

Târgu Ocna Salt Mine: Premises Harnessing the Balneal and Cultural-Industrial Potential

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Abstract

In time, the salt mine has played an essential part in the birth and development of the town of Târgu Ocna, initially by drilling and selling the salt resources, and later by harnessing the tourist potential of the balneal resources as well. In the past few years a new trend has been emerging, that of industrial tourism, with the inclusion in the tourist circuit of the salt mine as an economic asset, with a view to highlighting the local mining culture.

Key words: *salt mine, balneal tourism, industrial tourism, cultural landscape, mining*

Jel Classification: *L 72, O10, O14*

Introduction

The main purpose of the article is to make a detailed analysis of the balneal and cultural-industrial potential of Târgu Ocna salt mine, and the best means of exploiting it, keeping track of the latest international trends; the article also analyzes the influence the salt mine had on the spatial and economic development of the town of Târgu Ocna (since its foundation through the present), and outlooks for further development.

Several studies have been drawn which highlighted the particular curative features of the salt mine micro-climate, thus bringing about its recognition and use in balneal treatment. The first observations were made in the 19th century, and highlighted the absence of any chronic bronchitis and asthma among the miners of the Wieliczka salt mines, and the rapid curing of new employees who suffered from the respective diseases, the improvement and even disappearance of asthma bouts in the case of asthma patients who took refuge into the Kluttert salt cave, used as a bomb shelter during the two World Wars. Salt mine micro-climate therapy has a long tradition in Central and Eastern Europe, as well as Turkey, and is generically known as speleotherapy¹. In Romania, the salt mines included in the curative circuit are those in Slănic

¹ Iuliana Armaș et al., *Saline integrate circuitului turistic: Praid, Târgu Ocna, Slănic Prahova, Cacica*, vol. I, Editura Cartea Universitară, București, 2004, p. 8.

Prahova, Târgu Ocna, Praid, Turda; research is being done for the inclusion of others, such as Cacica.²

Interest in industrial tourism, both scientifically and in terms of the attraction it exerts on tourists, has increased worldwide, a fact confirmed by the multitude of projects to refurbish industrial sites for tourist purposes, and the rise in tourist flow towards economic assets included in the tourist circuit. In the Anglo-Saxon view, industrial tourism is defined as a form of tourism “encompassing premises where economic non-tourist operations unfold, open to the public, where economic assets thus become tourist attractions for a certain category of visitors”.³ In specialized materials in Italy, industrial tourism consists in guided tours of industrial production facilities, and closed-down industrial economic facilities.⁴

Assessing industrial heritage from the perspective of its age, some authors consider industrial tourism as a special form of archaeological tourism⁵. However, it is generally perceived as part of cultural tourism because of its many sides: historical value (some types of industrial work go back to the prehistoric age); social value, highlighted by the importance of the workforce, which practically exerted an anthropogenic effect on the economic assets; scientific and technological value, reflected by the level of the equipment used in the industry.⁶

In the 1990s, industrial archaeology assets came to be regarded at their real cultural value, and some of them were included on the list of world cultural monuments. In Romania, steps were taken to comply with international legislation on classification and protection of the industrial heritage as an integrated part of cultural heritage. According to the Law on the legal status of the technical and industrial heritage 6/2008, it is defined as “the whole of assets – mobile, immobile and parts of them – that offer significant testimony of technical and productive activities that formed the basis of human society’s socio-economic development, from the earliest pre-industrial forms to the present”. In the past few years, the development of industrial tourism also saw a diversification of its forms; in addition to industrial assets, facilities part of other fields of trade were also integrated (company headquarters, food production facilities, vineyards). The most attractive industrial assets are quarries and mines, whose variety is determined by the type of mineral resources exploited, mine salts included.⁷

The Geographical and Economic Evolution of the Town of Târgu-Ocna

Târgu Ocna salt mine is located inside the limits of the town with the same name, on the middle Trotuș river, at the confluence with the Vâlcica and Slânic rivers, in the south-west of Bacău county.

The presence of salt played a vital part in the birth and development of the current Târgu Ocna town; the earliest written record of salt exploitation in the area is a royal property document since 1380, which mentioned the payment of the amount of 2000 pounds of salt for the

² *ibidem*

³ Ann Frew Elspeth, *Industrial tourism: a conceptual and empirical analysis*, University of Victoria Press, Wellington, 2000, p. 36

⁴ Corti Bruno, *Archeologia industriale*, Puntografico Spa, Brescia, 1991, p. 22

⁵ Piero Innocenti, *Geografia del turismo*, Terza edizione, Carocci Editore, Roma, 2007, p. 40

⁶ Comitetul Internațional pentru Conservarea Patrimoniului Industrial și consultantul de specialitate ICOMOS-Consiliul Internațional pentru Monumente și Situri, *Carta Patrimoniului Industrial*, în al XII-lea Congres Internațional al TICCIH, Moscova, 2003, available at http://www.mnactec.cat/ticcih/pdf/TICCIH_Charter_Romanian.pdf (accessed la 03 june 2009)

⁷ Arwel Edwards, Joan Carles Llundés i Coit, „Mines and quarries: industrial heritage tourism”, *Annals of Tourism Researches*, 23 (2), 1996, pp. 341-363.

construction of a stone bridge in Gârbovana.⁸ Dimitrie Cantemir, in his work "Descrierea Moldovei" mentions the rich salt mines in Târgu Ocna.

The first settlements located on the town's premises were first mentioned in documents on March 15, 1410, when Alexandru cel Bun confirmed the village of Stoenеști (later to change its name in Ocna) on behalf of a family of Transylvanian origin; the village of Tisești was mentioned in 1448, during the reign of Petru II⁹. The foundation of those villages was due to the discovery of salt resources along the Vâlcica stream and in Gura Slănicului; income earned from selling the salt, both locally and abroad (Poland, Ukraine, Turkey, Russia), and the presence of important trade routes (the Brașovului route, the Ghimeș route and the salt route), contributed to the development of the core settlement (the Ocna village) and its gradual expansion, which led to changing its status from a village into a town in 1846.

In addition to the existing salt resources, the presence of mineral springs, the mild climate and the picturesque natural landscape brought about granting the status of spa to the town in 1894. The mineral water springs are located in the "Măgura" park (former Nastasache); there is also the saltwater spring in the Gălean borough¹⁰. Târgu Ocna spa developed during 1925–1940, thanks to the construction of a complex of baths and works on the springs in the town park, flanked by fancy villas; tourists were accommodated at the hotels in town – the Regal and the Park.¹¹

Târgu Ocna spa had 7 springs and a pavilion with 14 hot-water bathing tubs, only open in the summertime; as far as the tourist inflow is concerned, "activity is intense in Târgu Ocna, where the spa establishment entered service in 1936, with an underground sanitarium inside the salt mine added later on ... it can seat 360, and is visited by 800 people a day".¹²

The town suffered because of bombing during World War II, and several establishments were destroyed; later on, the town underwent rapid industrial development, which diminished tourist activities close to zero.

In 1974 the spa (underground sanitarium) inside the Pilot Mine was rebuilt; in 2005 it was relocated to new premises; in 1988, "Măgura" hotel complex entered service. "In the 1970s a swimming pool was built on the left shore of the Slănic River, and in the 1980s a saltwater swimming pool close to the salt mine. Both of them have been closed down in the meantime, the former because of landslides in that area, the latter because of decisions made by the salt mine's management". The suffusion processes due to the existence of saltwater drills led to the emergence of the so-called 'Bottomless lake' or "Burlacu pit" in the eastern part of the Măgura park, in 1986¹³.

Thanks to the salt mine's curative properties but also to the mineral water springs in Târgu Ocna, the town was declared in 2002 a spa of national importance.

Tourist Offer

The salt mine's offer for tourists is a wide one; it allows for two forms of tourism: balneal tourism (harnessing the curative properties of the salt mine microclimate and of the mineral springs) and industrial tourism (the salt mine is a tourist attraction as a mining exploitation

⁸ Constantin Broșteanu, *apud* C. Stoica, 2003, p.20.

⁹ Ioan Șandru, Toma Constantin, Nicu Aur, *Orașele Trotușene- Studiu de geografie umană*, Edit. Bacău, Bacău, 1989, p. 99.

¹⁰ Corneliu Stoica, *Istoria ilustrată a orașului Târgu Ocna din cele mai vechi timpuri până în prezent*, Editura Aristarc, Onești, 2003, p. 10

¹¹ *ibidem*, p. 90

¹² Ioan Șandru, Toma Constantin, Nicu Aur, *op. cit.*, p. 179

¹³ Corneliu Stoica, *op. cit.*, p. 13

facility); it attracts visitors whose main interest is to get acquainted with the mining culture; they can visit premises of cultural and historical interest such as St. Varvara church and the Salt Museum.

Natural Tourist Resources

The salt mine is located inside the Vâlcele-Slatinele salt dome and due to its *salt mine microclimate* acts as an important natural factor in treating respiratory diseases.

Studies of the Trotuş salt mine microclimate highlighted that it is relatively constant, with specific features expressed in terms of temperatures ranging from 12.8° - 12.9° C during fall and winter to 13.2° - 13.4° C in summer; relative air moisture values ranging from 74 - 75% in winter to 80-82% in summer; an extremely low fluctuation of the amount of oxygen, as well as the saline aerosol content (130 - 170 particles/cube centimeter); atmospheric pressure stands at 70 - 73 cm Hg; the total absence of allergens (moulds and pathogen germs); the air drafts have very low speeds, regularly all but imperceptible. Chemical measurements indicated the absence of air emissions and the presence of Na, Ca, Mg ions, and aerial microflora measurements indicated a high degree of air purity, in both summer and winter. Using the study's results, one may consider that the salt mine's bioclimate is characterized by a low-intensity cold discomfort (compensated by exercise and proper cloth wear), with a moderate hypotonic sin stress index and a balanced lung stress index. In conclusion, the salt mine bioclimate has a sedative nature, with very low stress index values, slightly cool in terms of temperature and well-balanced in terms of humidity, with curative properties in the case of respiratory system diseases, pollution-induced diseases, neuroses or overwork syndrome.¹⁴

Table 1. The curative properties of the mineral springs

Number	Spring	Type of treatment	Curative indications
1.	Spring no. 1	internal use	<ul style="list-style-type: none"> ○ regular chronic enterocolitisbile tonus and mobility afflictions; ○ post-surgery bileduct afflictions ○ atonal constipation
2.	Spring no. 2 Spring no. 3 Spring no. 4 Spring no. 5 Spring no. 6 Spring no. 7	external use	<ul style="list-style-type: none"> ○ degenerative rheumatic afflictions; ○ abarticular rheumatic afflictions; ○ post-traumatic afflictions of muscles and joints; ○ chronic gynecological afflictions; ○ afflictions of the respiratory ducts (as aerosols)

Source: the Târgu Ocna Town Hall

Treatment in the salt mine is accompanied by the nearby *mineral spring water cure*. Putting to best use the curative potential of the salt mine and the mineral water springs allowed for their local use for curative use as early as the 19th century.

Măgura park has seven mineral-water springs, arranged in a line; the spring water has been tapped and used for more than 100 years (since 1888). Analyses by the National Institute for Recuperation, Physical Medicine and Balneoclimatology - INRMFB – indicated that the water content ranges from 4.139 to 12.793 grams per liter and is of interest for internal and external use, as presented in Table 1.

¹⁴ Ghid Salină, 2008

Anthropogenic Tourist Resources

The church built inside the salt dome – inside level 9 – is a tourist attraction of outstanding interest. It is *the first underground Orthodox church in Europe*; it is dedicated to St. Varvara, miners' protectress. It was built at the initiative of the mine employees, during April 3-December 3, 1992. A set of 24 icons is located on their stand in front of the altar, with the icons of St. Varvara and St. Parascheva (the patron saint of Moldavia) located on either sides of the altar. The chandelier providing lighting to the church, the iconostasis, the bishop's throne and the fixtures are carved in salt, skillfully sculpted by miners and varnished with a special substance that gives them an wood-like look.

The "Salt museum" was set up inside the salt mine, where information is available on the origin and evolution of salt exploitation and processing and its curative properties; ancient artifacts are also displayed. The museum allows for a veridical distribution of information on the industrial heritage of the salt mine and at the same time it is a very good opportunity of direct acquaintance and involvement in the mining culture for tourists. In addition to historical, archeological and other sorts of documents (administrative archives, photographs, etc.), there are collections of mineral samples and documents concerning the salt mine's geological structure. The photographs highlight the variety of mining equipment used in drilling salt, the fruit of human ingenuity and intelligence.

The Material Premises of Tourism

The Spa

Until July 9, 2005, tourism grounds were furbished at a depth of 130 meters in the Pilot mine as an underground sanitarium; since July 11, 2005, the salt mine's premises furbished for treatment were concentrated on level 9 of the Troțuș mine, at the "core of the salt layer", at a depth of 240 meters, on a 13,000 square meters surface.¹⁵ The core services consist in transport inside the salt mine, using the mine's coaches, on a 3.2-km long spiraling slope, and natural saline aerosol treatment.

The premises furbished on the level 9 of the Troțuș mine offer the best conditions for relaxation, treatment of respiratory afflictions, exercise on the mini-football, basketball, tennis, ping-pong grounds, recollection and introspection inside the church. There are also playgrounds for children, furbished with swings, see-saws, inflatable toboggans. Activities include rest, general and respiratory medical gymnastics, games and sports (chess, tennis, basketball), walks, moderate jogging and sanitary education programs.

Tourists are presented with the services of a medic and a sports trainer, as well as a medical practice with the specialized equipment for emergency interventions.¹⁶

The Structure of Tourist Accommodation Facilities

The high number of tourists arriving for curative purposes starting in the latter half of the 20th century has brought about the construction of accommodation facilities in the town, which also offer spa treatment services.

At the moment, there are four tourist accommodation facilities in the town of Târgu Ocna (Table 2) with a total of 338 seats between them, or 13.48% of the tourist accommodation capacity of the county. In addition to these purpose-built tourist accommodation facilities, another 50 can be accommodated at "Măgura" monastery complex.

¹⁵ *ibidem*

¹⁶ *ibidem*

Table 2. Tourist accommodation capacity in the Târgu Ocna spa (2009)

Accommodation facility	Capacity (seats)
Hotel Măgura	256
Select hostel	20
Casa Creangă hostel	32
Poieni hostel	30
Total	338

Source: the Tg. Ocna Town Hall

Măgura Balneal Complex entered service in 1988; located around 2 km away from the salt mine, it can accommodate 230 and offers treatment and meals to tourists. Due to the short distance between the complex and the salt mine there is an agreement signed, that the majority of the patients coming for the natural saline aerosols should be accommodated at this hotel, where they also benefit from treatment services, included in the tourist offer.

The Măgura hotel also has a Human health recuperation–rehabilitation facility, with a capacity of 100 seats, which offers balneophysiotherapy medical services to outpatients and recuperation medical services to patients. The treatment facility is equipped with modern medical equipment: 9 devices for aerosol therapy and ultrasound therapy, electrotherapy, diathermy – shortwave, magnetotherapy – Magnetodiaflux, phototherapy – UV, thermotherapy – paraffin, hydrotherapy – salted baths, bubble baths, galvanic baths, laser therapy, massage, CFM and fitness.

The hotel has nation-wide contracts signed with the National Pension House and the National Health Insurance House; tourists can buy treatment tickets at affordable prices. The set of tourist services covers 18 days and include both aerosol treatment inside the salt mine (hours a day), and procedures inside the hotel's treatment facility, electrotherapy, etc. The very first thing, however, is the patient's undergoing a clinical examination by the specialist medic of the facility, who prescribes the treatment and the program to follow.

Via the National Pension House, the tourist will pay 70% of the pension and has included in the set of services 2 procedures, 4 hours of salt mine treatment and other types of treatment inside Măgura complex; tourists will only further pay for transport to the salt mine. Tickets from the National Health Insurance House do not include any procedures, and the ticket cost is 70% covered by the institution, and 30% by the patient. There are also other services available on demand, not covered by the Health Insurance House, such as injection treatments, obesity treatment, tropostatic syndrome treatment and fitness. Until late 2008 the treatment period was March-December; starting 2009 it has changed into April-October. By contract, Măgura complex has 93 seats booked per each set of tourists. Currently, the complex is staffed by 83 employees per unit, most of them Târgu Ocna town locals.

Characteristic Features of the Industrial Heritage

The development of industrial tourism in the town of Târgu Ocna is recent, and involves visiting level 9 of the salt mine, which is also used as support premises for balneal treatment. At the moment, the respective level is no longer used for industrial operations, as salt resources have run out. In time, visiting the salt mine as a premise of mining operations brought about the refurbishing of cultural assets inside (the Salt Museum and St. Varvara church) which enhanced the salt mine's attractiveness. For groups of visitors, there are also guided tours available on demand.

The importance of industrial tourism for the Târgu Ocna salt mine is reflected by the harnessing of the industrial cultural heritage generated by salt exploitation, on a large scale. Vâlcele salt dome covers around 1 km north-south and around 600 meters east-west; it is 350 meters in the

central section. Salt reserves stand for around 188 million tons, with content standing for 97.89% NaCl.¹⁷ The variety of mineral resources (geological surveys identified rock salt and oil resources) have brought about the creation and use of varied means of drilling, depending on the type of mineral resource. In addition to the underground salt mine exploitation in Târgu Ocna, Fețele Târgului, other resources drilled in the area include Gura Slănic rock salt resources, as well as oil drilled by extraction rigs.¹⁸

Industrial heritage assets consist, on the one hand, in the mine-drilling equipment and the raw material processing installations, and on the other hand in the mine shaft exits, the structure of the buildings part of the mine and the salt and derivatives' shipping system.

Putting to best tourist use the industrial heritage is meant to highlight the level of the technology used to drill salt, typical – in terms of its complexity and singularity – of the progress of civilization in the respective time period. Advanced technological equipment was used in Târgu Ocna due to the outstanding contribution of engineer Anghel Saligny. He designed and built the first funicular railway in Romania, called the "Teledinamicul de la Târgu Ocna", an outstanding achievement. "Teledinamicul" or "the American" – as the locals called it – could carry around 10 wagonloads of salt a day, a sizeable amount for the time¹⁹. The salt was carried at a high altitude, over the top of a hill, as the funicular had been designed bearing in mind the features of the landscape in the area (mainly hilly terrain). The funicular operated for 11 years (1885 - 1896), and was then replaced by an industrial railway that ensured the transport of salt from Târgu Ocna salt mine warehouses to the Salina Railway Station. In time, the latest in transportation technology was used at Târgu Ocna mine: on September 28, 1884, "Salt Rail" was inaugurated, Adjud - Târgu Ocna railway, especially designed for commodity transport, built by the Romanian state; its priority was shipping salt, which at that time earned a significant contribution to the national budget. In the fall of 1896 the rail was extended from Tg. Ocna – Salina Station to Târgu Ocna salt mine warehouses, where salt was directly loaded onto cars, a solution advanced by Anghel Saligny to link up Tg. Ocna railway station with Tg. Ocna salt mine. In 1891, vertical transport of the salt and miners into the core of the salt dome was replaced with transport on the horizontal, with the drilling of the G401 side shaft, which allowed access to the old mines; this also saw the relocation of the mine buildings to their current premises.

Industrial heritage assets of outstanding value include the salt-processing installation, equipped with modern machines for the mincing, treatment and packaging of salt, which results in high-quality products, acknowledged on the domestic and foreign markets (rock salt chunks, industrial rock salt, iodized table salt, fine-ground regular table rock salt, fine-ground iodized table rock salt, re-crystallized iodized table salt, caked iodized, regular and pre-prepared salt for livestock breeding, sulfur-iodized bath salt, salt tablets for water softening, salt solutions for the chemical industry).

The importance of industrial heritage elements of Târgu Ocna mine is also the result of its considerable age, as mining operations have been under way since 1380. These features are testimonials of traditional industrial activity. One can identify two categories of industrial heritage elements: the old mines' facilities (the drilling shaft towers and their support structure, and the mineral-exploitation premises) and civil facilities (bureaus, lockers, mess hall, etc.). These elements are "living proof" of what the mining industry meant for the areas where it has developed. Other industrial cultural heritage assets include the industrial machines, be they meant for mineral resource extraction, or for its shipping. As regards out-of-service mines where industrial machines were left on the premises, they are to be included in the *archeo-*

¹⁷ Vasile Meruțiu, *Contribuțiune la studiul masivelor de sare din România*, Stabilimentul de arte grafice Albert Baer, București; 1912, p. 128.

¹⁸ Corneliu Stoica, *op. cit.*, p. 10

¹⁹ *ibidem.*, p. 60

industrial structures category. If the industrial equipment is absent, they are included in the category of *structures with an evocative value* (e. g. the "Teledinamicul" funicular). In case there still are functional mines where the industrial equipment is serviceable, they will be labeled *mineralurgic installations/equipment* (the salt derivatives preparation equipment, the industrial railway linking the Târgu Ocna salt mine and the Salina CFR Station).

In time, salt drilling technique has evolved. The oldest method was a rudimentary one: *drilling of bell- (cone-) shaped mines*, 35 to 85 meter large at the base and 30 to 61 meter high; it used to be practiced in thin-soil areas, up to 1870. The name of this type of exploitation comes from the cone shape of the excavation dug in order to drill salt; the result was the so-called "salt chambers". Digging started from the surface, with a relatively narrow perpendicular shaft, which reached the salt dome; the area of excavation was then widened; its shape was circular, with an arched roof to prevent a collapse. Salt was dug out from the dome in blocks, using hammers and chisels. The blocks were then cut into cubes, using pickaxes²⁰. Workers in the mine included both free employees and jail convicts, sentenced to forced labor for serious crimes. Salt was shipped to consumers in oxcarts.

More efficient methods to drill salt were later developed, with machine-drilling introduced, for instance in the case of *trapeze-shaped chamber exploitation*, used during 1870-1968 in Moldova Veche (90 meter depth) and Moldova Nouă (60 meter depth) mines. Salt was drilled downwards, in four large trapezoidal chambers, located around a central shaft; it was then loaded into wagons; salt and miners were transported in a vertical elevator down the extraction shaft.²¹

The evolution of mining technology would ease salt exploitation by using the *small chambers and square pillars method*, used at the Pilot mine, as an experimental premiere in Romania, on two mine levels during 1967- 1970.

Trotuș mine opened on August 6, 1970; salt exploitation used a multi-level, downwards-bound system, using the *small chambers and square pillars method*. The resources of levels 1 through 9 have been drilled out, and exploitation is now under way on levels 10 and 11. Salt is drilled out of the dome using techniques similar to those used worldwide²². Coal cutters are used on the bottom of the chambers to carve 3-meter-deep furrows; each chamber yields 560 tons of brute salt. Excavation and transport means (tip trucks and conveyor belts) are used, and salt is then shipped to end users by means of auto and rail vehicles²³.

The cultural landscape of the town of Târgu Ocna is essentially modeled by the well-preserved industrial landscape which features important evidence as to the history of industrial activities going back more than 600 years. The industrial landscape is characterized by the size of the natural features (the lie and size of the salt dome), with the addition of anthropogenic features, the result of mining operations (mine shaft exits, salt lakes, the narrow-gauge industrial railway). The importance of cultural landscapes consists in the fact that they often reflect specific techniques of harnessing natural resources, depending on the characteristic features and the limitations of the environment²⁴.

²⁰ Floru Dianu, *Salinele române. Studiu tehnic și economic*, Tipografia Curții Regale, București, p. 49, 1897

²¹ Ghid Salină, 2008

²² *ibidem*

²³ Societatea Națională a Sării S.A., Sucursala Salina Târgu Ocna, disponibil la <http://www.salina.ro>, (accesat la 12 Mai 2009).

²⁴ United Nations Educational, Scientific and Cultural Organisation, World Heritage Center-96/Conf. 201/INF, *Convenția Patrimoniului Mondial* paragraf 39, Paris, 22 October 1996, available at http://whc.unesco.org/download.cfm?id_document, (accessed la 10 June 2009), pp. 33-34.

Mining has contributed to altering the natural look of the original landscape, but at the same time it brought about modern infrastructure elements, the result of superior land management, which left an imprint on the evolution of the old mining settlement into town.

Analysis of Tourist Traffic at Târgu Ocna Salt Mine

The salt mine is visited every day by two categories of tourists: people coming for their treatment and visitors, mainly driven by the desire to visit the salt mine. In 2008, the total number of tourists topped 100,000 people (Table 3).

Table 3. Salt mine tourist chart (2008)

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Total	1014	2292	3320	7139	10449	14491	16057	27903	10291	7830	5746	1535
Visitors (persons)	1014	2292	3227	5915	9224	13358	14406	25818	8386	6036	4232	1158
Patients (persons)	0	0	93	1224	1225	1133	1651	2085	1905	1794	1514	377
Visitors (%)	100	100,0	97,2	82,9	88,3	92,2	89,7	92,5	81,5	77,1	73,7	75,4
Patients (%)	0	0	2,8	17,1	11,7	7,8	10,3	7,5	18,5	22,9	26,3	24,6

Source: Târgu Ocna salt mine

One can notice visitors make up for the majority in numbers throughout the year; they make up for 100% of the total in January and February because treatment services are suspended at that time of the year. One can also notice that during May-September, the salt mine was visited by more than half (73.3%) of the total number of visitors in 2008.

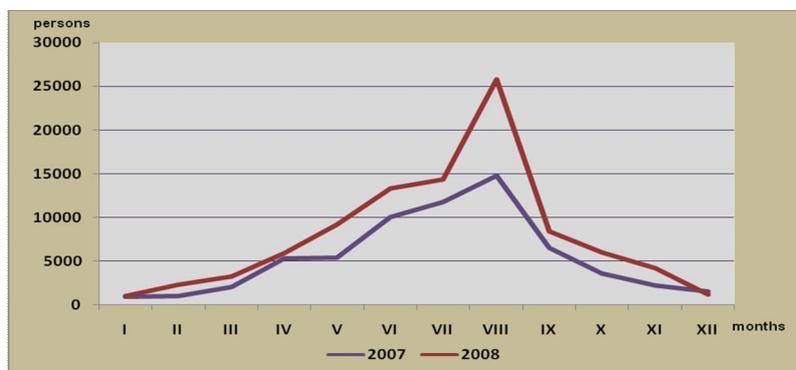


Fig. 1. The evolution of visitor numbers 2008/2007

Source: Târgu Ocna salt mine

The high ratio of visitors during the latter half of the year is accounted for by its overlapping with summer. Everyday chores and stressful conditions in the workplace make weekends out a must for recuperation, rest and relaxation, which is even more visible during summer months. The peak months as regards the number of visitors are July and August for adults (matching the regular holiday times) and June, for children (when schools tend to organize numerous field trips).

Patients feature higher ratios in the latter half of the year, especially September through December. A comparative analysis of 2008 against the previous year highlights a 30,000 rise in the total number of tourists, which proves high interest in the services rendered by the unit.

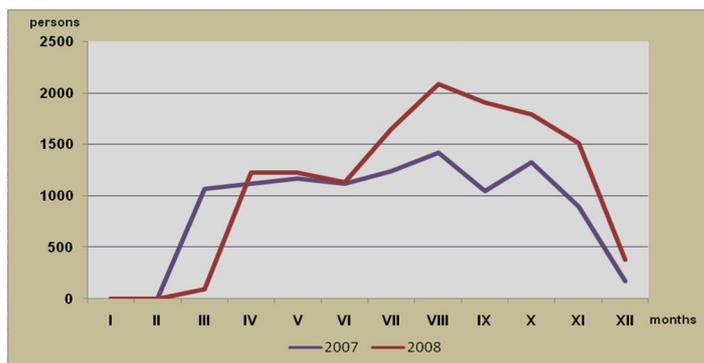


Fig. 2. The evolution of patient numbers 2008/2007

Source: Târgu Ocna salt mine

The highest rise is noticed in the category of visitors (88.4%, or more than 10,000 people in August 2008), which indicates the tourists' high interest in the mine salt as a tourist attraction.

As far as patient numbers are concerned, one can notice an increase of around 2,400 as compared to the previous year, much lower than the rise in visitor numbers.

Outlooks of Tourism Playing a Greater Part in Local Economy

Tourism development has allowed local economy to diversify; tourism contributes 13% to the local turnover, via the 15 establishments that directly or indirectly supply tourist activities: four accommodation units, a balneal treatment center, tourism agencies and restaurants. The proper course of tourist activity is especially grounded in the services sector. One can estimate that trade, with its 22% contribution, added to tourism, comes close to the contribution of the industrial sector, which makes up for the bulk of the local economy's turnover (49%).

One can notice that the tertiary sector's weight is significant and a rise in the importance of its contribution to the town economy is to be expected, due to the increased interest in the resort's tourist development and promotion, as highlighted by the drafting and implementing of development projects meant to rehabilitate and modernize the resort's tourist infrastructure; the projects were effectively launched on March 8, 2007. Project funding was secured by Târgu-Ocna Town Hall. The project will comprise several steps meant to enlarge the resort's tourist premises²⁵:

- a spa / balneal treatment center, covering 1,019 m²; it will comprise a treatment area, two outdoors swimming pools – saltwater and freshwater, a social section and a maintenance section;
- a tourist information center;
- ensuring the environmental protection and the technical conditions for the exploitation, storage and distribution for the seven mineral water springs;
- erecting and expanding infrastructure elements and the utilities typical for leisure-area activities.

Globally, cultural and industrial tourism register a significant economic growth. Industrial tourism favors the optimal and complex tourist exploitation of the salt mine. The tourists' interest in visiting the salt mine reflects the attraction it exerts on visitors by means of unique

²⁵ Târgu-Ocna Town Hall, *Infrastructure development with the aim of enhancing and advancing the tourism potential of national resort Târgu Ocna, county Bacău* (Development and modernization of „Măgura” Park area, Târgu Ocna), 2005, Târgu Ocna, p.21.

features (particular working conditions, equipment and technology) and allows one to forecast that tourist traffic levels will remain high. The presence of industrial assets may generate other forms of tourism as well: educational tourism - setting up an experimental mining station that could be used for didactic purposes to the benefit of technical institutions, universities, mining training schools abroad, workshops on preserving and protecting industrial assets. Developing the educational and scientific sides of industrial tourism on the salt mine premises would attract more visitors, i.e. scientists in various fields.

Resizing industrial tourism might be handled by refurbishing the old salt exploitations on Fețele Dealului, with a view to including those salt caves in the tourist circuit as well.

In the future, it will be necessary to take steps to protect and preserve the cultural landscape, considering the variety of its components, from natural elements and architectural-urban complexes to archeological and industrial assets. This step is meant to enhance the tourists' interest in the cultural landscape in general and in the industrial landscape in particular.

A management strategy should be designed and implemented, that would lay the foundations of sustained development, ensuring a balance between industrial and tourist activities (salt drilling has to comply with technical norms so that irrational exploitation should not lead, in time, to the collapse of the dome, which would also compromise tourist activities).

Protecting industrial assets stands out as a high-priority action due to their cultural importance; the absence of preservation efforts could lead to the assets suffering material and historical damages and/or a depreciation in authenticity.

Putting to best use the salt mine as a premises for mining operations, in terms of use, can be achieved by distributing informative materials, such as books and / or tourist booklets that would highlight the unusual sides of local history and mining culture.

A marketing strategy should be created, meant to attract diverse categories of tourists, by identifying tourist target-groups.

Conclusions

Analyzing the economy of the town of Târgu Ocna allows highlighting that on the one hand the town has preserved its traditional economic operations, and on the other hand it has a mixed economic profile, with the mining industry and tourism having a significant contribution to its development.

Mining activity and balneal tourism are the oldest economic activities in the town; they support local economy by absorbing local population work offer and by generating income.

Tourist exploitation of industrial heritage assets, although recent, allows a resize of the economic system and at the same time offers an opportunity for sustained development, as preservation of the industrial assets allows new functions for mine levels where salt has partially been drilled out, which can be refurbished for tourist purposes.

Steps to promote the salt mine's industrial cultural assets will lead to large, national and even international acknowledgement of its mining culture. This acknowledgement will contribute to strengthening the local economy and protecting and promoting its customs, as well as to micro-regional economic development. Enhancing the salt mine's tourist attractiveness can be achieved by diversifying cultural activities on the premises.

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Salina Târgu Ocna: spațiu de valorificare a potențialului balnear și cultural-industrial

Rezumat

De-a lungul timpului, salina a avut un rol primordial în apariția și dezvoltarea orașului Târgu Ocna, inițial prin extragerea și comercializarea resurselor de sare, la care s-a adăugat ulterior valorificarea turistică a resurselor balneare. În ultimii ani se conturează o nouă tendință și anume aceea a dezvoltării turismului industrial, prin includerea în circuitul turistic a salinei ca obiectiv economic, cu scopul de a pune în lumină cultura minieră locală.