

THE LIFE CYCLE STAGE OF WESTERN ROMANIA RESORT-TOWNS AS A TURNING TABLE FOR THERMAL TOURISM DEVELOPMENT, BIHOR COUNTY, ROMANIA

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Abstract: The geothermal potential of the towns of Ștei and Beiuș and their evolutions as resort-towns feature a development evolution whose tourist potential rely on the recent geothermal waters' capitalization as a spearhead for regional development. Both localities from western Romania were declared tourist resorts based on numerous favorable premises,

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among which the thermal waters for both curative and leisure purposes. The tourist evolution of the two resort towns occurred differently in terms of supply and demand and in terms of the thermal water consumption and applying Butler's tourist life cycle concept both resorts are found at the development stage. An inventory of tourist attractions, both natural and man-made has been accomplished, as well as its tourist infrastructure such as operational leisure, catering and accommodation facilities for the supply side. This analysis covers a gap in the existent literature. To reveal the tourist consumption pattern in the two resort towns, secondary data referring to tourist arrivals has been analysed. All these surveyed elements allowed a comparative analysis of two engendered small towns on their rise to tourism development and a highlight of their tourist development stage through the geothermal water capitalization.

Key words: thermal waters, Beiuș, Ștei, development stage, supply analysis, tourist arrivals, tourism area life cycle

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INTRODUCTION

Thermal waters can be a significant factor in triggering tourism development in a region. The use of thermal waters for bathing, drinking and therapeutic purposes (Gianfaldoni, et al., 2017) has been popular for centuries and many people appeal to them for their healing properties (Stathi & Avgerinos, 2001; Cooper & Cooper, 2009; Porowski, Rman, Fórizs, & Lamoreaux, 2019). Thermal waters can be found in various parts of the world and these natural resources have been used to develop the tourism industry that attracts visitors seeking relaxation and wellness (Dryglas, 2020). Tourism development based on thermal waters can take many forms, including the construction of hotels and resorts (Emir & Saraçlı, 2011), spas and wellness centers that cater to visitors seeking a range of activities such as massages, beauty treatments and water-based activities.

Additionally, thermal waters can help attract visitors to a region, who may also be interested in exploring the local culture, cuisine and other attractions (Ataberk & Baykal, 2011). This can lead to the development of other tourism-related businesses, such as tour operators, transport services, and museums. Overall, thermal waters have the potential to trigger tourism development in a region, leading to economic growth, job creation and increased revenue for the local community (Mariița, 2010). However, it is essential to ensure sustainable development that protects the natural resources and cultural heritage of the region.

Many thermal water studies from southeastern European countries such as Slovenia (Rančić, Pavlaković, Pozvek, & Turnšek, 2022), Croatia (Marković, Sladović, Domitrović, Karlović, & Larva, 2022), Bosnia-Herzegovina (Spahić & Temimović, 2014), Serbia (Kosic, Pivac, Romelic, Lazic, & Stojanovic, 2011; Zunic, Bidzan-Gekic, & Gekic, 2019), Macedonia (Taskov, Metodijeski, Boskov, & Filiposki, 2011; Taskov, Metodijeski, & Mitreva, 2015; Zakoski, 2021), Albania (Gambarov & Gjinić, 2017), Bulgaria (Benderev, Hristov, Bojadgieva, & Mihailova, 2016), Romania (Dinu, Cioacă, & Zbucea, 2010; Aluculesci & Nistoreanu, 2014; Surdu, Tuta, Surdu, Surdu, & Mihailov, 2015; Cîrciumaru, 2017) dwell on the geothermal water potential. These countries possess reservoirs whose hot temperature is capitalized for balneotherapy, water bottling industry and geothermics (Porowski, Rman, Fórizs, & Lamoreaux, 2019). Romania's prospection for geothermalism began in the 1960s with more than 250 wells drilled across time at depths ranging between 800 m and 3500 m and with temperatures between 40-120°C, mostly located in the western and southern part of Romania (Roșca, Bendea, & Vîjdea, Mineral and Thermal Waters of Romania, 2016).

In the western part of Romania, the tourist thermal water spas of Băile Felix and Băile 1 Mai feature among the oldest thermal water tourist consumption (Tătar, Czimre, & Dehoorne, 2013; Ilieș,

Buhaş, Iliuş, Morar, & Herman, 2015; Herman, et al., 2021), but nearby southern tourist town resorts emerge such as Ştei and Beiuş whose waters have recently been used for curative and heating purposes. These towns are located linearly to the south in Beiuş Depression. The urban axis of the Beiuş depression consists of four towns, namely Beiuş, Ştei, Vaşcău, Nucet, which run along the Crişul Negru river and are crossed for a length of 30 km by the European national road DN76/E79. Of these, two cities that have received the status of tourist resort of local interest since 2020, namely Beiuş and Ştei are the targeted topic of the current study. The towns of Beiuş and Ştei are located in the intramountainous depression of Beiuş (Figure 1), drained by the Crişul Negru river, which along with the bordering hilly and mountain range is known in the Romanian ethno-cultural, rural and mental space as the Land of Beiuş. On a regional or national scale, the two cities are similar demographically of 8,000 and 11,000 inhabitants, but on a local scale the differences are revealed differently. On the economic, medical, cultural, commercial and touristic segment, Beiuş is on a higher hierarchical level, being the traditional polarizing centre of the Beiuş depression as a whole (Filimon, 2012).

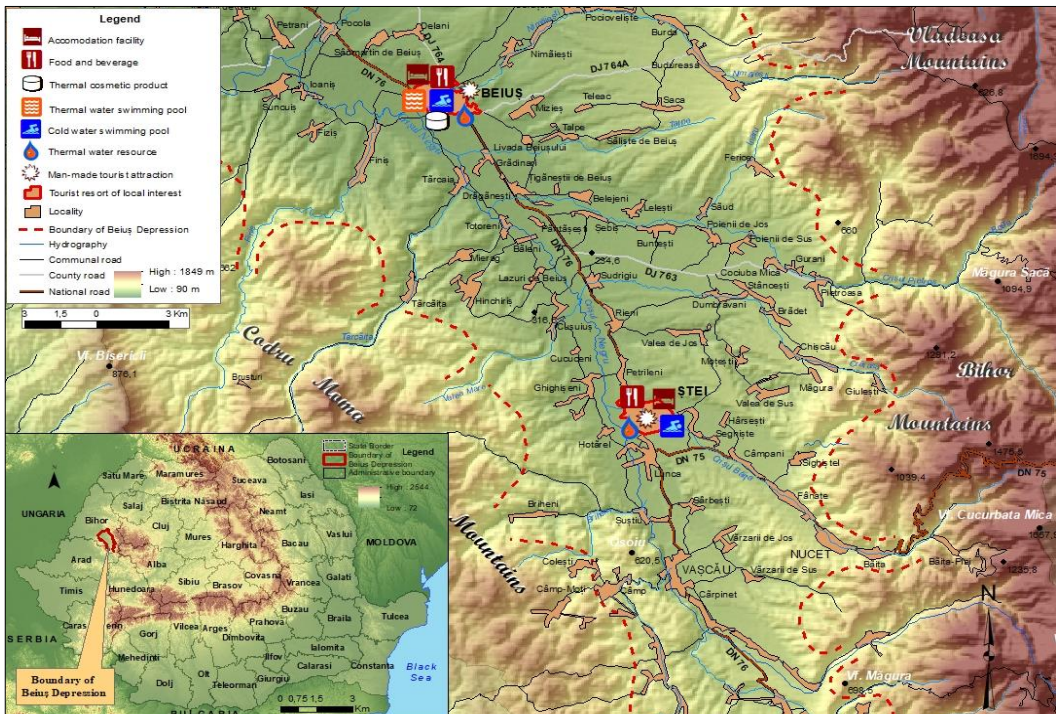


Figure 1. The resort towns of Beiuş and Ştei and their tourist facilities and the position of Beiuş depression within Romania (inset map)

Source: authors' own elaboration

The two cities with tourist resort status have a favorable position potential because they are located along the national road (i.e. DN76) and meanwhile European road (i.e. E79) that connects the west with the centre of Romania and they act as a turntable for mountain tourism that takes place in the adjacent mountains. Furthermore, the town of Beiuş is located at the junction of the roads leading to the Stâna de Vale mountain resort and the highly-valued karst area of Padiş of the Bihor mountains and the town of Ştei is also relatively close to the karst plateau Vaşcău from the Codru-Moma mountains.

MATERIALS AND METHODS

The current paper relies on secondary data time series provided by the National Institute of Statistics of Romania for the elaboration of the analysis related to the accommodation supply, more precisely the accommodation number of structures and places for the interval 1990-2021 and of the tourist arrivals' analysis during the interval 2002-2021. For the catering supply inventory, the tool of Google Maps as well as field surveys were used to identify the facilities in both urban centres. For the visitor attractions and entertainment supply the most visited attractions for Beiuș were identified from the municipality's official website and for Ștei a data sheet with the most important tourist attractions was laid at our disposal by the Town Hall of Ștei administration. The secondary data were organized into a dataset and the charts featured on maps reveal the study results. GIS maps tool was used for the elaboration of the tourist themed maps.

The purpose of the paper is to establish the tourism development cycle of the two resort towns from the perspective of the tourism supply and demand inventory and analysis, which also includes the thermal production relying on Butler's (2006a) tourism area life cycle concept. For this, we started from the hypothesis that assumes the existence of valuable natural tourist resources, such as geothermal waters that can launch the cities of the Beiuș depression in a race to develop a sustainable tourism based on this precious water resource, but also on the resources offered by the adjacent mountain space. The secondary hypothesis assumes that the favorable position of the cities of Beiuș and Ștei could forward them into a turn table of the entire tourist activity that takes place in the depression of Beiuș and in the mountain area that has supported the residents' social and economic life for centuries here (Ștefanescu, 1997; Ștefănescu, 2001).

Butler's Tourism Area Life Cycle (TALC) can be applied to thermal resort towns, as it is a useful framework for understanding the evolution of tourism destinations over time. The TALC model describes a typical cycle that a destination can go through, starting with exploration, followed by involvement, development, consolidation, stagnation, and finally decline or rejuvenation. These stages are based on changes in visitor numbers, types of tourism products and services and the level of infrastructure and investment in the destination (Butler, 2006b). Thermal resort towns often start with the exploration stage, where visitors are attracted to the destination because of its natural thermal waters and related activities. This can be followed by the involvement stage, where infrastructure is developed to support visitor activities such as the construction of hotels, spas and related services. As the destination grows, it moves into the development stage, where the tourism industry becomes more established, and there is a greater range of products and services on offer, stages which will be emphasized in the current paper.

RESULTS

The attractive resources of the natural setting

The natural framework of the Beiuș depression is the result of the tentacular penetration of the Western Plain into the mountain range of the Apuseni Mountains, a phenomenon known in the Romanian geographical literature as the "gulf-depression" and in geology as the "western neogene basin". Overall, the depression connects two large relief units in the shape of an amphitheatre open to the northwest in which the central part is represented by the asymmetric corridor of the Crișului Negru River (Berindei, Măhăra, Pop, & Posea, 1977; Academia Română, 1992; Filimon, 2012). From the point of view of tourism development, there is a certain gap between the tourist potential and its capitalisation, not necessarily of the two towns, but rather considered from the viewpoint of the entire depressionary space. The mountain range that engulfs the Beiuș depression is formed by the Pădurea Craiului, Vlădeasa, Bihorului mountains on the north-eastern rim and the Codru-Moma mountains on the south-western rim. It is endowed with first-hand natural tourist resources and visited by tourists from the central European area (Hungary, Poland, Czech Republic, Slovakia etc.). In the mountainous area bordering the Beiuș depression, the karst areas of the Bihor mountains stand out (i.e. the Padiș endoreic basin with numerous superlatives recognized in speleology) and the Codru-Moma mountains with the Vașcău karst plateau, as well as the

bioclimate potential (i.e. Stâna de Vale mountain climatic resort stands out known for negative aeroionization). To these the biogeographic features add up defined by the existence of very spectacular extensive forest massifs and numerous natural reserves such as the great ravine Groapa Ruginoasa or the Cetățile Ponorului cave in the Bihor mountains, included in protected areas of the Apuseni Nature Park and Natura 2000 sites.

The geographical literature is very rich and features in detail all the natural tourist mountain resources within various research works Berindei, et al (1977), Bleahu & Bordea (1981), Godea (1981), Roșu (1993), Cocean (1995), Petrea (2004), Gaceu (2005), Filimon, et al (2010), Filimon, et al (2011), Linc, et al (2011), Filimon (2012), , Linc, et al (2017), Ilieș, et al (2014), Imecs, et al (2016), Orășeanu (2016), Vlaicu, et al (2016), Orășeanu (2020), Caciora, et al (2021), Boc, et al (2022), Tătar, et al (2023) etc.

The depression area of Beiuș is featured as a tentacular penetrated plain bay, deep between the hills and is characterized by the existence of a wide meadow and six levels of terraces covered with secondary steppe meadows or some hygrophilous elements along its watercourses (Academia Română, 1992). Here, the natural tourist potential is not particularly noticeable except for the presence of geothermal waters.

Geothermalism statu quo: a hotspot for the development of tourism in the Beiuș Depression

In Romania, against the background of a foreshadowing world energy crisis, the exploration of crude oil and natural gas resources began in the 1960s, with some hydrothermal deposits being discovered after geological prospecting for hydrocarbons. In western Romania, the thermal waters sources of the Apuseni Mountains are associated with two geothermal provinces and for the current study we will refer the regional province located on the border with the Western Plain, known for the high geothermal flow due to the high position of the earth's mantle (i.e. Felix-1 Mai thermal spa area and the western Neogene basins of Borod on Crișul Repede River, Beiuș on Crișul Negru River and Zarand on the Crișul Alb River). Among them, the Beiuș basin is the area with the most hydrothermal springs and sums up the necessary conditions for the presence of high temperature thermal waters (i.e. foundation with productive collecting rocks and great depths) (Orășeanu, 2016; Orășeanu, 2020).

In the resort town of Beiuș, the geothermal reservoir was revealed between 1995 and 1996 by a well that reached a depth of 2576 m. Currently, two wells are in operation since 1996 and 2004 with a wellhead water temperature between 75-84°C and a reinjection well (Roșca & Antics, 2003; Bendea, Bendea, Roșca, & Cucuțeanu, 2013). As for the resort-town of Ștei, there are two geothermal water boreholes, i.e. F3010H located in the vicinity of the weather station Ștei and F3002H located in the area of the Avram Iancu-Ștei National College, dug in 2001 at 1300-1500 m, with a 52°C temperature artesian discharge (Local Council of Ștei Town, 2020). The main uses of geothermal waters lie in the geothermal energy and thermal water use. In order to optimize the use of the geothermal potential, the direct use of the geothermal water energy from a geothermal well by more serial-connected beneficiaries is recommended. For example: electricity production, space heating, domestic hot water preparation, wood drying, greenhouses, animal husbandry, aquaculture, balneology, waste heat recovery using heat pumps.

In Bihor county, geothermal water was experimentally used in fish farming (at Livada de Bihor for fish nursing in thermal water in the 1980s) and in agriculture (for heating some greenhouses in the city of Oradea, the villages of Roșiori, Livada de Bihor, Toboliu which are currently still in operation). On a larger scale, geothermal water is used to heat blocks of flats or institutions in the cities of Oradea, Beiuș, Marghita, Săcueni, the village of Livada de Bihor, but the most common and well-known uses are in balneology within treatment facilities such as those of Băile Felix, 1 Mai spas and Oradea municipality, Marghita and Aleșd towns for leisure. In the countryside area there are several thermal pools in Tămășeu, Livada de Bihor, Simnicolau de Munte, Mădăras, Chișlaz.

In Beiuş, the main use is that of home heating, for a long time being the locality with the lowest price per gigacalorie (GCal) in the country following the implementation of the "Beiuş - geothermal city" project. Gradually, the foundations were laid for the thermal water use for leisure in 2004 when the first thermal pool was put into operation. From 2021, the thermal water use has diversified by using it in the cosmetic industry in the form of a spray, i.e. Beyus, branded as thermal water from Transylvania. In the town of Ştei, until recently, there was no obvious interest for tourism exploitation of this natural resource. After the immense success known by the nearby Nymphaea Aquapark in Oradea city, opened in 2017, but especially due to the new European funding opportunities, recently many local and national administrations have submitted the documentation to get the local or national-interest tourist resort status. Taking advantage of the existence of geothermal deposits, nine administrative-territorial units of Bihor County got the local interest tourist resort status between the years 2020-2022, among which the towns of Beiuş and Ştei which received this status in 2020. In the town resort of Beiuş, it is planned to build a balneoclimatic aqua park with four thermal water pools, three hotels with an accommodation capacity of 300 places intended to provide the aqua park spa treatments and accommodation for the potential tourists transiting the town to get to the nearby mountains.

Regarding the resort town of Ştei, the local administration aims to implement two projects "Pool leisure area" and "Planning of Lake Ştei leisure area". The main thermal water use aims to heat some institutions (i.e. the town hospital, school units), but the leisure and balneology is targeted through the building of the swimming pool, the city pool park and the balneological centre (Bursaşiu, 2022). The favourable premises that led to the declaration of Ştei as a resort town relate to an important geographical transit location, the capitalisation of thermal waters, existence of accommodation and ancillary services, the existence of old historical monuments, opportunities provided for the development of an industrial park due to low fiscal taxes.

Supply and demand in Beiuş and Ştei tourist resorts

To understand the stage of tourism development we carried out an inventory and analysis of the tourist accommodation, catering, entertainment and visitor attractions supply from both Ştei and Beiuş resort towns as well as a compared analysis of the demand side whose results are discussed and analysed below. The natural component of thermal waters existence allowed the granting of these two urban centres tourist resort status where the tourism supply and demand analysis play a crucial role and allowed to understand how they evolved progressively on the path of tourism development.

The tourist product is a combination between the tourist attractions and the tourism industry, the former relating to natural and man-made attractions and events (Weaver & Lawton, 2014) and the latter to their supportive background such as food and beverage sector, accommodation and entertainment facilities. The accommodation sector is a core focus for analysts because it draws the largest expenditures during the trip and adds value to the tourist experience through the ancillary services it provides, besides mere shelter. Many have diversified their accommodation supply also providing food, beverage and spa services in order to keep the tourists as long as possible within their premises. Accommodation as a product may feature a series of characteristics such as accessibility, facilities, service level, image, price and incentives for repeat customers (Page, 2019).

Beiuş and Ştei town-resorts are at the inception of their tourist production with very few *accommodation* structures. They feature a quite unitary development in terms of accommodation units, Beiuş municipality taking the lead since 1990 with 2 accommodation structures whereas Ştei owned only one structure in 1990. Further on since 2000 onwards they followed the same pattern with one structure so that after 2020 both resorts own five accommodation structures (Figure 2) with over 100 places each. The accommodation facilities from Ştei are quite diversified with a hostel, two guesthouses and rooms within the two school boarding houses with a total capacity of 110 places in 2021. The accommodation places in the Beiuş resort amount to 117 in 2021. Both resorts followed an ascending trend since 1990, the town of Ştei leading the sector with 121 places in the year 1990

while Beiuș town only had 51 places in the same year. In the year 2021, the accommodation places are unitary for both resorts with 117 places in Beiuș and 110 in Ștei (Figure 2).

The tourist supply also includes the *catering sector* at which both Beiuș and Ștei take the lead in all the supply analysis, compared to accommodation and attractions. Therefore, in Beiuș town resort we have 50 catering structures (Figure 3) among which 35 belong to restaurants and 15 belong to bars and cafes. In the case of Ștei its catering supply amounts to 30 structures (Figure 3) among which 22 belong to restaurants and 8 belong to bars and cafes. The inventoried supply consists of cafes, pizzerias, bars, pubs, cafeterias, coffee shops, fast-foods, modern and classy restaurants. Due to the fact that the catering inventory is stored with the Chamber of Commerce of Bihor County under the national economy activities' classification (i.e. CAEN code in Romanian) with the codes 5610 for restaurants and 5630 for bars and other beverage services, the selection of firms operating under these codes is not conclusive because a single firm may operate under more CAEN codes, such as 5610 or 5630 but it may not be their priority activity and not even functioning with this purpose. For instance, at the level of Beiuș municipality we found 69 firms operating with these two afore-mentioned catering-related codes but it is uncertain if this is their main activity or some other CAEN codes which they operate under are their main activity. In order to avoid the confusion, we resorted to localising the food and beverage structures by the tool of Google Maps for both Beiuș and Ștei resorts as well as in-situ field survey.

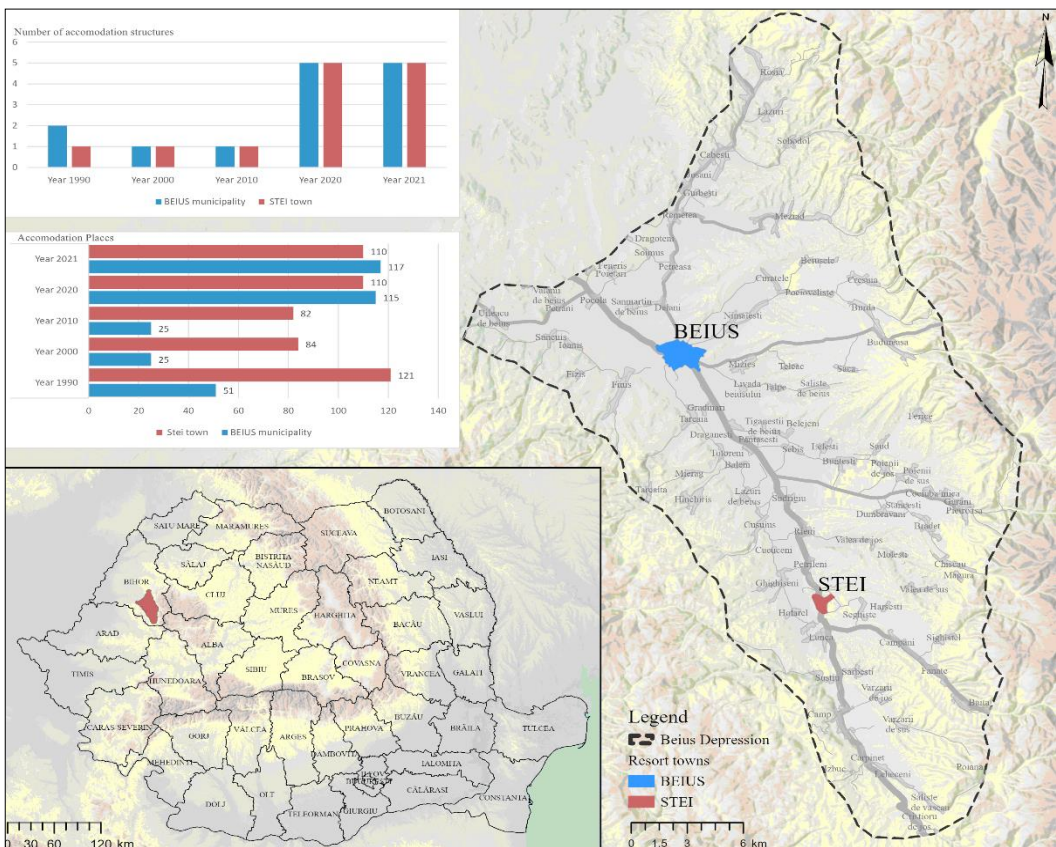


Figure 2. Number of accommodation structures and places in Beiuș and Ștei
 Source: National Institute of Statistics (<http://statistici.inssse.ro>) and City Hall of Ștei statistical data sheets



Figure 3. Catering supply in Beiuș and Ștei in 2021
Source: authors own elaboration based on field survey

Further on *visitor attractions* play a primordial role of the tourist experience being at the heart of the tourism industry and as main drivers and motivators for taking a trip in the first place. They bring extra flavour to a destination through their uniqueness, quality and authenticity. In the case of Ștei town there is a totalitarian man-made heritage (Tătar, et al., 2021) prevalent throughout the town which confers it authenticity and makes it stand out versus its counterpart Beiuș. Ștei leads with 17 visitor attractions (Figure 4) ranging from the natural to man-made attractions related to a memorial house, statues, fountains and totalitarian architecture buildings. The natural visitor attractions from Ștei relate to the river of Crișul Negru, the geothermal waters and a lake. The latter is located at the outskirts of the town and spreads over a densely Douglas pine and oak trees-forested area of 33.102 sqm. From the lake starts an 8-hour trekking route to Șaua Vârtop, an itinerary marked by Salvaspeo Bihor, a branch of the Bihor County Mountain Rescue Service, based in Ștei. The trekking route touches picturesque spots such as average peaks, trails, oak and pine forests, springs, limestone areas and natural erosion pits. It starts from an altitude of 275 m at the lake and reaches up to 1475 m in Țapu Peak.

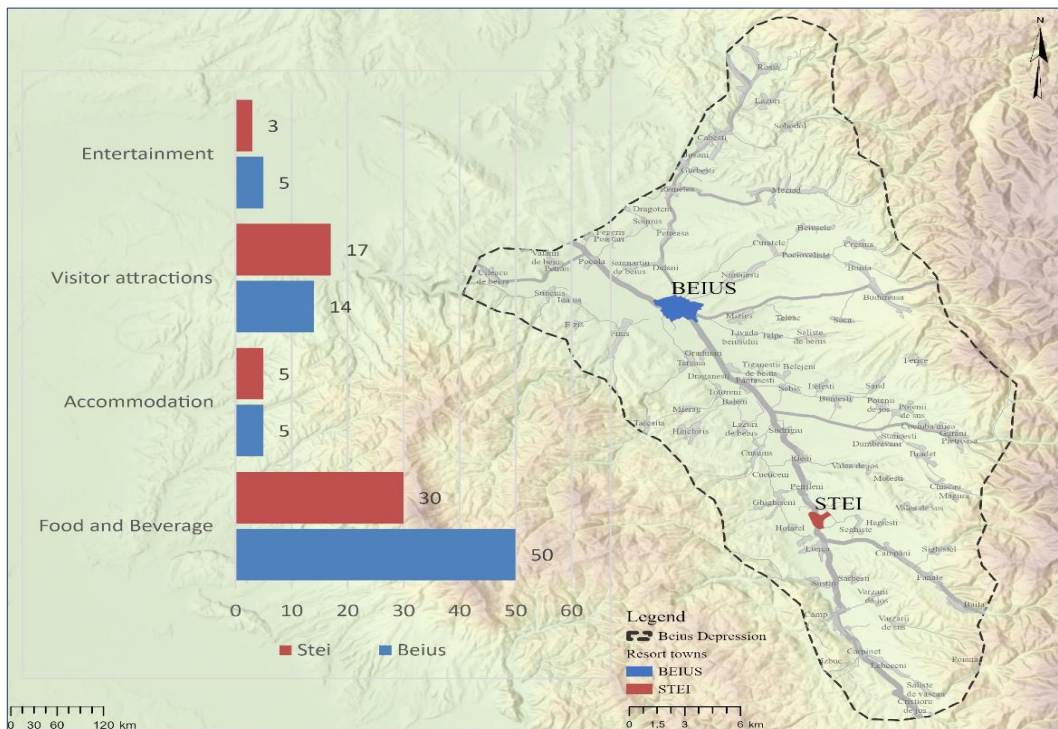


Figure 4. The tourist supply in Beiuș and Ștei in 2021

Source: authors own elaboration based on field survey and National Institute of Statistics (<http://statistici.inse.ro>)

Beiuș on the other hand features a lower number of visitor attractions amounting to 14 (Figure 4) which mainly refer to an ethnographic museum, statues and old churches, according to the information provided by the official website of Beiuș City Hall (Primăria Beiuș, 2022). The current inventory targeted the visitor attractions that have the highest impact and attractiveness for tourists, being not exclusive.

The *entertainment* sector is the most important for the research since it targets directly the capitalization of the natural resources of geothermal waters and in this sense Beiuș municipality leads the way with the two water pools named Gossip and Laguna, but only the latter capitalizes the thermal water for tourist purposes. Further on other entertainment facilities relate to parks with kids' playgrounds.

In Ștei the geothermal water is not capitalized for tourism yet, the local administration also owns a pool and plans to build a balneology complex for the geothermal water capitalization (Bursașiu, Baza sportivă CN Avram Iancu, Ștei, 2020). Other entertainment facilities from Ștei refer to Crystal Pool, a town aqua park under renovation, but not heated with thermal water and a sports hall and ground.

From the two analysed resorts, Beiuș has a lead in terms of geothermal use and capitalization, as it started drilling and discovering the geothermal waters since 1995 and further on started exploiting it for central heating during 2002-2004. The probe F3001 drills water from up to 2640 m deep, whose temperature rises up to over 80°C. Annually, Beiuș municipality consumes more than 200,000 Gcal which are exclusively used from the geothermal resources which makes it a green city. It also plans to build a geothermal water park with four pools among which an Olympic one, one for polo, leisure and kids.

Ranking all the supply services hierarchically the lead is held by the catering sector for both urban centres of Beiuș and Ștei, followed by the visitor attractions, the accommodation and entertainment facilities (Figure 4). Hence the best covered sector is the food and beverage one, somehow showcasing a very entrepreneurial local society and which surely counts a lot in the whole tourist package, nonetheless some of the main drivers for tourism still need improvement such as the sector of entertainment, but this shortcoming is compensated by the ongoing leisure-related projects.

In the tourism analysis both supply and demand are interdependent and attempting to balance the two parts is the focus of most tourism entrepreneurs. So matching supply with demand is a desirable aim for the tourism business or narrowing this gap the greatest possible. Demand relates to tourists who consume visitor attractions visually, make use of the accommodation and entertainment facilities and physically consume the food and beverage supplies. Demand has been defined in many ways, irrespective of its multiple definitions, it basically revolves around tourists. The main elements of the tourism demand relate to effective or actual demand which is the number of people who participate in tourism, suppressed demand or the potential demand and no demand. Demand is triggered by economic, social-psychological and exogenous determinants (Page, 2019).

As stated above matching supply and demand is a key for the evolution of this industry therefore the current paper approached both angles of the supply and demand. According to the chart below and analyzed statistics from the National Institute of Statistics of Romania it came out that both Ștei and Beiuș had their hay days 30 decades ago, namely in the early 2000 both resorts numbering over 1000 tourists with a higher propensity in Ștei, i.e. 1342 arrivals in 2001, further on in the years 2010, 2020 and 2021 demand in Ștei and Beiuș witnessed a continuous drop. Unfortunately the data provided by the National Institute of Statistics showed gaps into statistics, in the year 2010 we only found available arrivals for Ștei whereas in the next years of 2020 and 2021 the only available arrivals were provided for Beiuș municipality.

By analysing the accommodation supply and demand along the interval 1990-2001 for the accommodation supply and since 2001-2021 for the arrivals we can note some disproportions when matching supply and demand. The most balanced years between supply and demand were 2000 and 2021 with an over preponderance of the demand in Beiuș where there were 25 accommodation places and 1025 arrivals and in Ștei there were 84 places which hosted 1342

tourists (Figure 5). For the following years 2010, 2020 and 2021 the analysis is hindered by the lack of available statistical unitary data for both resorts, some statistics missing for either Beiuș or Ștei as unavailable from the National Institute of Statistics, but nonetheless it shows a general decrement of arrivals and a stagnant supply. For instance in the case of Beiuș it shows an oversupply versus demand with 117 places available in 2021 and 334 arrivals throughout the year. So currently demand indicates a low tourist consumption pattern in these two urban centres and implicitly an oversupply versus demand. Nonetheless we should take into consideration that tourist arrivals number has only been partially transmitted to the National Statistics Institute.

The analysis of the supply and demand allowed the elaboration of the life cycle of tourism development of the two resorts also from the perspective of geothermal waters capitalization and consumption (Figure 6).

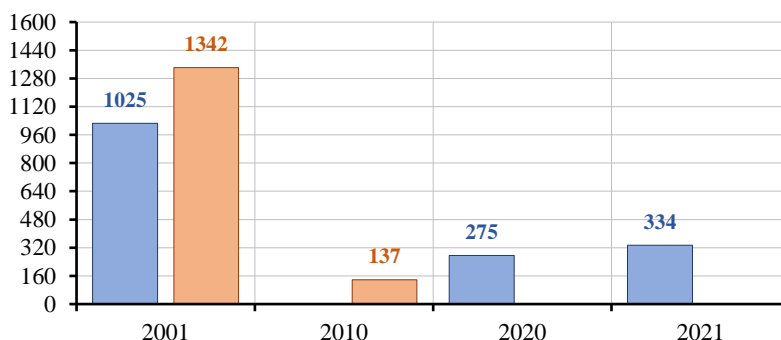


Figure 5. Tourist arrivals from Beiuș and Ștei

Source: authors' own elaboration based on the National Institute of Statistics data (<http://statistici.insse.ro>)

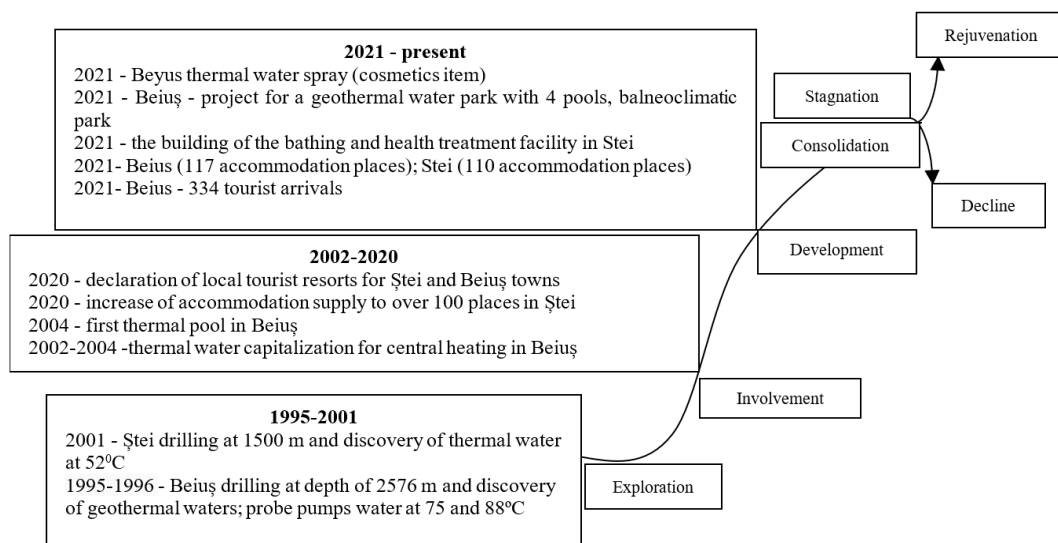


Fig 6. Tourism Area Life Cycle of Beiuș and Ștei apud Butler (2006)

Source: authors own elaboration

The thermal capitalization of waters occurred differently for the two urban centres, in the case of Beiuș it took place during 1995-1996 with *the exploration* stage of the prospecting works for thermal water identification and found at temperatures of 75° and 88°C. In Ștei town it took place in 2001 when the thermal waters were explored and found at temperatures of 52°C, therefore

the latter inferior to that of the former. Ştei's thermal water capitalization for tourism is currently inexistant, except for the locals who bathe in the 52°C running thermal water borehole site (Figure 7), despite no existing facilities or infrastructure. Nonetheless intense works are taking place at the thermal water treatment centre which is still under construction in Ştei (Figure 8). This stage characterizes the exploration phase of thermal waters tourist capitalization.

The *involvement stage* represents the beginning of providing facilities mainly for visitors (Butler, 2006a) and locals. In the case of Beiuş this stage started earlier during 2002-2004 when the town capitalized thermal waters for central heating, thus becoming an entirely green city from this perspective and in 2004 it opened the first thermal water pool in Beiuş (Figure 9). In Ştei the involment stage occurred in 2020 when the townhall authorities applied for and recived the status of a local tourist resort. Both Beiuş and Ştei were declared local interest tourist resorts based on their thermal resources in 2020. The accommodation supply started subsequently to increase and diversify to over 110 paces in Ştei and to 115 places in Beiuş urban resorts. During the *development stage* there are many projects for the capitalization of the termal waters in the future, in the case of Beiuş a balneoclimateric geen complex is foreseen with the building of hotels and four pools with purposes for water sports, leisure and cure. In the case of Ştei in 2021 an ample project started and is in progress which consists of the building of a recovery hospital/health treatment facility based on thermal waters, accommodation facilities and a covered pool for cure purposes. Furtheon the thermal waters of Beiuş are also capitalized in cosmetics with the item Beyus thermal water spray released on the market. In 2021 Beiuş hosts 117 accommodation places and Ştei 110 accommodation places.



Figure 7. Thermal water well from Ştei
Source: authors



Figure 8. Thermal treatment complex of Ştei
Source: authors



Figure 9. Thermal pool in Beiuş
Source: authors

CONCLUSIONS

The favorable premises that led to the declaration of Beiuş and Ştei as town resorts relate to an important geographical transit position, the capitalisation of thermal waters, existence of accommodation and ancillary services and the existence of old historical monuments. Their biggest asset relates to the thermal waters whose capitalisation started earlier for Beiuş and later in Ştei. The use of geothermal waters for leisure, although in different stages of implementation supports the main hypothesis of a sustainable tourism development based on thermo-mineral waters.

Both resorts have over 100 accommodation places with a diversified offer of hotels, guesthouses and hostels. The catering supply is better provided for Beiuş with 50 such units whereas Ştei holds 35 units under the form of cafes, pizzerias, bars, pubs, cafeterias, coffee shops, fast-foods, modern and classy restaurants. In terms of visitor attractions, the town of Ştei is better provided in the sense that it holds an old and unique totalitarian heritage with specific architecture and well-structured urban planning and it also belongs to the Atrium network for the promotion of its heritage.

The entertainment facilities feature more parks, as well as thermal and cold-water pools in both localities. An earlier capitalisation of the thermal water for leisure is in Beiuș whereas Ștei is unfolding many infrastructure projects for the cure and leisure purposes. When analyzed simultaneously and applying Butler's concept of tourism area life cycle it emerged that both resorts passed through the stages of inception, involvement and reached development stage from the point of view of thermal water capitalisation. After the implementation of all engaged ongoing and future projects the two resorts can stand as examples of good practices for the nearby southern small towns of Vașcău and Nucet, all belonging to the Depression of Beiuș. Studies of Fabi et al. (2021), Hojcska (2019), Rodek et al. (2020) also suggest capitalizing on resort towns heritage and innovation techniques for an enhanced regional development. Thus, the two resort towns can improve their status as local development poles by assimilating the balneo-tourist function on a larger scale and become a turn table or spearhead for tourism that takes place on the western side of the Apuseni mountains.

The conclusion that can be drawn from the application of the Tourism Area Life Cycle (TALC) model to thermal resort towns is that the development of these destinations is a complex process that involves a range of factors, including natural resources, infrastructure and investment. The TALC model can be a useful tool for understanding the evolution of spa towns over time and identifying Beiuș and Ștei's challenges and opportunities for sustainable tourism development. The model shows the importance of infrastructure development and service provision in attracting and retaining visitors, particularly during the development stage.

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