

THE IMPACT OF THE INDUSTRIAL CULTURAL LANDSCAPE CONVERSION THROUGH TOURISM ON THE ENVIRONMENTAL ELEMENTS OF OCNA MUREȘ

ILEANA-CRISTINA VASILITĂ-CRĂCIUN¹

ABSTRACT. – **The Impact of the Industrial Cultural Landscape’s Conversion through Tourism on the Environmental Elements of Ocna Mureș.** The fulminant technological advance, corroborated with the increasing demand of products have favored, in the recent period, the accentuation of the various processes of environmental pollution, with particularly serious consequences on the living organisms. Thus, the European Green Pact is the instrument through which the European Union wants to establish the necessary steps to reduce air, water and soil pollution (by 2050), as the main elements of the environment affected by pollution. It is therefore recommended that the quality standards provided by the international forums be respected and that the specific legislation of all member states be aligned for a unified approach. In this regard, the implementation of the clean industrial technologies, recycling, the use of green energy in the production process, the use of natural resources in a sustainable manner or the conversion of industrial elements into tourism elements, can be viable means to achieve the goals proposed in the pact. In the context of those presented, this study seeks to argue the conversion of the industrial cultural landscape related to the exploitation and processing of local salt resources and the specific hazards, found at Ocna Mureș (Alba County), in the cultural and tourist-validated landscapes. The change of the function of the mentioned elements can favour the socio-economic revival of the area, with the observance of the new European environmental norms, in the medium and long term.

Keywords: *Ocna Mureș, salt resources, hazard, tourism, sustainable development, Industrial Cultural Landscape, conversion .*

¹ *Romanian Academy, Cluj-Napoca Branch, Geographic Research Center, Republicii Street, 9, Cluj-Napoca, Romania, ileana.vasilita@academia-cj.ro.*

1. INTRODUCTION. THE CONVERSION: INDUSTRIAL CULTURAL LANDSCAPE - TOURISM. GENERAL ASPECTS

According to the general meaning, "the cultural landscape is a physical surface with natural features and elements modified by human activity, residing in patterns, stratified arranged in the landscape, which gives the place its particular character reflecting human relations with the landscape and the attachment to it" (J. Lennon, S. Mathews, 1996, p. 3). This type of landscape reflects the general historical dynamics of the global society in general, and the local one in particular, and is "constantly changing due to the ecological processes and the social forces that act on it" (M. Jones, 1991, p. 231). In this order of ideas, Marcucci (quoted by Ileana Pătru-Stupariu, 2011, p. 103) considers that the cultural landscape "must be viewed from the perspective of temporal evolution, as it is a legacy of the past, but must also be viewed from the perspective of the future, in a bivalent relationship. On the one hand, the exact knowledge of the historical landscape conditions and of the changes occurred in time can facilitate and improve the predictions about the current and future state of the landscape and can generate scenarios for the future".

This way, we can state that the transformation of the natural landscape into a cultural one and later, the meaning of the evolution of the latter, are inscribed as a consequence of the sum of the changes introduced by man within the landscape. The number of changes and the intensity with which new anthropogenic elements were introduced in the territory, depended on natural or human factors such as: actions taken by man to meet basic needs, positive demographic evolution, technical-scientific progress, economic and political framework, etc. (Camelia-Ina Gavra, 2013, p. 137).

The various changes produced by man over time, in terms of natural components of the landscape can be grouped in various categories, depending on the type of activities carried out by it, according to Camelia-Ina Gavra (2013, p. 137). In the case of the present study, the visibly dominant category is the industrial one, the existence of salt resources in the Ocna Mureș area and their exploitation continues, imposing the appearance of various industrial elements over time and shaping a cultural landscape with specific function.

At a general level, Claudia Popescu (1990, p. 57) points out that "the industrialization manifests a multitude of trends with accentuated or slow evolution, with convergent or contradictory meanings, actually synthesizing the adaptability of the industrial system and, implicitly, the proof of its viability", but "the most important in content and significance is the trend of industrial restructuring (in this case we propose the conversion through tourism). In a systemic approach this means rearrangement and reorganization of structural elements and a redirection of the economic and social relations between them".

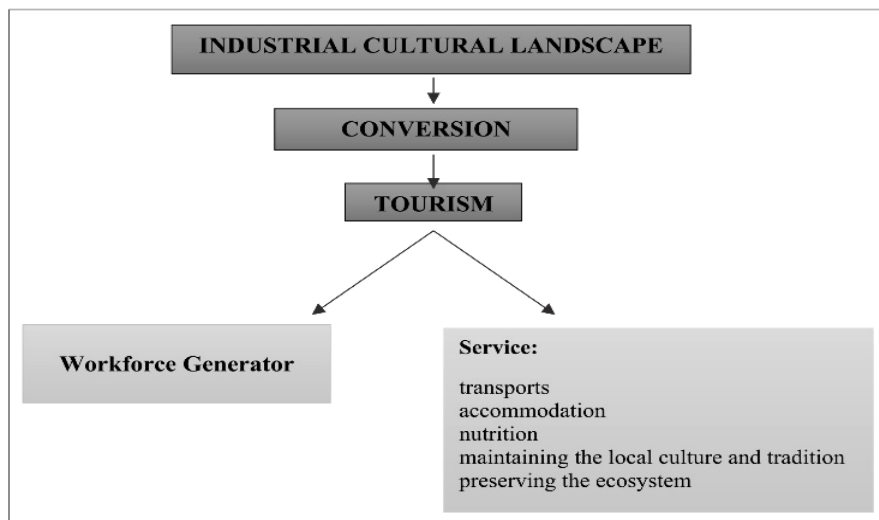


Fig. 1. The role of conversion. *Source: the author*

In this context, the conversion of the economic function, according to current trends and needs, can ensure the continuity of the existing cultural elements and the local social and economic prosperity, the opportunity to adopt the tourist function being desirable. “Thus, the phenomenon of interface and complementarity appears with mutual environmental, economic and social benefits” (P. Cocean, Nicoleta David, 2014 p. 87), regarding the conservation of the industrial cultural landscape through tourism conversion, exploitation of the local salt resource and use for tourism purposes, enrichment with new necessary cultural elements, related to transport, accommodation, public alimentation, perpetuation of local culture, ecosystem preservation, etc. (fig. 1).

2. OCNA MUREȘ. LOCATION AND PHYSICAL-GEOGRAPHICAL CHARACTERISTICS

The analysis of the topographic map reveals the location of Ocna Mureș town in a meadow hilly area in the north-eastern part of Alba County, on the left bank of the Mureș River middle course. The western limit of this particular location is determined by the Alba Iulia – Turda Corridor, the Mureș Corridor, the south-western by the Ciunga Hills (Nejoapa Hill), and the southern one by the top of Banța Hill. From an administrative point of view, the town includes, in addition to the actual urban area, the following localities: Uioara de Sus, Uioara de Jos, Cisteiu de Mureș, Micoșlaca and Războieni-Cetate.

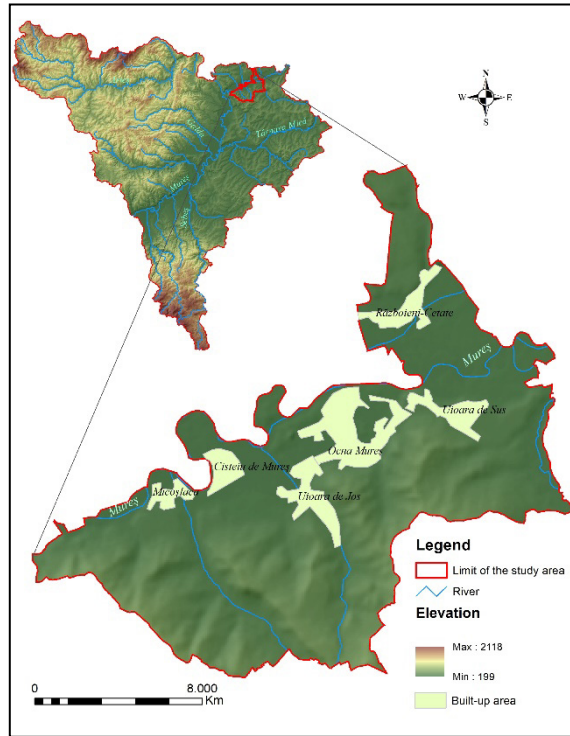


Fig. 2. Ocna Mureș City Map. *Source: the author*

The diversity of landforms noticeable in the delineated area proves to be closely related to the geographical position. The vicinity of the Transylvanian Plain and the Târnavă Plateau, along with the presence of the Mureș River require the existence of a relatively varied relief. The most visible forms are the hills and the plateau, accompanied by the plethora of the fluvial microforms, created by Mureș River.

Thus, “a hilly crown bypasses the city in a semicircular shape from South-West to North-East, highlighting the Nejoapa Peak - at the border between Ciunga and Ocna Mureș - with extensions to the Banța Hill whose summit is Gurguleu Peak (524 m, the highest altitude of the territory). The Banța Hills present on their peak the vast Larga Plateau, whose eastern edges are supported by the Șpălnaca plains. The heights of Banța and Nejoapa close a wide valley between them, which extends downwards from South to North, slipping at the foot of the forest, under the Gurguleu Peak” (N. Dobra, 1996, pp. 7-8). At the same time, the geographical positioning and the relief are factors in determining a favourable natural environment. The climate of this region is a transition

moderate continental one, under the influence of westerly winds, with the local manifestation of the foehn wind during spring, a warm wind that causes the sudden melting of the snow and sometimes flooding.

The drainage network is dominated by the Mureş River, with a meandering course, accompanied by meadows and terraces, along with other specific microforms (rings, landslides, gullies, torrents, etc.). The existing anthropogenic salt lakes (the Roman mines lake, the Iosif, Francisc, Ferdinand lakes, etc.) owe their appearance to a natural hazard. The flood of Mureş in 1913 caused the waters to overflow and flood the mines exploited since ancient times in galleries. The collapse of the salt mine ceiling thus determined the formation of the anthroposaline lakes.

Regarding the pedological layer, "on the right bank of the Mureş, as well as in the neighbouring area of Fărău, the regosols can be noticed, in the actual built-up area of the town, the clayey soils, formed by repeated overflows, are closely linked to the Mureş Corridor" (N. Dobra, 1996, p. 9). The bedrock houses considerable reserves of salt, which can be exploitable.

Also, the field research highlights the existence of various spontaneous flora and fauna, related to the altitude and landforms mentioned above. This includes blackthorn shrubs (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), rosehip (*Rosa canina*) and deciduous shrubs such as carob tree (*Ceratonia siliqua*), oak (*Quercus robur*), walnut (*Juglans regia*) at higher altitudes, and mixed with pine conifers (*Pinus sylvestris*), blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), rosehip (*Rosa canina*) and others. The studied area is, in itself, a living environment for a fauna specific to the area of meadow, steppe and forest-steppe dominated by insects, birds and related game fauna.

Summarizing, the conditions of high favourability, conferred by the natural environment and especially the existence of the salt resource, led to the early humanization of this territory and to the gradual shaping of an industrial cultural landscape through the continuous addition of specific elements. Recent economic changes that have led to the decline of the local economy can be the germ of socio-economic recovery by converting the cultural landscape mentioned into a tourism-related one.

3. THE EXPLOITATION AND PROCESSING OF THE SALT RESOURCES: DETERMINANT FACTORS OF THE CONVERSION OF THE INDUSTRIAL CULTURAL LANDSCAPE INTO TOURISM

Salt was the defining natural element that represented a factor of social development and that shaped the appearance of the area over time. Salt was exploited through various techniques until now, "the mines in this land being functional about 1200 years before our era" (according to N. Dobra, 1996, p. 55).

The long history of salt exploitation in galleries was interrupted in 1913, when the waters of the Mureș River broke the dam that protected the town and the mines. Natural hazard (flooding) has led to imminent technological hazard. The penetration of flood waters into the galleries subsequently caused the collapse of their ceiling and the formation of specific lakes (anthropogenic salt lakes) and forced the adoption in 1952, for the first time in the national salt extraction method, on the principle of wells, the cultural landscape being enriched with two new elements.



Fig. 3. The wells field and the salt lakes from Ocna Mures.

Source: the author

The man is therefore able to slow down or remove almost all the processes of degradation of the landscape and to reconstruct it, even if not in its original form, but in one that is useful and pleasant to him (D. Teaci, 1983, p. 26). The therapeutic potential of salt water did not remain untapped, the high concentration of sodium chloride mineral waters being used for cure and treatment, first in a rudimentary way, then, starting from 1910, in properly arranged baths. The progressive economic decline of the area led to the blurring of this activity, until its total extinction.

Currently, following the partnership concluded between Alba County Council and Ocna Mureş Town Hall for the future baths, the works for the realization of a tourist complex have started, which will include leisure facilities, fitness rooms, restaurant, wellness, treatment rooms, as well as spaces for sporting activities; all these having as purpose the invigoration from the tourist, balneary and, not in the least, the economic point of view of the town of Ocna Mureş, according to the urban project.

4. THE IMPACT OF THE CONVERSION WITHIN THE INDUSTRIAL CULTURAL LANDSCAPE

The conversion supposes, in this case, a natural continuation of the dynamics of the elements of the cultural landscape imposed by the perpetually natural-anthropogenic dual manifestation. In this context, the appearance of the salt lakes, as a result of the chain manifestation of a natural hazard (floods), followed by a technological one (collapse of the salt mine ceiling), may underlie local socio-economic development by converting the function of the industrial cultural landscape into a tourism-related one, using the salt resource for the same purpose. The social factor is thus decisive in assigning the function of the cultural landscape, according to the changes in the analyzed system.

We consider the conversion of the industrial cultural landscape into a tourism-related one as appropriate, in line with the current development trend of the tertiary economic sector (of services), which can be achieved in accordance with the provisions of the above-mentioned environmental pact.

The environmental impact assessment procedure is preceded by an initial project assessment carried out by public authorities for environmental protection which establishes the need to start the environmental impact assessment procedure and/or the appropriate assessment procedure, taking into account some vulnerabilities related to the instability of some areas in the immediate vicinity of the lake surfaces.

The implementation of the tourism development project described above can be an “eloquent example of how the man can transform the landscape for his own benefit, beautifying it, but also making it to produce hundredfold, in terms of value, compared to the old state of things” (D. Teaci, 1983, p. 92), thus, contributing to their own development due to the permanent ability to adapt to changes in the system.

In order to be able to highlight the implications that arise from the conversion on the environmental elements, it is necessary to expose the deficient aspects that the industrial cultural landscape currently faces. These are strictly related to the exploitation of salt, which “made the micro-relief in the exploitation area and a part of the old built-up area of the settlement from near the mines undergo great changes, there appearing numerous excavations, land fractures of the most varied shapes and dimensions” (Al. Vigh, 2011-2013, pp. 14-15). According to the same author, these forms can be classified into several types. The artificial excavations are traces of the daily exploitation of the salt in the southern part of the massif with depths of 10-15 m, where there was the so-called “Roman quarry”. Collapse basins are real craters with vertical walls with a depth between 70 and 100 m. The most recent vertical collapse took place on December 22, 2011, forming a real crater, due to the collapse of several galleries of a former salt mine flooded with water, covering an area of 8,000 m² and having a 16 m depth, which swallowed the supermarket in the area and a portion of 200 meters of road. There are also large landslides, covered with alluvial deposits, which are found in the North-East. In recent years, in this area there have been numerous land fractures in small but dense sizes, in the form of sinkholes and pits and land fractures with different depths, which generated sinkholes that appeared after the dissolution of the salt. As far as salt lakes are concerned, they cannot normally be arranged for cure and treatment due to the instability of the soil around them, implying the risk of collapse in the event of large-scale works. However, there is the possibility of using them as specific cultural elements in the local tourist ensemble.

“Tourism, seen in terms of the complexity of the factors involved, can have positive effects on the economy as a whole in two ways: it contributes to the emergence and development of new specific economic activities (leisure, craft production, etc.), and increases the volume of activity within the existing economic branches (agriculture, food industry, construction, transport, cultural services, etc.)” (Capar Roxana Aybuke, 2017, p. 27). However, the desired economic development must be correlated with the meaning of the evolution of natural and anthropogenic elements in a sustainable dynamic balance, in line with global trends in environmental protection.

The approach of the industrial cultural landscape analysis is natural to end with a brief exposition of the main elements of favourability, the disadvantages, the opportunities that may arise in this case and the threats related to them, all in a SWOT analysis (see table 1).

Table 1. SWOT Analysis

STRONG POINTS	WEAK POINTS	OPPORTUNITIES	THREATS
<p>The existence of natural resources (salt water, salt) suitable to be exploited;</p> <p>The tradition of using salt in cure and treatment;</p> <p>Easy accessibility through the connection provided by rail and road.</p>	<p>The risk of collapse and land falls of some parts of the walls or ceilings of mines;</p> <p>Lack of promotion of the local cultural landscape;</p> <p>Interruption for a relatively long period of the care treatment services provision.</p>	<p>The possibility of using the salt resource in therapeutic and prophylactic treatment;</p> <p>Attracting new investors in the area;</p> <p>The elaboration of specific strategies for the development of the existing cultural landscape;</p> <p>The development of other types of tourism with potential in the area (ecotourism);</p> <p>Promoting the local cultural landscape.</p>	<p>The poor economic development of the area;</p> <p>The lack of specialized tourism staff;</p> <p>The degradation of the industrial cultural landscape (by abandoning the component elements);</p> <p>The legal restrictions arising from the dependence on budgetary funds.</p>

Source: the author

5. CONCLUSIONS

Thus, “there are considerable arguments that the tourism conversion of the industrial cultural landscape can be a viable alternative for development. The implications on the destination area (meaning the local community and the space on which it is located) are complex. In addition to revenues that can contribute to the economic growth, one can also discuss about the substantial contribution to the preservation of traditional cultural heritage and the natural patrimony” (Dinu Mihaela, 2005, p. 169). The change of the function of the mentioned elements can also favour the socio-economic revitalization of the area, with the observance of the new European environmental norms, in the medium and long term.

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