

REPULSIVE CULTURAL LANDSCAPES AS AREAS OF RISK AND VULNERABILITY

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Abstract. Repulsive landscapes have multiplied and expanded in Romania during the transition to the free market economy due to deindustrialization and the disorganization of agriculture. Thus, the enforced industrialization policy unique to the old regime in Romania provides a variety of examples of repulsive landscapes resulting from interventions above the ecosystems' tolerance limit. The exploitation of the poor sulfur deposits in the Călimani Mountains turned out to be both an economically unprofitable action, as well as a source of massive pollution. It has generated, through the quarry in Negoiu Românesc massif and its associated waste dumps with an area of over 200 hectares, a perfect example of a repulsive landscape where the chemical pollution inside the exploitation area and the geomorphological processes affecting the dumps generate specific risks and vulnerabilities. Likewise, the gold and silver mining in Roșia Montană, copper mining in Roșia Poieni and coal mining in the Rovinari Basin created the same kind of landscape. The abandonment of mining, industrial units and agricultural facilities have led to the emergence of degraded areas, polluted or not, but which are notable for their damaged state, having negative effects both visually and functionally. The study synthesizes a series of particularities of the degraded areas, with emphasis on their aesthetic characteristics and territorial implications.

1. INTRODUCTION

Repulsive landscapes, such as brownfields or friche, are a distinct category of cultural landscapes due to the negative features they present on structural, physiognomic and functional levels (physical liability and instability, ruiniform physiognomy, lack of use values, random and unpredictable dynamics, etc.). They result either from anthropogenic abusive and unrestrained actions with an impact upon the environment, or from the abandonment of elements of the industrial, agricultural, touristic and habitational landscape. In general, most of the repulsive landscapes reach back to the decline of cultural landscapes as their conversion is delayed or lacking. The main categories of risks and vulnerabilities related to the existence of repulsive landscapes are: the chemical and radioactive pollution of the terrain on which they are located, as well as the adjacent lands; the sources of pollutants and solid particles leading to air pollution; the olfactory pollution specific to some landfills; the geomorphologic processes of mass movement (landslides, collapses), torrential processes or accelerated erosion; the contamination of surface water and groundwater alike; the profound damage to the quality of natural and cultural heritage; the lack of secure access; economic and social inefficiency; topophobia, etc.

The cutback or complete shutdown of the old industrial enterprises led to the creation of quite a number of brownfields covering large areas. In the agricultural field, the abandonment of old orchards,

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vineyards and livestock farms and the extended areas of unused land produced specific repulsive landscapes. Forest areas, due to massive deforestation, a phenomenon associated both with the increase of geomorphological risks, as well as hydrological ones (erosion, torrentiality and flooding), often display their own particular, repulsive landscapes. The abandonment and degradation of tourist accommodation facilities and other infrastructures has made sure to expand this type of cultural landscapes to several Romanian resorts.

The abundant literature dedicated to landscape analysis in the past five centuries, beginning with the first artistic introspections of Italian scholars and artists in the 16th century and up to recent years (Reynard, 2004) when the scientific aspect seems to have become the foremost concern, generally focused on the positive component of the structure and functions of the landscape.

The aesthetic value resulted from the balanced fusion, display and functioning of composing elements, has been a fertile field of study, as well as one of the fundamental criteria in the assessment of the landscape (Pellegrini, 1991).

On the other hand, in contrast to this criterion, brownfields and friche (French) represent another type of cultural landscape, which several authors associated to the negative component of the geographic landscape, while being defined using a wide variety of phrases: peripheral landscape (Wojciechowski, 1974), destructive-distressing landscape (Dincă, 2004), ordinary landscape (Schmitz, 2005) etc. (Cocean, David, 2017). Following this line of interpretation, the lack of any aesthetic features (symmetry, harmony, a well-defined form) integrates this type of landscape into what Rosenkranz (1984) defines as “the aesthetic of ugliness”.

When assessing landscapes and their aesthetic value, subjective perception is a relevant piece of information that cannot be glanced over. Psychological and affective vectors are therefore involved in the outlining of the three types of landscapes: the attractive, average and repulsive kinds (Cocean, David, 2014). Most of the touristic, natural, and cultural landscapes fall into the first category, while the agricultural and industrial landscapes are mostly included into the second category due to the lack of aesthetic features able to awaken both interest and emotional response. The third category, which also has an immediate impact upon the observer, is made up of repulsive landscapes. They tend to cover less extended areas than the ones of the previous categories, as their spatial distribution and density is correlated, up to a certain point, with a scarce territorial planning and management.

The main objective of the study is to both identify how brownfields of various types lead to the creation of unpleasant, repulsive landscapes, and what the dynamics of these areas truly is.

2. METHODOLOGY

The repulsive feature of degraded landscapes entails, in the case of each observer, an subjective, inner assessment. The negative perception of such landscapes, is mainly due to the risks and vulnerabilities they encompass, and a relevant indicator of the analyzed phenomenon. The identification of repulsive areas was done by referring to a previous research on brownfields in Romania (Filip and Cocean, 2012), and supplementing it with additional data and observations in the field. The photographic illustration of some emblematic repulsive landscapes aims at highlighting their current state of evolution.

3. CAUSES OF THE REPULSIVE ASPECT OF SOME LANDSCAPES

The intense depopulation of small and medium-sized rural localities in mountainous and sub-mountainous regions is followed by the abandonment of habitat elements (the traditional rural household alongside its annexes) entering a stage of rapid degradation resulting in unattractive

landscapes. In the case of waste dumps located in the peripheral area of many large cities (i.e. Bucharest, Cluj-Napoca) that may not be equipped or adapted to current European standards, the repulsive effect increases due to olfactory perceived emanations (Cocean, David, 2016).

Overall, cultural repulsive landscapes (due to their typological diversity – industrial, agricultural, touristic, etc.) are a relevant indicator for the degree of confusion and disorganization in the Romanian economy through its transition period. Repulsive rural and urban landscapes reflect the drifting phenomena in the Romanian rural areas due to depopulation and the chronically dysfunctional management of urban waste. Because of their structural and functional feature, they constitute areas that trigger topophobia (Neacșu, 2010).

The repulsive aspect of some landscapes is determined by a series of structural and functional features such as: ruiniform physiognomy, a degraded and distressing appearance of composing elements, a lack of functionality and a lack of economic or social values, a discrepancy from the surroundings, radioactive contamination, chemical pollution, etc. Thus, a complex type of negative perception is outlined, either for individuals, or for communities, with the causal propagation stemming from the environmental component outwards, to the economic and social component (Martinat *et al.*, 2015).

The ruiniform physiognomy (Fig. 1) is typical in particular to technological, industrial landscapes that have been abandoned for a longer period of time, where infrastructures of the once great industrial platforms or single enterprises are in a decaying process and destroyed by the combined action of natural factors. In the case of several abandoned industrial sites in Romania, improper or illicit actions were conducted in an attempt to recover certain materials (reinforcing bars, bricks, etc.).

The deteriorated, deplorable appearance of the composing elements is a direct consequence of the decay caused by abandonment and the illicit actions of individuals. The quarries in Negoiu Românesc, Roșia Montană, Roșia Poieni (the most extended one in Romania!) and Rovinari are perfect examples in this regard. The same features may be noticed in the case of the abandoned industrial platforms of Copșa Mică (Fig. 2), Reșița, Hunedoara, Târgoviște, etc.



Fig. 1 – Repulsive ruiniform landscape in Harghita Băi
(Source: Cocean, David, 2016).



Fig. 2 – Abandoned industrial platform in Copșa Mică.

Because of *the lack of functionality and economic or social values*, there is no interest from the side of individuals or communities towards such areas that would require serious financial investments in order to be rehabilitated and reintroduced into the productive circuit; besides, the results of such rehabilitation attempts is by no means certain, and would most likely entail a long wait for a return on the investment.

The danger of *radioactive and chemical pollution* within the areas around waste dumps or tailing lakes is a consequence of the exploitation of uranium, sulfur, copper, gold and silver. Located

predominantly in the Eastern and Western Carpathians, such polluted sites induce a state of caution or mistrust, which has, as a primary reaction from individuals, the avoidance of such places.

The *discrepancy with the pre-existing landscape*, in which they were carved, as well as the *discrepancy with the surroundings* is a typical feature of the repulsive landscapes (Lohr, 2005). They often disrupt natural or cultural landscapes, on more or less extended areas, thus generating obvious physiognomic and functional contrasts. Their unpredictable dynamics, the lack of stability and negative influence upon the surrounding landscapes are obvious features, manifested predominantly in their interface area.

Depending on their geographical location, the degree of rehabilitation of repulsive landscapes, and the necessities and priorities of the local community, they could still be provided with a variety of uses, which should be further explored and analyzed, if we take into account the great expansion of brownfields in Romania – 900.000 ha of industrial brownfields in Romania (Filip, Cocean, 2012), as opposed to only 25.000 ha in France! (Donadieu, Perigord, 2005). They add up to cca 3.000.000 ha of unused agricultural land (Otiman, 2012) that could be considered a “reservoir” of lands to be used.

4. RISKS AND VULNERABILITIES TYPICALLY ASSOCIATED WITH REPULSIVE LANDSCAPES

The cumulative negative traits that degraded the display of cultural landscapes, whatever their typology, are the result of poor, abusive, uncontrolled or erroneous human intervention upon nature. The mining exploitations in the Banat and Bucovina Mountains are quite telling examples in this regard. The calculation errors that supported the beginning of the sulfur exploitation from the poor deposit of the Călimani Mountains or the bituminous schists from Anina were followed by the abandonment of said exploitations.

Other negative features result from the poor planning and management of agricultural, industrial or touristic landscapes, or from their abandonment due to economic-social reasonings (unsustainability), legal issues (mostly in concern to property rights) or environmental concerns (hesitant, long and costly reconversion) etc.

From the point of view of the cyclic evolution of cultural landscapes, degraded landscapes typically represent the stagnation and decline phase (Cocean, David, 2016) or even the total shutdown and desertion phase (Edelblute, 2009).

If risk is regarded “as a product of the probability of the occurrence of an event with a major potential for damaging the interests of communities and the measure of the consequences resulting from its occurrence” (Armaş *et al.*, 2003, p. 15), then repulsive landscapes appear to be the most illustrative areas for its manifestation.

The suitable conditions for risk occurrence come about in the context provided by the presence of vulnerability, i.e. the inability of the landscape to withstand the disruptive and destructive actions of aggressive internal or external factors. It implies internal systemic disturbances or liabilities, inherited or gained along the way due to unnatural evolution.

The risks associated with these landscapes are acutely felt by the population both in urban areas (Kunc *et al.*, 2014), as well as in rural, or even protected areas. The repulsive cultural landscape also becomes, in this case, a very representative showcase of the vulnerability phenomenon in its complexity. A more detailed analysis of the structure of the landscapes analyzed in this study reveals the following risks and vulnerabilities specific to the repulsive landscapes, and which are widespread in Romania during the transition period (Fig. 3): risks generated by the fragility and instability of the physical structure; risks and vulnerabilities induced by random, unpredictable dynamics of composing elements, vulnerabilities and risks generated by radioactive, chemical or olfactory pollution, and by unsafe access routes.

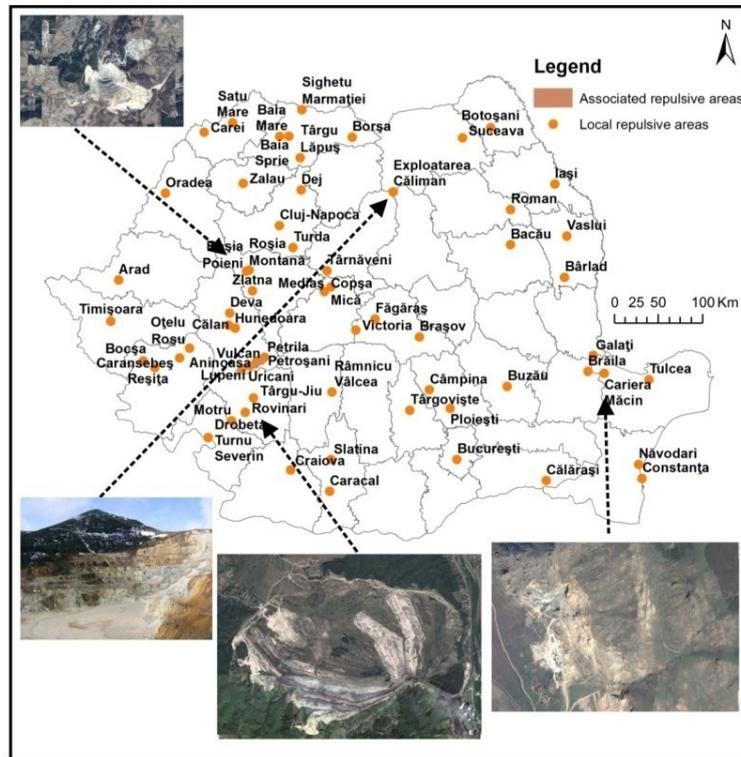


Fig. 3 – Areas with repulsive, degraded cultural landscapes in Romania (source: Filip S., Cocean P., 2012, modified).

The instability and fragility of the structures associated with such landscapes is responsible for a higher degree of vulnerability, while playing the part of important vectors of risk occurrence. This is due to their gradual degradation and the undermining of structural elements from a physical and chemical point of view. Abandoned industrial, agricultural or touristic infrastructures are subject to deterioration due to external agents (precipitation, wind, freeze and thaw, vegetation) that undermine their physical cohesion and are directly involved in their accelerated degradation. Waste dumps are included in the category of repulsive landscapes precisely because of these attributes, the internal cohesion of their composing elements being minimal.

The incidental/random dynamics of some components of these landscapes is an eloquent expression of their vulnerability. It can be found especially in the cases of the waste dumps in the country's main mining areas (the Petroşani basin, with over 350 ha, Călimani, over 200 ha, Rovinari, Baia Mare, Gura Roşiei, Deva, etc.) where landslides and other geomorphic processes manifest widely, turning into potential risks to the landscape and the nearby communities. Mud flows and landslides in the perimeter of the waste dump from Alunu, in Vâlcea County, with dreadful effects on the neighboring human habitats, are a recent relevant example of the unpredictability and scale of such phenomena.

Radioactive, chemical or olfactory pollution has a particularly repulsive effect due to the negative impacts it can have upon the health of those who commonly access such landscapes. In the case of radioactive pollution present in the Crucea area of Bucovina, Ostra, Băiţa Bihor (Crişana) or Ciudanoviţa (Banat), the impact is primarily of a psychological nature (the immediate effect of radiation on the human body being difficult to assess). However, in the case of chemical and olfactory pollution, a visual-sensorial component also makes its presence known. Those visiting the Călimani quarry (Fig. 4) are exposed to pollution caused by the sulfur in the upper soil that through its chemical

reaction to water results in highly polluting chemicals. Furthermore, the Geamăna tailing pond (Fig. 5) attached to the Roșia Poieni copper exploitation basin reveals a particular heavy metals chemical pollution. Waste ramps, poor, unsanitary neighborhoods, landfill sites, etc. may also have a harmful effect on the quality of soil, water and air.



Fig. 4 – Călimani Quarry.



Fig. 5 – Geamăna tailing pond polluted with heavy metals
(Photo: Gabriela Munteanu).

The lack of safety associated with the access to repulsive landscapes is due to the risks and vulnerabilities related to the damaged physical structure of the composing elements and caused by external modeling agents (rainfall, wind, freezing and thawing, vegetation), or by the negative impact of the human factor – either in the sense of deliberate undermining by dislodging or wrecking elements of structural strength, or by unduly postponing functional reconversion actions. The accident involving the Bozânta tailing dam, near Baia Mare, in 2000, is a typical example of the manifestation of such vulnerabilities and risks.

5. THE MANAGEMENT OF REPULSIVE CULTURAL LANDSCAPES

There is a wide variety of repulsive cultural landscapes, “each type of landscape having its functional or esthetic waste” (Cocean, David, 2016, p. 273). Their share differs among the different types of landscapes, a more consistent number being recorded in the group of industrial landscapes, where the anthropic-natural relation is more disproportionate and the degree of “culturalisation” of the landscape is higher. A waste dump or a quarry significantly alters the pre-existing landscape while also decisively modifying the parameters of evolution for the affected area. Besides, with the abandonment of such areas, degradation processes are quickly established, resulting in typical, repulsive landscapes.

A relatively similar situation may be seen in the case of touristic repulsive landscapes, which have expanded in Romania since 1990, when the rebound of tourism as an economic and social phenomenon led to the bankruptcy and cessation of the activity of numerous specialized units. Semenic, Băile Herculane, Borsec, Sângeorz Băi, Secu, Balványos, Moneasa, Soveja, etc. are well-known examples of the predicament which Romanian tourism faced during the transition period. The unsuccessful, faulted privatization and inefficient management of many units led to their closing down and degradation, although many of them, such as certain hotels or spa resorts in Băile Herculane, Borsec or Moneasa, had high heritage values.

In the case of degraded agricultural or forest landscapes (due to abandonment or unsustainable exploitation), the repulsive character is lessened by their immediate re-integration into the natural circuit. However, there are some exceptions, such as the abandoned and degraded livestock infrastructure or unutilized orchards, which can last for decades (e.g. the one on the Feleac Hill in the suburbs of Cluj-Napoca) or some vineyards overgrown by invasive shrubs from the Târnavelor basin.

For forest landscapes in the Carpathians and Subcarpathians, deforestation is at least partially mitigated by natural reforestation.

Due to their structure and dynamics, cultural repulsive landscapes are typical and critical areas, representing a top priority for authorities and organizations involved in environmental protection and good territorial governance. Associated with major territorial dysfunctions, having many negative environmental implications, repulsive cultural landscapes must become priorities for the territorial governance and must receive proper management; a requirement already emphasized by Donadieu and Perigord (2005, p. 45): “all landscapes, and especially the landscapes of abandoned spaces, deserve to retain attention”. However, international experience demonstrates that landscape regeneration of large-scale brownfields is difficult to achieve, it involves longer periods of time and it often has uncertain results (Lange, Mcneil, 2004; Frantal *et al.*, 2015; Rizzo *et al.*, 2015; Dehoorne *et al.*, 2016; Glumac and Decoville, 2020).

Taking that into consideration, we also have to mention the fact that repulsive cultural landscape can be employed in a profitable social or economic manner. Due to their distressing landscape characterized also by the presence of risks and vulnerabilities brownfields are an ideal setting for the formation and strengthening of “environmental awareness” (Deshaies, 2007, p. 12) both in the case of decision-makers, as well as political actors and the community. Besides, such landscapes could always be used as a counter-example which anyone involved in territorial planning should bear in mind.

Brownfields often contain in the form of vestiges, information of economic, social, political or even strategic origin, and representative of a certain stage of evolution of that particular community. For Romania, they are part of the intensive industrialization typical of the communist era. However, such elements of interest are permanently threatened with destruction. Therefore, in order to preserve and protect these features, certain elements of these landscapes, such as blast furnaces, cooling towers, unique technology facilities, mine galleries, etc., ought to be included on the list of cultural industrial heritage. The introduction of the brownfields Călimani or Roșia Montană into the “Route Européenne du Patrimoine Industriel”, together with the famous mining sites in Great Britain, Germany, France, Poland or Russia (Deshaies, 2006) is a first step in this direction.

In the context of their reconstruction and functional reconversion, brownfields have the ability of becoming laboratories where the theory and practice of human-nature relationships are directly and deeply interfaced, as well as an ideal setup for the application and testing of scientific and technological innovations focused on the protection and preservation of the environment.

The functionality and aesthetics of repulsive landscapes has registered a contradictory dynamic in recent years. Their territorial dynamics is strongly influenced by factors such as local territorial management policies, the interest of the authorities but also their real estate value. The most significant improvements were registered in the urban environment (Bucharest, Timișoara, Cluj-Napoca, Iași), where a large part of brownfields were regenerated within the development projects of some residential complexes, office buildings or retail areas.

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