

## Geothermal Resources as a Promoter of Regional Development, The Success Story of the Styrian Volcanic Region

Horst G. Hoenig

horst.hoenig@ingenos.at , J.M.Steffnweg 4, A 8010 Graz

www.ingenos.at

**Keywords:** Geothermal Resources, Thermal Spas, Regional Development, Sustainable Tourism Development, Austria.

### ABSTRACT

The geothermal resources of Eastern Styria were discovered with the exploration of new oil fields in the area. These investigations were not successful concerning new oil resources and the discoveries of geothermal water at depths of 1800 to 3200 meters were ignored for two decades. In the beginning of the eighties, the newly discovered resources were re-evaluated for their balneological values. Only one thermal spa from 1830 had used these resources for therapies and cures: Bad Gleichenberg, a well known spa for psoriasis, neurodermitis, asthma and bronchitis. This thermal spa depended heavily on co-operation with public health insurance.

From the eighties until the new millennium, four new health spas with different organisational concepts and target groups were developed.

The success of the five Styrian thermal spas had a very positive impact on the economic regional development of the Eastern region of Styria. The overnight stays rose from 300.000 to 2,100.000 tourist nights in the period from 1982 to 2002. The high occupancy of 70% over the year is almost equally distributed over the seasons and 75% of the new accommodations have a 4- or 5-star standard. Approximately 3,500.000 guests visit the thermal spas per year. The number of guests is continuously rising and new markets, such as Italy, Germany, Scandinavia and Japan are attracted to the spas.

Thermal spas are the main attractions for the rising wellness and fitness tourism. The increasing orientation of tourists and residents toward a healthy lifestyle creates new dynamics for this tourism sector. It was important, however, to involve the whole region in this orientation toward healthy natural products and health services. This way, the total region can participate in this new lead economy of health care and wellness.

The surrounding communities can participate very much in this tourist development. Not only 5-star guests need accommodations—agro-tourism has gained new attractiveness, especially by setting high standards in the restoration of old houses and the services offered. It was also extremely important to market the region as a tourist destination and not only the individual spas or hotels—under the name “Styrian Thermal Spas” for tourism and “Styrian Volcanic Region” for the products of the region. Each economic sector is promoting the destination and thus the other economic sectors, as well.

The marketing efforts now concentrate in the development of a larger regional destination under the name “EUROPEAN HEALTH DESTINATION,” including the neighbouring regions of Burgenland, North Slovenia and West-Hungary. This cross-border cooperation will result in further improvements and coordination concerning the quality of the product and the fame of the region.

### 1. INTRODUCTION

The Styrian Volcanic Region (Steirisches Vulkanland) in southeastern Austria has developed from a poor agricultural region with small farm units into a successful health-tourism destination. There has been since 1982 a constant rise of annual turnover, overnight stays, regional income and jobs provided by tourism directly and indirectly. In the year 2003, the annual turnover of health tourism reached 240 Mio EURO.

The success story was based on the decision to use the geothermal resources to create an emotional counter-world for relaxation, recreation and entertainment.

The five mainstays of the Styrian Volcanic Region are the thermal spas of:

- Bad Gleichenberg, since 1860 with Roman origins
- Bad Radkersburg, since 1978
- Loipersdorf, since 1985
- Bad Waltersdorf, since 1985
- Bad Blumau, since 1997

The general trend and change in attitudes concerning health have supported the development of the five spas: health is not seen anymore as fate, but as a state of wellness that can be supported by active and continuous preventive care. The desire for a long life has changed to the desire for a **long and healthy** life. Each of the five thermal spas has its special target groups: fun and entertainment for families and young people on the one side—and relaxation and anti-stress programs for businessmen or seminars with diets and therapies for older guests.

The rise of these thermal spas has coincided with a change in attitudes towards health. The promise of health from warm water with minerals from the depths of the Earth and floating in warm waters without effort represent for many people an adequate reward for daily hard work with elements of stress and conflict.



Figure 1: Geothermal hot spots in Eastern Styria's "Thermenland."

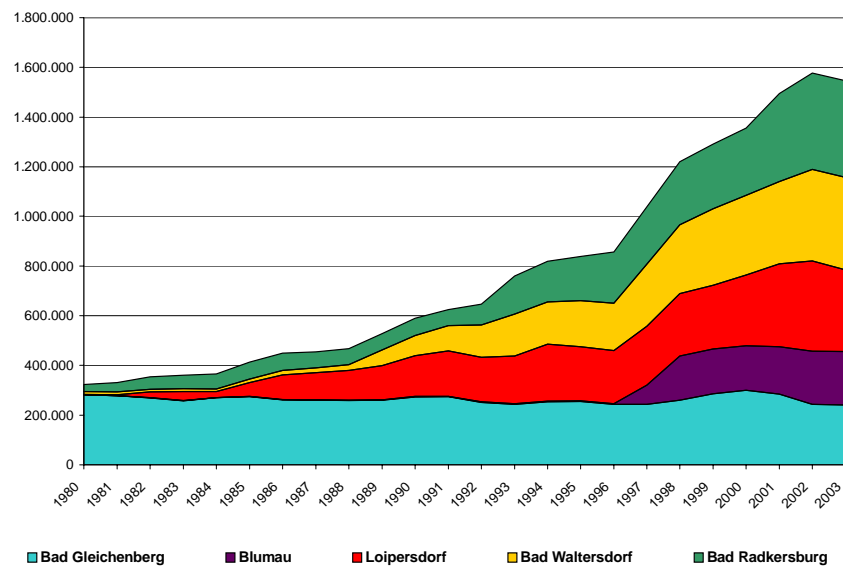


Figure 2: Development of overnight stays in thermal spas in Styria.

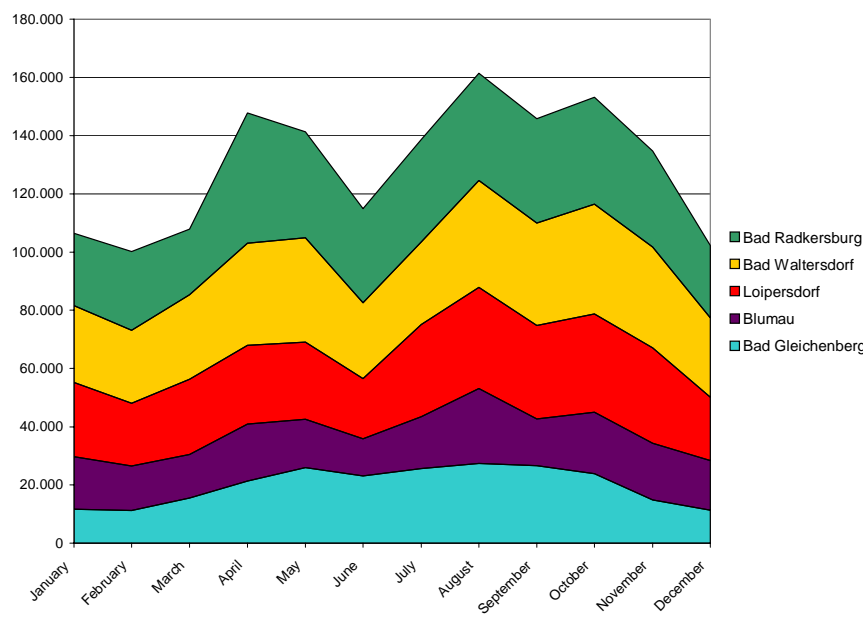


Figure 3: Overnight stays in 2003.

## 2. TRENDS IN HEALTH TOURISM

The definition of health has changed over the last decades: it is no longer the absence of illness. In our days there is an active definition of health, such as fitness and happiness, wellness and quality of life.

Individual responsibility for investments in preventive health has replaced the responsibility of state health insurance. Self-observation and individual care for a state of contentment are the new guidelines for individual development.

Alternative medicine and therapies from Asia—the holistic approach to health—attract many people who are disappointed by Western medicine split into so many special sections and subsections. Asian medicine makes the impression of a definition of health that covers body, soul and mind in a more comprehensive way.

The connection between diet and health, natural environment, natural materials and products from biologically responsible agriculture become more and more important to people who can afford this way of life.

The trend from indoor treatments to outdoor treatment is also a significant change in the field of health and fitness. Contact with nature has become more important: “soul sports,” meditation in attractive sites and spiritual locations become an important part of wellness in general.



**Figure 4: Water gymnastics.**



**Figure 5: Fango pack.**



**Figure 6: Relaxing and bracing gymnastics.**



**Figure 7: Massage.**

Social contacts, activities in groups and games as group therapies are additional new forms of relaxation and self assurance.

New packages of tour operators will be developed for the new wellness-entertainment tourism. Clubs will offer a complete set of “health empowerment.” Fasting, catharsis and special diets as well as anti-stress therapies will be offered and developed. The classical “cure tourism” will be changed completely.

### 3. THERMAL SPAS IN STYRIA

All thermal spas in Styria have in common excellent accessibility from Vienna (1,5 hours car drive) and Graz (1 hour car drive). Thus there is a population of about 2,5 Mio people living within the service range for day visitors of 1,5 hours. The oldest and most conservative spa is:

#### 3.1 Bad Gleichenberg

The oldest spa in Styria, with its 20 hectare park and buildings from 1840, has the nostalgic atmosphere of the old Austro-Hungarian Monarchy. Today the spa specializes in cures concerning psoriasis, neurodermitis, asthma, and bronchitis with a natrium-hydrogencarbonate-chloride acidulous mineral water. The cures last about 3 to 4 weeks. Day tourism is of secondary priority and the average length of stay is around 9 to 10 days.

The geothermal resources have a capacity of 3,0 l / sec and a temperature of 45,8° at a depth of 1.500m. Currently an upgrading of the thermal spa development is planned, together with new drilling with positive results concerning capacity, temperature and mineralization.



**Figure 8: Thermal Spa Bad Gleichenberg.**



**Figure 9: Thermal Spa Bad Gleichenberg at night.**

### 3.2 Radkersburg Spa

The Thermal Spa Radkersburg, connected to the medieval town Radkersburg by an attractive park, was opened to the public in 1978 with a specialization in kidney and urinary diseases. The close contact with the County Hospital Radkersburg has promoted the positive development of the spa. The original investment of 7,5 Mio Euro has been covered by the Styrian Government (74%) and the community (26%). In 1988, 1993 and 2002, the facility was improved and extended.



**Figure 10: Thermal Spa Bad Radkersburg, interior.**



**Figure 11: Thermal Spa Bad Radkersburg, outside.**



**Figure 12: Thermal Spa Bad Radkersburg at night.**

Currently, 2.400 m<sup>2</sup> of water surface, sauna landscapes and four-star restaurants offer 470.000 visitors per year an attractive proposition. About half of the visitors are day visitors only. The length of stay for the overnight tourists (350.000 / year) averages 5 to 6 days. This occurs because of the higher percentage of cure patients compared with the pure wellness spas.

The geothermal resources have a temperature of 78° at a depth of 1.930m. Currently, an upgrading of the thermal spa development is planned together with new drilling with positive results concerning capacity, temperature and mineralization. The type of mineral water is classified as natrium-hydrogencarbonate.

### 3.3 Loipersdorf Spa.

The Spa Loipersdorf opened in the year 1977 with a small pool of 70 m<sup>2</sup>. In 1985, the spa was rebuilt with a four-star hotel with 400 beds, large pools and a sauna landscape of 1.300 m<sup>2</sup>. Today it offers 12.000 m<sup>2</sup> of fun, bath and fitness areas with attractions especially for the young and active guests: an Acapulco landscape with a Caribbean flair, the Black Hole slide, wave pools and other attractions. About 750.000 visitors a year come to the spa, and the hotels with 2.000 beds have an occupancy rate of 80% over the year.



**Figure 13: Baby beach.**



**Figure 14: Water slide "Black Hole."**



**Figure 15: Swimming pool with artificial waves.**



**Figure 16: Styrian sauna.**

The spa was originally built with 22 Mio Euro, and 82% of the costs were investments by the Styrian Government, and 18% by the nine surrounding communities.

Loipersdorf was the first spa to concentrate on outdoor activities like mountain biking, fitness trails, horseback riding, golf, Nordic walking and other activities organized by Baldur Preiml, the ski-jump champion.

The geothermal resources have a capacity of 5,0 l / sec and a temperature of 62,7° at a depth of 1.205m. An upgrade of the thermal spa development is planned, together with new drilling with positive results concerning capacity, temperature and mineralization. The type of mineral water is classified as natrium-hydrogencarbonate thermal.

### 3.4 Waltersdorf Spa

The Spa Waltersdorf addresses itself to an older group of people looking for a quiet and relaxing stay with no fun and fitness programs. There no slides for children and no sports offered such as beach volleyball and other activities.

The main emphasis is on Asian relaxation therapies like Qui Gong, the five Tibetans, Tai-Chi and Tuina massages. A beauty center based on Feng Shui was created and a larger sauna landscape was constructed.



**Figure 17: Thermal Spa Bad Waltersdorf.**



**Figure 18: Aerial view from the thermal spa.**

The spa was financed only by private sources. The initial investment was 2,5 Mio Euro in the year 1985, but additional investments of 20 Mio Euro were made over the last two decades.

The geothermal resources have a capacity of 13,0 l/sec and a temperature of 61° at a depth of 1.553m. Currently an upgrading of the thermal spa development is planned, together with new drilling with positive results concerning capacity, temperature and mineralization. The analysis of the water shows a natrium-hydrogencarbonate-chloride content.

The geothermal resources are used to heat all of the spa facilities and public structures like schools and community buildings.

### 3.5 Blumau Spa

The spa with the greatest international reputation is Blumau Spa. The design is by the famous Austrian painter Friedensreich Hundertwasser together with the successful building tycoon Rogner. They constructed a fairytale spa with a 2.500 m2 pool area and earth-covered hotels with 1.000 beds on an area of 40 ha of land. Five restaurants, all serving foods grown on the basis of biological agriculture, provide the necessary variety not found in the surrounding villages.

This spa was a purely private investment of 55 Mio Euro; however, the Styrian Government invested about 20 Mio Euro for the drilling and improvement of the infrastructure. The community of Blumau, one of the poorest in Austria, founded a development corporation to invest in parks, village restoration and beautification measures.



**Figure19 : Thermal Spa Blumau at night.**



Figure 20: Thermal Spa Blumau interior.



Figure 21: "Vulkania."

The excellent marketing strategy and the uniqueness of the Blumau Spa resulted in a mix of 50% foreign visitors, whereas the other spas show just 15% foreign visitors.

The geothermal resources have a capacity of 20,0 l / sec and a temperature of 109° at a depth of 2.843m. Currently an upgrading of the thermal spa development is planned, together with new drilling with positive results concerning capacity, temperature and mineralization. The analysis of the water shows a natrium-chloride-hydrogencarbonate content.

Because of its high temperatures, the geothermal water is used to generate electricity for the spa and to heat the whole facility.



Figure 22: Thermal Spa Blumau outside.

#### 4. ECONOMIC IMPACT OF THERMAL SPAS

The regional economic impact of the thermal spas has been concentrated in the first decades of development only at the actual location of the spas. The guests were kept in the hotel resorts by offering entertainment and cultural events within the communities.

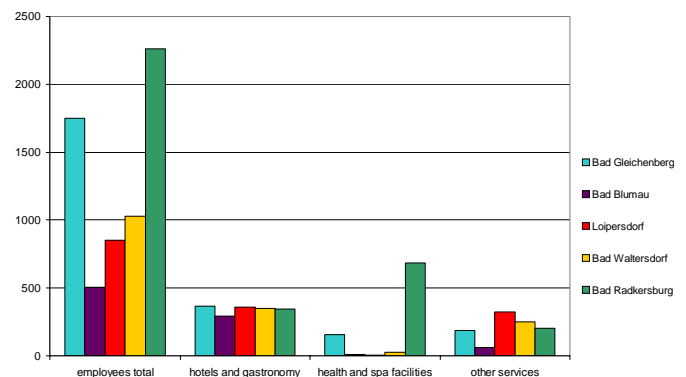


Figure 23: Employees in thermal spas, 2001.

After a change of wellness philosophy, including the outdoor areas in the programs of health maintenance that was started in Loipersdorf by the famous Austrian Ski Jumping World Champion Baldur Preiml, regional attractions began to play a larger role. Biking, Nordic walking, fitness par courses, horseback riding and golf courses extended into the neighbouring communities and regions. There the tourist facilities were expanded and adapted to offer higher quality service and ambience.

On the other hand, European programs for rural development (LEADER, INTERREG and the Structural Funds) offered support for the farmer and SME co-operations and quality improvements.

The spas in the Styrian Volcanic region brought new jobs in the spas themselves, in the hotels and restaurants and in all health and tourism related facilities: an additional 1.600 jobs in hotels and gastronomy plus 800 additional jobs in health and spa facilities.

The annual income of the Spa Loipersdorf, without hotels, is around 16 Mio Euro. The profit is continuously invested in new attractions and extensions.

These figures represent only a small section of the additional regional income, which is now generated by new services in tourism, new agricultural products of quality and new chances for entrepreneurs and farmers.

The new brand name of the region, the "Styrian Volcanic Region," has opened opportunities to many producers to develop high-quality products for the Culinary Region of Austria.

#### 5. REGIONAL DEVELOPMENT PROJECTS

##### 5.1 Styrian Volcanic Park

The Geology Park of the "Styrian Volcanic Region," as a brand name for the region, explains to the local population and to the guests of the thermal spas the origins of the cultural landscape with its volcanic activities two and 12 million years ago. Many castles in the region are built on volcanic rocks and the basalt and trass quarries illustrate the geologic history of the region.



Figure 24: Logo of the “Styrian Volcanic Region.”

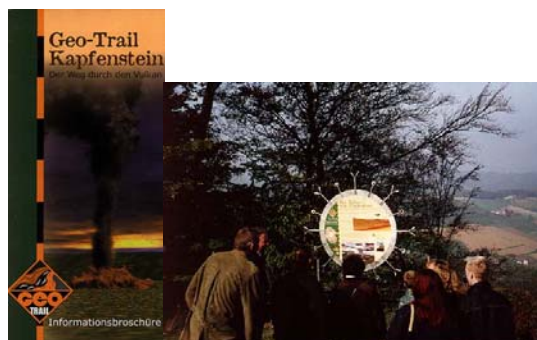


Figure 25: Geotrail Kapfenstein.

Geotrails and mineral showrooms explain in an innovative manner the geologic phenomena and their impacts on the landscape, agricultural traditions and products. One trail crosses the border of Slovenia and goes to the castle of Grad.

## 5.2 Eurovillages

The traditional farmhouses are important elements of regional identity and cultural landscape. The development of health tourism gives opportunities to farmers to convert old unused houses into tourist accommodations of a higher quality. The European Initiative LEADER supported this development with funds for consulting, restoring and marketing at an international level with other European regions under the name of *eurovillages*. Agro-tourism provides mainly accommodations for families with children and couples needing more privacy.



Figure 26: Logo “Eurovillages.”



Figure 27: Revitalized traditional farmhouse.

Eurovillages provide an excellent opportunity to participate in regional economic development.

## 5.3 Innovations Centre Auersbach

The Innovations Centre Auersbach offers the farmers and SME's of the region the opportunity to develop, produce, design packaging and market new high-end agricultural products under the quality brand name “Styrian Volcanic Region.” Products such as “Volcanic ham,” “Lava beer,” “Caldera cider” and “Eruption wine” have been developed, tested and produced in the Innovation Centre. The small farms and SME's can compete in the European market only by producing and marketing high-quality products united under a common regional brand name based on the unique geology of the region.



Figure 28: Innovation Centre Auersbach.



Figure 29: “Vulcano” package.



Figure 30: Logo “Lava Bräu.”

## 5.4 Village Revitalisation Programme

If you have a high-quality product, then you have to present it in a high-quality envelope. If you want to present a region with quality services and products, you have to revitalize the villages as platforms for representation. The designs of squares, courtyards, roads and the landscaping of public places in villages impact the image and the identity of a community. Also, reference has been given here to the geology by using local stones, like basalt and trass, to beautify the villages.



**Figure 31: Square in Edelsbach, Styrian Volcanic Region.**

## **6. FUTURE DEVELOPMENTS**

The past has proven that an increase in quality standards in the tourist infrastructure and in the accommodations provided will be successful if the changes respond to an overall trend on the demand side. This development has not been planned in an overall master plan for the optimal use of the geothermal resources. Because of the great interest of regions and communities to promote further spas in Styria to be supported by the Styrian Government, the Economic

Ministry decided to develop a master plan for the optimal use of geothermal resources in Styria. This master plan includes only the balneological use of these resources.

A comprehensive master plan has to consider the geothermal resources, the costs to use these resources, all the possible energy, balneological and agricultural uses—and above all the market demands with the available income for the use of services and products.

## **REFERENCES**

- Bergmann, B.: Die Oststeiermark Naturund Kulturland, Steirische Verlagsgesellschaft, Graz, (1981).
- Edelsbacher, F., and Koch, W.: Vulkanland – dorfgrenzen-grenzenlos, Styria, Graz Wien Koln, (2001).
- Krenn, P.: Die Oststeiermark, Verlag St. Peter Salzburg, Salzburg, (1981).
- Senft, W. and H.: Apfeland – Thermenland Erlebte Oststeiermark, Leopold Stocker Verlag Graz, (1990).

[www.eurovillages.org](http://www.eurovillages.org)

[www.vulkanland.at](http://www.vulkanland.at)