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**SYMBIOSIS BETWEEN THE AGRICULTURAL SECTOR AND TOURISM – AN OPPORTUNITY FOR THE DEVELOPMENT OF SMALL SITES LIKE MINERALNI BANI, HASKOVO DISTRICT**

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**Abstract**

Mineralni Bani - one of those places in Bulgaria that has preserved the local spirit and traditions and has become recognizable with its healing mineral springs and peaceful atmosphere. They are a traditional destination for healing and relaxation. In today's dynamic world, when tourists are looking for authentic and diverse experiences, mineral waters alone are not enough, because the key to the sustainable development of the region may lie in unexpected but natural symbioses, such as an alliance between tourism and the local agricultural sector.

A diagnostic analysis of the agricultural sector and tourism has been made, and the following are characterized for the agricultural sector: Land resources and forest resources (size and structure of land resources, distribution of the area by type of forests and by type of land), Agricultural fund (size and structure of agricultural lands, production of agricultural products in villages, production of animal products.

Tourism in the municipality of Mineralni bani has been characterized. Culture and archaeological landmarks in the municipality have been described, which are an important prerequisite for the development of tourism in it. The material accommodation base has been presented, and the indicators Number of overnight stays per month in a hotel room and Cost of one overnight stay in a two-star hotel have been studied. Nutrition has been examined as one of the main elements in the tourist product, in the specifics of the region.

Mineralni bani and the surrounding villages have an incredible agrarian wealth. Fertile soils and a favourable climate are prerequisites for the production of quality fruits, vegetables, honey, dairy and meat products. Instead of exporting these gifts as raw materials or selling them to large chains, they can become the basis of a unique tourist offer. Conclusions and generalizations have been made that would be beneficial for the development of the two sectors under consideration, which would lead to the overall development of the studied municipality.

**Keywords:** Tourism, agricultural sector, opportunity, development, symbiosis, small sites

## INTRODUCTION

Small and underdeveloped rural areas in Bulgaria, such as the Mineralni Bani municipality, Haskovo region, face several challenges: demographic decline, economic stagnation, high unemployment and an insufficiently diversified economy. Despite these difficulties, the region has significant unrealized potential, concentrated in two main sectors: tourism, based on healing mineral springs and cultural heritage, and agriculture, characterized by favourable natural conditions. The purpose of this study is to analyze the possibilities for creating a symbiotic relationship between the agricultural sector and tourism as a strategy for sustainable development of the Mineralni Bani municipality. To achieve this goal, the following tasks have been set:

1. To diagnose the state of the agricultural sector and the tourism potential of the municipality.
2. To identify problems and barriers to development in both sectors.
3. To propose specific mechanisms and approaches for integrating agricultural production into the tourism product.

In Mineralni Bani, the population density is higher, the road infrastructure is in good condition, agriculture, although very slowly, is reviving, and the arable land is increasing. In mountain and rural regions, there is an important production segment in which motivated and innovative entrepreneurs are involved, where tourism is linked to the quality of agriculture and is an economic lever for the growth of the region, as well as a form of protection of the territory that may be at risk. (Lulcheva, Aleksandrov, 20217). In recent years, guest houses, travel agencies, and family hotels have been created, which are very important prerequisites for the development of many types of tourism. Farmers gain experience in serving tourists. "The development of tourism activities in rural areas is a subject of great interest at both individual entrepreneurial as well as regional and national level" (Aleksandrov, 20216). On the other hand, tourism creates an opportunity for the revitalization of backward regions, their economic development and their transformation into an attractive tourist destination. Therefore, tourism services in the rural areas are able to support local population and communities in developing economic diversity. (Popescu, Agatha, 2016)

The competitiveness of any tourist product is determined by the content and combination of its components. In order to achieve a complex tourist product, it is very important to develop the third element of the tourist product - complementary services. The content of this element depends on the specific characteristics of the region, on the possibilities for combining it with other types of alternative tourism: ecological, culinary, wine, sports, mountain, etc.

## MATERIALS AND METHODS

The study is based on a secondary analysis of data provided by municipal and national statistics on agricultural production and tourism infrastructure in the municipality of Mineralni Bani for the period 2022-2024. A descriptive analysis was applied to characterize the state and trends in the economy of the region. A diagnostic analysis of the agricultural sector and tourism was conducted, characterizing the following for the agricultural sector: Land resources and forest

resources(size and structure of land resources, distribution of area by type of forests and by type of land), Agricultural Fund (size and structure of agricultural lands, production of agricultural products in the villages, production of animal products. Tourism in the municipality of Mineralni Bani is characterized. Culture and archaeological landmarks in the municipality are described, which are an important prerequisite for the development of tourism in it. The material accommodation base is presented, the indicators Number of nights per month in a hotel room and Cost of one night in a two-star hotel are studied. Nutrition is considered as one of the main elements in the tourist product, in the specifics of the particular region.

## RESULTS AND DISCUSSION

### Diagnostics of the agricultural sector

The analysis of land resources shows that 51.08% of the municipality's territory is agricultural land, of which 31.84% is arable. However, agriculture is characterized by:

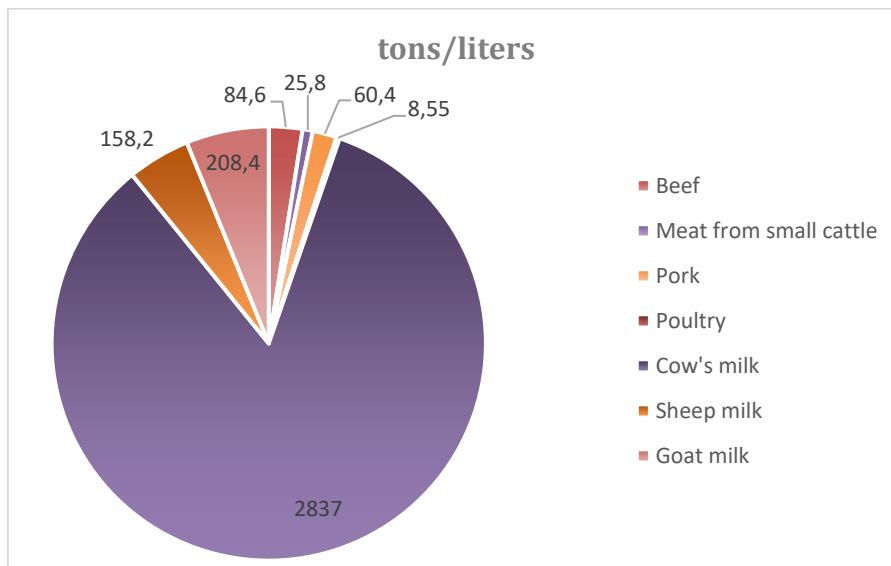
- **High fragmentation:** The majority of the land (98.16%) is owned by individuals with an average farm size of 16.7 decares, which makes the expansion of the areas and the implementation of modern technologies economically unjustified.
- **Narrow product specialization:** Grain production dominates (56.8% of agricultural land is arable land), while permanent crops (vineyards, fruit growing) occupy only 2.1%, despite the excellent soil and climatic conditions.
- **Insufficient infrastructure:** Irrigated areas represent only 2.5% of arable land, and areas for transport and infrastructure - only 0.3%, which complicates logistics and access to markets.
- **Lack of cooperation:** The share of land owned by legal entities is minimal (0.04%), which indicates a lack of associations and producer organizations.

Production data (Table 1) show a positive trend in viticulture (growth of 25.42% compared to 2022), which is favourable for the development of wine tourism. On the other hand, vegetable production is decreasing, leading to dependence on imports. Livestock breeding has stabilized but still has low yields and is oriented primarily towards self-sufficiency

**Table 1** Production of agricultural products in the villages in the municipality of Mineralni Bani, in tons

cultures	2022	2024	dynamics, 2022 = 100%
wheat	3810	4916	129.03
barley	286	234	81.81
sunflower	302	324	107.28
corn	365	395	108.22
tobacco	463	480	103.67
vegetables	121	114	94.21
vineyards	1180	1480	125.42

Source: Author's research



**Figure 1** Production of animal products in the villages of the Mineralni Bani municipality (tons, thousand liters)  
Source: Author's research

The following farm animals are raised in the municipality: cattle, sheep, goats, pigs, poultry and bee colonies. The animals are raised on the personal farms of individuals, with the production used to meet the needs of the respective households. This is especially true for pig farming and poultry farming. Cattle farming in the Mineralni Bani municipality is prevalent in the plains in the villages of Susam, Tatarevo, Sirakovo, Mineralni Bani. The production of all types of animal products increased during the period 2022-2024. Of the meat products with the highest relative share is cattle meat - 84.6 tons; next in line is the production of pork meat - 60.4 tons. Cow milk is produced in the largest quantities - 2837 thousand liters. Over the years under study, its production increased by 15%. One of the main problems of livestock breeders is that the domestic market for animal products is unstable, and the external one sets numerous requirements that most livestock breeders have difficulty meeting. Livestock breeders encounter great difficulties in fulfilling the conditions for obtaining financing for the development of their activities, both from credit institutions and from funds to support agricultural producers. From the data on the development of agriculture and animal husbandry in the villages in the Mineralni Bani municipality, it is clear that sufficient fruit, vegetables and animal products are produced, mainly in the owners' households. A large part of these products are used, both in family and larger hotels.

#### **Diagnostics of tourism potential**

The Municipality of Mineralni Bani has significant tourism potential, based on:

**Balneological resources:** The village has been famous as a spa resort since the Roman era, when the hot springs (14 in number) attracted people with their healing effects. The presence of healing mineral springs makes the area a traditional

attraction for vacationers, mainly from nearby regions. The resort village of Mineralni Bani is rich in clean water sources, both mineral water and ordinary water. There is both drinking water and water for sanitary purposes and balneotherapy. There is an adequate sewage system and a treatment plant, which is vitally important for both the local population and the hotel industry. According to the municipality's studies, there is no danger of drying up of underground water sources and stopping water flows, there are no changes in the quantity and quality of mineral water. The efforts of the Mineralni Bani municipality are aimed at developing health tourism, i.e. developing activities to provide health services by using the available natural resources in the region: mineral waters, climate, clean nature and the presence of a large number of archaeological and cultural sites that attract the attention of a large number of tourists. The state of the material base of the hotel industry in the municipality, the available balneological and climatic conditions, the staffing of the hotels and the health facilities give the municipality of Mineralni Bani serious competitive advantages for the sustainable development of this type of tourism.

**Cultural and historical heritage:** In the municipality of Mineralni Bani there are a number of remains of the past and historical monuments that are of interest to tourists. These are remains of ancient fortresses, mineral pools from Roman times, etc. On the territory of the municipality there are 52 cultural and historical monuments of local and national importance, registered by the National Institute for the Protection of Cultural Monuments. They are from different eras and are scattered throughout the territory of the municipality - often in forests and uninhabited areas. In practice, most are not accessible to visitors due to the non-existent or poor infrastructure in and around them.

Of particular interest are the remains of ancient fortresses, such as the "Gradishteto" fortress and the "Kaleto" fortress. Other interesting sights are the so-called dolmens (rock niches). These are tombs of prominent Thracian citizens. They are made of 4 unprocessed trachyte slabs, hammered into a rectangular shape and covered on top with other soil. After the burial, the dolmen was buried with a mound of stones and earth.

Information about the cultural and historical heritage of the region has not been popularized. Existing legends and traditions about the region's past are still alive among the locals, but unknown to tourists.

The presence of such a large number and such a variety of archaeological sites is a solid prerequisite for the development of cultural tourism. The combination of balneological, cultural, rural and wine tourism only on the territory of the Mineralni Bani municipality can attract a large number of tourists. It is necessary to promote these features to an even greater extent.

Tourists arriving in the resort village need to be offered attractions and ways to spend their free time in order to make their stay more interesting and desirable. This creates a need to create tourist products that present the history of the region and that meet the expectations of tourists for a preserved tourist environment and easy access to authentic cultural sites. In this way, the cultural heritage of the region will not only be better used (it will be turned into a tourist resource), but will also be preserved.

**Natural features:** A large resource - 44% of the municipality's territory is forests, which is a prerequisite for clean nature and a favourable climate, excellent conditions for practicing some specialized forms of tourism and diversifying the tourist product with additional services. Forestry is an industry that creates employment and livelihood for part of the population, offering jobs for permanent, seasonal and temporary workers. Of importance for the population are also the side opportunities for using the forest, which bring additional income. Of these, grazing of livestock in the forests occupies the most important place. In total, grazing for large and small livestock is permitted on an area of 10590.5 ha. About 20 tons of hay are harvested from the meadows of the forest fund annually. On the territory of the forestry section there are relatively good conditions for collecting wild mushrooms and herbs, coltsfoot, chamomile, thyme, oregano, elderflower, hawthorn, etc. Wild berries are collected from the naturally growing rose hips, hawthorn, dogwood, viburnum, etc. These features should be included in the tourist product offered in the region.

The rich species diversity of vegetation in the resort village of Mineralni Bani provides a mild and cool climate all year round. The construction of hotels has not destroyed the vegetation, ecosystems and biodiversity. The main part of the material base for the hotel industry consists of massive buildings, there are almost no temporary, seasonal means of accommodation such as campsites, caravans, motor vehicles, etc. that would destroy the natural plant landscape in the area of the resort village. Tourist trails have existed for decades and are convenient and well-known. The development of the resort village has not led to the seizure and destruction of agricultural lands.

**Table 2** Number of nights spent in a month in a room in a two-star hotel in Mineralni Bani

Season	Hotel "Izvorite"	Hotel "Bulgaria"	Spa hotel "Toplica"
Spring	14/ 22	20/40	26/52
summer	34/ 68	29/57	32/64
autumn	31/ 62	26/48	30/60
Winter	10/20	12/24	16/32

Source: Author's research

The data in the table makes it clear that there is seasonality in the visits of tourists to the Mineralni Bani destination. The most attractive seasons are summer and autumn, as well as spring. In these seasons, the climatic conditions in the region are most favourable for using balneotherapy and SPA services, visiting cultural and historical sites in the open air, organized local festivals and holidays, and there is also an abundance and variety of agricultural products.

Mineralni Bani Municipality attracts a large number of tourists as a balneological center. The municipal leadership has developed a strategy and a specific plan for the fullest utilization of the thermal waters on the territory of the municipality. Increasing the number of attractions to the tourist product makes it more attractive and competitive, extending the duration of tourists' stay in Mineralni Bani and in hotels. According to the preferences of tourists from different age groups, it is clear that nature walks and exploratory excursions around the region are preferred by

almost all age groups of tourists. All the tourists want to get acquainted and taste the specific local cuisine and traditional foods, they state their desire for recreation among the pastoral countryside. (Lulcheva, 2018)

**Table 3** Cost of one night in a two-star hotel, (Mineral Baths, 2024)

cost elements (types of expenses)	cost price, BGN
depreciation of bed linen	0.90
furniture depreciation	1.80
cleaning a room (labor)	3.25
electricity	7.15
firewood	4.10
water	1.90
detergents and cleaning agents	2.90
service (reception)	3.60
attractions	4.5
breakfast	8.40
<b>Total costs</b>	<b>41.50</b>
price per night	55
profit	13.50

Source: Author's research

Due to the impossibility of accurately measuring the individual types of costs, calculating the cost of one night is difficult. This circumstance gives a large amount of conditionality to the value of the individual elements of the cost of one night. The cost of the night also includes breakfast, which is necessarily offered to the tourist. Of the individual types of costs, the cost of energy is high, since there are large costs of such, both in the kitchen and for heating or cooling (according to the season).

One of the main elements of folk culture is nutrition. The food system in the Haskovo region, where the object of our study is located, shows both the ethnographic specificity of this region and the general features of the Bulgarian traditional cuisine. The preparation of dishes is also associated with the holidays and rituals characteristic of the region and the country. The traditional local cuisine reflects the culture of the local population and is an element of the regional development as well as an important tourism resource. (Lulcheva, Aleksandrov, 2017). Pitana & Gayatri (2005) define culinary tourism as a journey intended to enjoy, explore, and experience a variety of regional specialties that are an inseparable part of tourist destinations.

The location of the Haskovo district largely determines the characteristics of the regional traditional cuisine. In 2012, a round table was organized on the topic "Culinary regions in Bulgaria - creating a culinary map" with the aim of specifying the culinary regions in Bulgaria. It became clear that the culinary regions in the country are largely related to the ethnographic regions in the country. These are: the region of Thracian cuisine, the Strandzha region, the region of Rhodope cuisine, the region of Pirin cuisine, the region of Northwestern cuisine and the northern Black Sea coast and Dobrudzha. Products bearing geographical indications differentiate themselves in the market thanks to the perception of quality, originality, and the value of

traditional production methods provided by belonging to a particular region, and generally find buyers at higher prices compared to equivalent products (Özkan & Gürbüz, 2023). The regional culinary culture in the Haskovo district overlaps and bears the specifics of Thracian cuisine, as well as some characteristics of Rhodope cuisine. The region is characterized by dishes from the Eastern Rhodope and White Sea cuisines.

In Haskovo district, in addition to good traditions regarding food, a special attitude towards wine is also observed. Wine has a serious position in the local way of life and traditions. The roots of this attitude towards wine production and the use of wine with food date back to the Thracian era. The favourable climatic and geographical conditions contribute to the development of viticulture and wine production. In general, wine is an integral part of the history of the region. These lands were inhabited by ancient civilizations that left indelible traces. The ancient Thracians used wine as an important element of religious rituals. Evidence of this is the sanctuaries discovered throughout the territory of the municipality, which carry information about ancient rituals and the cult of the God of wine. The soils and climatic conditions are suitable. Haskovo Region is known for its traditions in wine production, and the wine production facilities on its territory are specialized in the production of high-quality wines, which find good sales on the international market. Several wine centers in the territory of the region attract tourists with the main purpose of practicing wine tourism.

Despite these prerequisites, tourism is stagnant due to:

- **Outdated infrastructure:** Lack of a modernized balneological center, despite newly built accommodation facilities such as family hotels and guest houses, the older hotels and additional infrastructure (secondary roads, tourist trails) are in poor condition.
- **Lack of diversified products:** The offer is strongly concentrated on health tourism, without offering significant additional activities.
- **Personnel issues:** Lack of qualified personnel who speak foreign languages and have a good service culture.

#### **Possibilities for symbiosis and mechanisms for its realization**

In the municipality of Mineralni Bani, the population density is higher, the road infrastructure is in good condition, agriculture, although at a very slow pace, is reviving, and the cultivated areas are increasing. In recent years, guest houses, travel agencies, and family hotels have been created, which is a very important prerequisite for the development of many types of tourism. Farmers gain experience in serving tourists. On the other hand, tourism creates an opportunity for the revitalization of underdeveloped regions, their economic development, and their transformation into an attractive tourist destination.

The competitiveness of any tourist product is determined by the content and combination of its components. In order to achieve a complex tourist product, it is very important to develop the third element of the tourist product - complementary services. The content of this element depends on the specific characteristics of the region, on the possibilities for combining it with other types of alternative tourism: ecological, rural, culinary, wine, sports, mountain, etc.

Spa tourism in the resort village of Mineralni Bani can be combined with rural, wine, cultural or mountain tourism. The symbiosis between the two sectors can be realized by creating a complex tourism product that integrates local agricultural resources. Specific forms include:

**Agritourism and rural tourism:** Family hotels (13 in the municipality) can offer authentic experiences – tastings of local products (honey, dairy and meat specialties), cooking lessons of Thracian specialties, participation in agricultural activities. Big data characterized by its volume, velocity, and variety combined with AI techniques such as deep learning, reinforcement learning, and natural language processing, enables tourism stakeholders to make more informed, data-driven decisions (Gretzel et al., 2015). In rural tourism specifically, these technologies contribute to smarter destination management, offer more personalized visitor experiences, and enhance analytical precision in tourism planning and marketing (Xie & He, 2022). By leveraging such digital tools, rural destinations can optimize resource use, respond more effectively to tourist demands, and support sustainable development goals (Rosilawati Zainol & Faros Fadzira Roslan, 2025).

1. **Wine tourism:** The presence of favourable conditions for viticulture and traditions in wine production in the region creates prerequisites for the development of wine tourism. Tastings at local producers, walks through the vineyards, as well as combining balneotherapy with wine tourism can be organized.

2. **Cluster approach:** The most effective mechanism for realizing symbiosis is the formation of tourism clusters based on "diagonal integration". Such a cluster can unite:

- **Hotels and SPA centers** (provide accommodation and basic services).
- **Local farmers** (they supply fresh, ecological products for hotel kitchens and for direct sale to tourists).
- **Wineries** (participate in tasting programs).
- **Cultural tourism activities** (tour guides, museums).
- **Municipal administration** (coordination and support). This approach provides a synergistic effect - joint marketing, cost reduction, increased product quality and creation of added value.

3. **Principles of green and circular economy:** Using local products in hotels and restaurants reduces transportation costs and environmental impact, increases the authenticity of the experience, and supports local farms.

## CONCLUSIONS

The analysis clearly demonstrates that the municipality of Mineralni Bani possesses a unique combination of agrarian and tourist potential. The development of a symbiosis between the two sectors is not just an opportunity, but a necessity to overcome economic stagnation and demographic problems.

To achieve this goal, the following strategic directions are proposed:

- **Stimulating cooperation:** Creation of producer organizations in the agricultural sector for joint marketing, production and access to financing.

- **Diversification of agricultural production:** Directing support towards the development of viticulture, fruit growing, vegetable growing and herb growing, which have higher added value and are more attractive to tourists.

- **Integrated planning:** Development of a municipal tourism development program that explicitly includes the agricultural sector as a key element of the tourism product.

- **Investments in infrastructure:** Improving the road network, irrigation systems and tourism infrastructure, including cultural sites.

- **Personnel training:** Organizing training for hoteliers, restaurateurs and agricultural producers in the field of agritourism, marketing and tourist service.

The implementation of these measures will transform the municipality of Mineralni Bani from a "backward rural area" into an attractive, sustainably developing destination, where tourism and agriculture support and enrich each other.

We can draw the following conclusions from the research conducted:

- The mineral springs in combination with the large number of cultural and historical monuments /52/ on the territory of the municipality and the unpolluted, beautiful and easily accessible nature are an objective prerequisite for the development of the resort village of Mineralni Bani as an attractive balneological and tourist center;

- The geographical and climatic conditions in the region favor the cultivation of red and white grape varieties with excellent taste qualities: Merlot, Cabernet Sauvignon, Pamid, Bolgar, Rubin, etc. Haskovo Region has traditions in winemaking, and the wine production facilities on its territory are specialized in the production of high-quality wines. All this creates real prerequisites for the development of the so-called "wine tourism", and the combination of health and wine tourism;

- Usually, the characteristics of a given regional culinary culture are closely related to the ethnographic appearance of the region. The regional culinary culture in the municipality of Mineralni Bani overlaps and bears the specifics of the Thracian cuisine, as well as some characteristics of the Rhodope cuisine. Dishes from the Eastern Rhodope and White Sea cuisine are characteristic of the region;

- Cluster associations can make a significant contribution to the development of tourism and the agricultural sector. They are formed on the basis of the so-called "diagonal integration", through partnership and cooperation of various direct and indirect participants in carrying out a certain activity; mutual complementarity of organizations and institutions is ensured in order to ensure a comprehensive, complete organization of the tourist's stay. Mostly representatives of small and medium-sized tourist and agricultural businesses are united, for the exchange of experience and knowledge, for the development and implementation of innovations, for inclusion in national networks, and for joint marketing activities. The result is more complete and high-quality service to tourists, a higher quality tourist product and higher competitiveness;

- The sustainable development of tourism in the Mineralni Bani municipality is hindered by the following circumstances: deteriorated demographic indicators, lack of young people of working age, low educational level of the population; social and living conditions in a large part of the guest houses do not meet the requirements, as they are in European countries, this repels more demanding tourists and especially foreigners. The infrastructure – both physical and technical - is in poor condition in some places: sewage channels, secondary roads, separate tourist trails,

etc.; there are employees in tourist enterprises who do not have the required qualifications, do not have the necessary culture of serving tourists, do not speak foreign languages. All this affects the quality of service to tourists.

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