIONS

On the subject of the benefits of mineral waters for municipalities, local residents and local businesses, the following contradictions emerge:

- Competition and conflict regarding the purposes of application – recreation, balneotherapy, tourism, attractions, heating, etc. Competition between investor interests at the deposit level, with no clear rules for evaluation in the allocation of debit and water

intake. Evidence for this is the number of unissued/unsatisfied requests for water intake permits and unrealized investment projects, for which it is difficult to collect statistics at the municipal administration level.

- Contradiction between public and private interests regarding access and use of mineral waters. The problems here are related to the restoration of mineral baths, public pools, fountains and free access to water resources, as high-end hotels and spa tourism are in the high price segment. Initiatives in this regard have a number of associations foundations (Bulgarian Water Association, ‘Geya’ Foundation, ‘Association for Kniazhevo’, Civic Initiative ‘Kniazhevets’, ‘Sofia Team’ and many others). The opening of the spa resorts to the insurance systems of the EU countries fills this segment and narrows the circle of potential consumers from the country according to their ability to pay.

- There are not a few problems related to administrative procedures and institutions responsible for mineral waters, as well as regulatory requirements.

- The main recommendation is that in order to make full use of the mineral water resource, a national strategy, comprehensive management approach, policy and investment is needed to solve the identified problems at both the macro– and local level.

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## Използването на минералните води в България като фактор за развитие на общините

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Основна цел на това проучване е анализ на използването на минералните води в България като фактор за развитие на общините, повишаване качеството на живот на местните жители и развитие на свързания с минералните води туризъм. Изследването се основава на данни от стратегически документи на общини, интервюта с техни представители, местни жители и представители на местния бизнес. Актуалността на темата произтича от факта, че управлението на минералните води се сблъсква с редица проблеми, които създават пречки пред рационалното им използване. Резултатите показват, че тези проблеми са свързани главно с административните процедури и институциите, отговорни за минералните води, както и с нормативните изисквания. Основната препоръка е, че за да се използва пълноценно ресурсът на минералните води, са необходими цялостен управленски подход, национална стратегия, политика и инвестиции, които да решат идентифицираните проблеми както на макро-, така и на местно ниво.

