

## Aspects Regarding the Impact of the Antropic Activities and Environment Factors Protection in the Touristic Area Râncea

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**Abstract:** *The tourism is based in the first place on capitalizing the touristic resources, and the level and intensity of the capitalization cause negative effects upon the environment in time and space. In this context, the touristic resources cannot be exploited wildly, without the risk of being degraded or destroyed. The territory inadequate touristic fitting out represents both a physical and an economical pollution factor, being the worst form of touristic resources degradation. The paper reveals aspects regarding the touristic fitting out of the mountaneous area Râncea and the impact caused by the touristic activities upon the environment factors, as well as other protection measures of environment quality by drawing up an acological system of collecting and cleaning the domestic waters in the mountaneous resort Râncea.*

### 1. Introduction

Currently, the environment is confronted with some major problems which affect the entire planet:

- The greenhouse effect;
- The reduction of the ozone layer;
- The pollution of the interior seas and of big or small rivers from the continents;
- Reduction of the flora and fauna biodiversity.

On the continents, the environment lacks equilibrium due to industry, agriculture, transports, and services activities. So, in time, several pollution forms occurred, which, when superposed, give birth to powerful destructions of the environment. Locally, the pollution manifests especially by wastes and trash accumulation, chaotic traffic and aesthetic degradations of the ambient.

The deepening of the environment issues from the last decades raises the problem of the resources management, of the pollution costs and of the maintenance of a high standard of living.

More than any activity domain, tourism is dependant of the environment, this representing the main resource and its quality may favor or obstruct the touristy activity.

The qualitative and quantitative disagreement between the touring resources and the respective equipment leads to exploitation disfunctionalities, with effects on the economical and physical efficiency of the equipment and resources.

The profound analysis of the pollution factors from tourism allows the outlining of an ecological strategy in this area, which supposes either the elimination of some factors, when possible, or, acting in the same time as the pollution factors, to diminish their noxious effect or even to cancel it.

### 2. The natural environment of the Râncea touristic

Râncea resort is located in the North-East of the Gorj County within the Novaci administrative territory, in the southern side of the under - Carpathian area.

The natural environment of the area is in the category of the touristic potential with a high complexity, diversity and landscape attractiveness, this being reflected in its structure and value.

The landscape value and the attractiveness of the places are given by the geological structure manifested by the relief forms (mountains and under-mountains), different in aspect, by the

hydrographic network (narrow valleys, abrupt versants) and by the forests occupying almost the entire surface. The representative attraction points for the analyzed touristic area are:

- *spectacular relief forms*, specific to the mountain area, highly attractive because of the landscape, represented by high peaks, crests, glacial relief elements;
- *the course of the Gilort creek*, with many spectacular courses;
- *the skiing area* – the base for the development of winter sports associated with a special climatic potential, highly valorous for a future mountain resort;
- *climate elements* – favorable for winter sports (thickness of the snow layer and its duration – depending on the altitude), for mountain camping and of other tourism forms, that could be practiced in every season;



- the climate potential is characterized by a mountain and under-mountain climate, with fresh air, strongly ionized, lacking dust and allergens and a sedative bio-climate, recommended for rest, recreation and getting into a good shape.

Due to its natural location, the future development of this area will have to be based on agro-tourism, mountain tourism and non-polluting industries.

### 3. The current situation of the Rânca touristic area

In the Rânca touristic area many buildings were drawn up during the past years, but the realized structures are not in agreement with the requests of a modern, European resort, they were not projected according to an Area Urbanism Plan, they do not respect the regulations regarding the occupation degree of the field, they do not have the necessary utilities (canalization, water cleaning station, domestic wastes transfer point), which led to serious effects on the environment.

Currently, the buildings are mostly private holiday houses on chartered fields. This aspect constitutes a disfunctionality, since there is no development strategy and valuable lands are occupied with individual buildings with a doubtful architecture. This led to the occurrence of a functional discontinuum, a fragmentation of what could have been a logical structure of organization and distribution in space and time. Under the aspect of the adopted architecture, almost 10% of the constructions respect the specific requests of volumetry, coverage, used materials, orientation.

The services offered to the population, including the tourists, are unsatisfactory as compared to the current requests and to the neighboring countries, members of the EU, possible rivals in the touristic area. A critical quick analysis of the situation in the services reveals the following aspects:

- canalization network and water cleaning station do not exist, this influencing in a negative way the quality of the environment;
- there is no trash dump/regular wastes transfer point complying with the current requests of the environment legislation;
- the electrical energy and telephony services are satisfactory;
- lodging and recreation touristic structures little diversified and very few;

- touristic services are weakly represented, little diversified and not at compatible standards with the status of a EU member that Romania has right now, in the conditions of a strong competition on the touristic market created by the neighboring countries.

The current situation of the canalization and waste water cleaning systems in the Rânca touristic area is unsatisfactory. The canalization system is a separate sewer system. The rain water is collected with ditches an road marginal channels and slopped into the natural water emissaries from the area. There is no canalization network for the domestic waste waters and no cleaning station for the waste waters. The slopping of the domestic waste waters is not controlled; 95% of the hotels, chalets, vacation houses from Rânca area are slopping waste waters by pipes into the rivers and creeks from the area, the rest of the having scooping septic tanks, but the slopping of their content is done by the natural emissaries from the area, without any cleaning step, deteriorating the quality of the waters and of the environment.

Taking into consideration the need/obligation to respect the community acquis regarding environment quality, the realization of an ecological system for the collection and cleaning of domestic waste waters from the Rânca touristic area is a must.

The system proposed for the diminishing of the impact produced by the domestic waste waters consists of a canalization network of Rânca resort by building new collectors with the total length of 13580 m, with Dn = 250 - 300 mm, structured on four collection and cleaning sub-systems which will serve three development areas inside the locality and which function independently. The chosen solution for the realization of the canalization and waste waters cleaning system from the area will allow the three areas to function independently with the possibility of extension for each one, in the following years within the Rânca resort, like the mountain micro-resorts with their own infrastructure managed by one services supplier.

Referring to the cleaning stations proposed for the Rânca resort, those were projected taking into consideration the characteristic flows for the station dimensioning, calculated for a population equivalent to almost 4000 PE in agreement with the actual and perspective development of the area.

Several solutions for cleaning the domestic waste waters were analyzed and compared from a technical and economical point of view, and the economic-ecological criterion was the decisive one. The system proposed for the cleaning of the domestic waste waters of the Rânca resort is based on the biodegradation and sedimentation technology with Aerated Mobile Support (AMS) which is unique due to the compactness and performances reported to the volumetric efficiency. These technologies are build-in prefabricated units, modular tanks mounted together with a standard support of a variable length fit for aerial or road transportation. By this system it is usually aimed at retaining the suspension matters (SM) and at eliminating the organic substances (CBO5), as well as of nitrogen and phosphorus compounds. The characteristics of the waste waters and the cleaning degree realized by applying this technology are presented in Table 1, Table 2 respectively.

*Table 1. The characteristics of the waste waters from Rânca area.*

The characteristics of the waste waters			U.M.
Oxygen biochemical consumption	CBO <sub>5</sub>	300	mg/l
Oxygen chemical consumption	CCO <sub>Cr</sub>	500	mg/l
Solid suspension matters	MS	350	mg/l
Ammoniac nitrogen	NH <sub>4</sub> -N	30	mg/l
Phosphorus total	P <sub>Total</sub>	5	mg/l
pH		6,5-8,5	

The chose technology allows the self-defense during high fluctuations of charging, flow-rate or temperature (very low temperatures -35<sup>0</sup>C) and is characterized by the development and fixation of a huge bacteria population on a plastic material support intensively aerated. The plastic material

plates have a density close to the one of water which makes them float freely and, due to their permanent movement, they do not allow mud to fix on them.

*Table 2. The cleaning degree of the waste waters from Rânca area.*

Oxygen biochemical consumption	CBO <sub>5</sub>	86%
Oxygen chemical consumption	CCO <sub>Cr</sub>	93%
Solid suspension matters	MS	90%
Ammoniac nitrogen	NH <sub>4</sub> -N	66%
Phosphorus <sub>total</sub>	P <sub>Total</sub>	80%

#### 4. Conclusions

Rânca area has a high touristic potential evaluated and demonstrated by specialty studies which were not valued yet. For the harmonious development of the area and for the territory arrangement without any special impact on the environment factors, it is mainly recommended the compliance with the regulations specific for the mountain area with an urbanity character, adopted according to the local conditions.

It will be taken into consideration the accordance with the occupation and utilization of the filed percents (POT<sub>max</sub> allowed = 40%), the constructions having heights which will underline the local topography with a mountain like architecture and with the use of specific local materials (stone, wood, etc.). The constructions which do not respect the occupation and utilization of the field indexes, specific for the area, as well as the lack of respect for the environment, of the forest especially, could lead to the occurrence of an excessive anthropization resulting in the loss of the initial attractiveness.

There is also the danger of destroying the forest by fire. The close distances between constructions, among trees, represent a real risk of fire spreading. This is one more reason to understand the need to respect the norms and laws in constructions.

The existence of a water supply system imposes the construction of a collection and cleaning system of waste waters resulted from the tourism activities of the area, in agreement with the valid environment legislation.

By realizing the proposed works it is expected to solve some important environment problems of the Rânca area:

- The increase of the comfort level of lodging with the help of the canalization network which will ensure the total collection of the resulted waste waters;
- The elimination of the soil pollution, of the ground-water table and of the surface waters, together with the positive effects on the quality of environment by the total conveyance of waste waters in the canalization network and by cleaning the waste waters;
- The environment and ecological conditions will be improved substantially as compared to the current situation, mainly by the controlled discharge of the waste waters in the natural emissaries of the area.

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