

# A review of balneary-climatic tourism in Suceava County and the related studies

Luciana-Alexandra COSTAN (BRICIU) <sup>1\*</sup>

<sup>1</sup>Ștefan cel Mare University, Suceava, Romania

\* Correspondence to: Luciana-Alexandra COSTAN (BRICIU). E-mail: luciana.briciu@gmail.com.

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**ABSTRACT:** A brief review of the studies on balneary-climatic tourism in Suceava County highlights the existence of important resources in the study area for this type of tourism. Past and present tourist facilities for balneary-climatic tourism are described, with a focus on the unexploited potential. The tonic-stimulant bioclimate is specific to the greatest part of the territory because the mountainous area stretches from the western boundary to the eastern third of the county. Of high interest is the Vatra Dornei – Poiana Stampei area due to the numerous mineral waters and the peat bogs. The case of Cacica salt mine, which is used in the aerosol therapy and is an important tourist attraction, is discussed. The presence of hydrocarbon vapours in the mine hinders the beneficial effects of the salt deposits, but this subject was not analysed by local authorities in order to mitigate the issue. Pools with salt water are used by tourists in the study area, but other surface freshwaters are also useful for balneary purposes.

**KEY WORDS:** mineral water, peat bog, bioclimate, salt mine.

## 1. Introduction

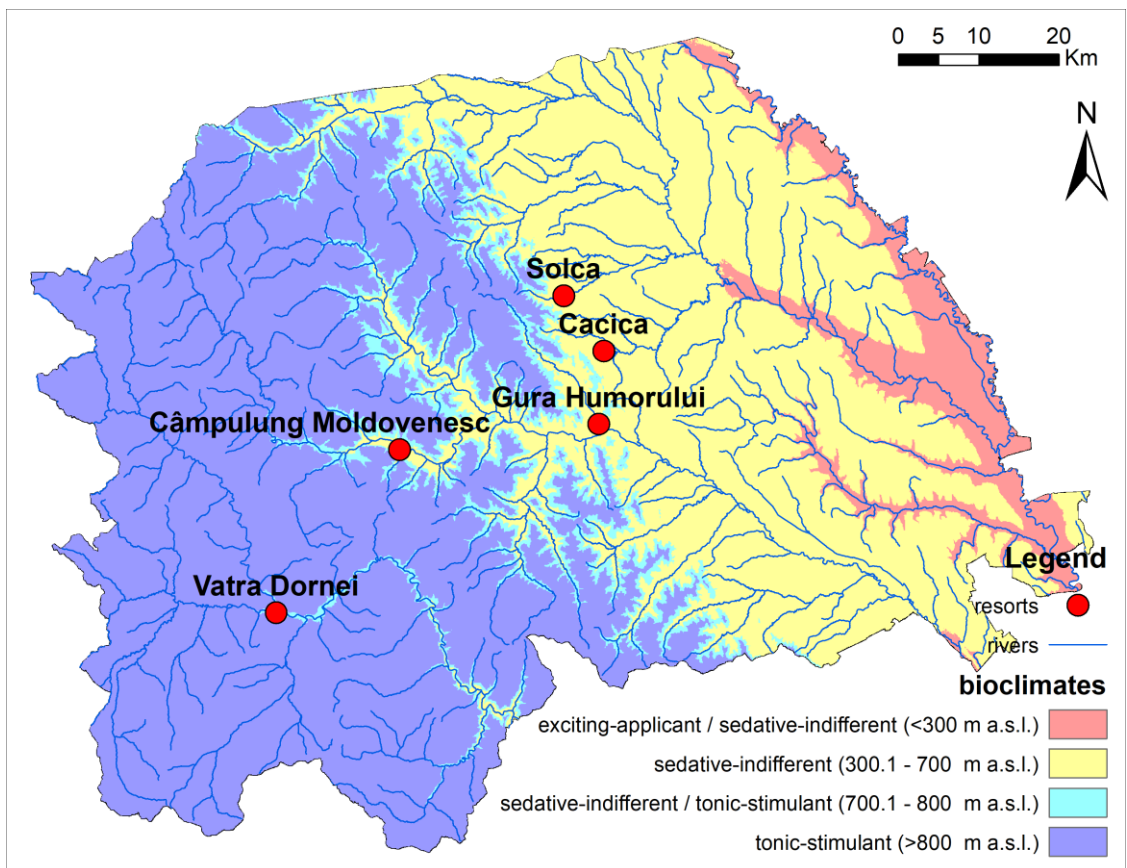
Natural therapeutic factors have been a reason for population movement since ancient times, these movements being considered the incipient forms of current balneary-climatic tourism. Balneary-climatic tourism is, probably, the most promising tourism sector, as it uses different elements of both natural and anthropogenic environments (Shishimanova, 2014). Although balneary-climatic tourism addresses to a specific niche of tourists (Georgiev and Vasileva, 2010), it has the advantage of overcoming the boundaries imposed by seasonality for other forms of tourism.

The occurrence, evolution and development of balneary-climatic tourism are closely related to climate change (Hein et al., 2009), changes that affect both climatic and hydrological elements and indicators (Ratz and Vizi, 2004). Climatic conditions may impose the seasonality of tourist activities, especially during summer and winter (Blazejczyk, 2007).

The study of the thermal and cold mineral waters, in terms of their importance and role in tourism, is a topical subject, especially in the context of the overgrowth of the balneary-climatic tourism industry.

## 2. Study area

Suceava County is one of the major administrative units of Romania. It is located in the north-eastern part of this country, in a historical region named Bukovina. This county has a surface of 8553 km<sup>2</sup> and a population of 634840 inhabitants, according to the 2011 census. The terrain is divided in the ENE half of the territory, which is a hilly and plateau area (Moldavian Plateau), and the WSW half, which is a mountain area (Carpathian Mountains). Climate of the study area is temperate continental. Due to the difference in terrain elevation above sea level (a.s.l.), there are various bioclimates within Suceava County (Fig. 1).



**Figure 1** Bioclimates of Suceava County (classification based on H.G. 1154/2004 with modifications) and balneary-climatic resorts. This figure is available in color online at [www.georeview.ro](http://www.georeview.ro).

### 3. Review

Balneary and climatic leisure activities imply the use of water and air resources with exceptionally beneficial properties (from a biological point of view) by humans. Over time, the balneary-climatic tourism has had many glory or decay periods; probably the worst was the one during the Middle Ages, when usage of the thermal baths has been prohibited for a long time, mostly to stop spreading the plagues and also because the Church saw it as an immoral practice. Only in the XVI-XVII centuries the mineral springs are used again in therapeutic and medical purposes in Europe, including on some regions from Romania (Transylvania, Bukovina and Banat), as proved by the numerous papers published about that time (Teleki et al., 2004).

Dimitrie Cantemir's paper - "Descriptio Moldaviae" - (Cantemir, 1716) mentions, for the first time, the mineral springs from Bucovina. In his paper, Cantemir is mentioning the traditional Romanian medicine and the mineral waters that are used on medical purposes.

During the XIX<sup>th</sup> century, the sanitary reform initiated by Maria Teresa lead to a big number of papers on the medical domain and also to establishing and implementing some regulations regarding the analyses of some mineral springs from Transylvania and Banat. The regulations contained therapeutic indications and the manner of using the mineral springs (Teleki and Munteanu, 2012). From the same period, there can be found information regarding the waters from Băile Herculane, Băile Homorod, Băile Felix, Bazna and the export of the bottled water from Borsec. In the XIX<sup>th</sup> century, new resorts appeared, as a consequence of the numerous papers that revealed the benefits of the mineral waters over the human body (Sbenghe, 1979). In this century, the pharmaceutical industry is progressing, influencing the evolution of balneary climatology, due to the lack of the scientific fundamentals and the slow effects of the balneary-climatic therapy (compared to the drug treatments) (Silișteanu, 2014). In the XX<sup>th</sup> century, the studies regarding balneary-climatic tourism improve and, based on those, new development plans for the balneary-climatic resorts are made (Teleki and Munteanu, 2012).

The first Romanian balneology paper was written by Ladislau Pop and published in 1821. Numerous other papers with information about the mineral springs and waters and other therapeutic elements (such as therapeutic muds or the salt mines bioclimate) from Romania were published until today (Teleki et al., 1984; Căndea and Simion, 2006).

On Romanian territory, the balneary-climatic tourism suffered the same transformations as in other European countries, but the diversity of the natural factors that can be used on balneary-climatic cures made reviving and developing of this type of tourism much easier.

In Suceava County, the use of mineral springs is known since the XIX<sup>th</sup> century, when the mineral waters from Poiana Negri have been chemically analyzed. In 1845, the first spa resort was built at Vatra Dornei and, for the next 50 years, it has been improved with modern installations and techniques involving the therapeutic mud from Poiana Stampei begun.

At the beginning of the XX<sup>th</sup> century, more balneary, climatic and balneary-climatic resorts developed in Câmpulung Moldovenesc (climatic resort, known for ketone baths, mud and carbonic acid), Gura Humorului, Dorna Candrenilor (mud exploitation), Coșna (mud exploitation from the peat bogs Borcut and Poiana Coșnei), Șaru Dornei and Iacobeni (balneary and climatic resorts of local interest). The Cacica-Solca area is the newest added to the resorts list and presents a high touristic potential, based on the diversity of the therapeutic resources, such as the chlorinated-sodium waters, sulfurous waters and salt mine microclimate, springs with sour water or

ferruginous water (Andronic, 2009). In Romania, the studies on balneary-climatic tourism resources and the development of this type of tourism focus especially on the analyses of the known resorts, such as Băile Herculane area, even though other areas have an increased touristic potential (Turnock, 1990). A comprehensive study on the touristic potential of balneary-climatic resorts in Suceava County was only recently written (Bistricean, 2018), highlighting details about bioclimates and mineral waters and calculating indices that indicate the tourist attractiveness of various areas; specific tourist activity and fluxes are also described (most tourists are Romanians). Bioclimatic regionalization in Suceava County was discussed by Bistricean et al. (2017).

Of high interest for the balneary tourism in Romania are the lakes and rivers, not only the sea waters. In Suceava county, there are some natural and anthropic lakes that have some balneary and climatic potential for tourist activities such as: Iezer, Bolătău, Rogojești, Pocoleni etc. (Briciu and Oprea, 2011).

Hydrotherapy got more attention in the past years, especially due to the development of the SPA Wellness Centers that use, mostly, the water resources (Kron, 2007). A recent study on SPA tourism, as a comparison between Romania and Spain, revealed that this tourism sector is based on the healing properties of the mineral waters, being in a continuous development, in particular due to the increasing importance of medical services and of the programs like "One Week Recovery" (in Romania) or "IMSERO" (in Spain) (Aluculesei, 2015).

The quality and quantity of the water set the touristic profile of a region through the number of the tourists it attracts and the time of the year for the tourist activities (Ratz and Vizi, 2004). The water resources, as mentioned, generate tourist flows and impose, like the climatic factors, the seasonality of tourism activities. In Romania, it can be observed, as in other central-eastern European countries, an increase of the importance and use of water resources for tourism purposes (Briciu and Oprea, 2011).

Therapeutic muds from Romania are of interest since the XIX<sup>th</sup> century, especially the muds from Techirghiol and Vatra Dornei - Poiana Stampei (Munteanu and Dumitrașcu, 2011). Mud therapy can be used for packings, cataplasms, baths, gynecological applications or therapeutic massages. According to the type of the mud (sapropel, peat or mineral) and the medical conditions of the patients, there can be used one or more treatment techniques.

The salt mines have been studied for their specific microclimate, with an emphasis on the touristic and medical potential for some salt mines from Romania, including Cacica salt mine (Simionca, 2013). Based on these studies, a series of measures have been proposed, in order to reduce the effects of the anthropic pollution on the salt mines.

Cacica area is known for the salt mine and the salt water pools, which have increased in number and quality. The continuous development of the commune leads to a high number of tourists that visit the place. The salt mine is used for aerosol therapy, but the presence of hydrocarbon vapours from the mine can affect the benefits of the salt deposits over the human body. Unfortunately, this issue has not been analysed yet.

Nowadays, the emergence and development of artificial tourist centers is an important trend; such a center is Therme Bucharest (Ilfov County), where thermal waters are pumped from a depth of 3.1 km, or the artificially salted interiors ("Salinele Roman" are surface therapeutic spaces, invented and patented by N. Ș. Roman). In Suceava County, "Salinele Roman" can be found in Suceava city, where the interior spaces were arranged with salt from Slănic Moldova salt mine. "Salinele Roman" are the only artificially salted interiors patented in Romania, with proven effectiveness much higher than any other types of surface salt mine. At the same time, they are

the only surface salt mines that reproduce integrally the physical, chemical and biological conditions of a deep salt mine.

Overall, a high touristic potential was observed in the western part of Suceava County, mainly due to the high terrain elevation and the cleaner air and water (Briciu and Oprea, 2011). The bioclimate is mostly tonic-stimulant in this part of Suceava County (Mihăilă and Bistricean, 2018), with a positive effect on tourist activities.

#### 4. Conclusions

The balneary and climatic leisure activities in Suceava County are of moderate intensity when compared to the other Romanian counties. The literature describing the balneary-climatic potential and tourism of the studied area is scarce. Balneary-climatic tourism in Suceava County will benefit from the governmental program that will invest funds into spa resorts.

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