

## THE ECOLOGICAL IMPACT OF TOURIST ACTIVITIES IN THE IALOMIȚA SUBCARPATHIANS (ROMANIA)

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**ABSTRACT** - The analyzed region is situated in between the mountains and the plain and represents an area that is perfectly integrated in the natural and human landscape of the Romanian Subcarpathians. Relying on surveys out in the field and on questionnaires, our study has examined the ecological impact of the tourist activities in the tourist resorts of the Ialomița Subcarpathians. We have analyzed, as indicators, the production of domestic waste and the water consumption in the tourist activity, compared to the quantities produced on a local level. It can be noticed that the impact of the tourist activities on the environment is low, both in the case of the production of domestic waste and as far as the water consumption is concerned. It has been noticed that some tourist pensions with their own water supply and sewerage systems have a major effect on the environment when the environmental protection norms are not respected. The questionnaires filled in both by the local authorities and by the host communities show that they consider the tourists to be less responsible for the environmental condition than the local population.

**Keywords:** domestic waste, environmental condition, tourist activity, water consumption

### INTRODUCTION

During the recent period, the concept of sustainable tourism was approached by different scientists by transferring the attributes of sustainable development to the domain of tourism. In this context, the complex evolution of the tourist phenomenon is approached as well from the perspective of the ecological component of sustainable tourism. In a thorough study on this topic, the researchers Choi and Siracaya (2006) proposed several indicators to be used in the analysis of the ecological impact of the tourist activity.

In this study, we have opted for an analysis of the ecological impact of the domestic waste production and of the water consumption realized due to tourist activities, compared to the quantities recorded on a local level. We have analyzed these indicators for the year 2010, in the case of the tourist resorts Pucioasa, Câmpina and Breaza. These tourist resorts stand out in the Ialomița Subcarpathians both for certain elements of the tourism supply, and for the tourist circulation and flows.

The surveys conducted in the field gave us the possibility to put together a database concerning the number of tourist boarding units, the operating capacity of the present tourist accommodation, the degree of comfort in the rooms and the proportion of the boarding facilities used by tourists. At the same time, we have gathered data on the domestic waste production and the water consumption realized on the level of these localities in the year 2010.

The database was completed using questionnaires submitted to the local authorities and the host communities. They had in view the residents' perception on the impact of their own activity and of the tourists' activity on the environmental condition in these tourist resorts.

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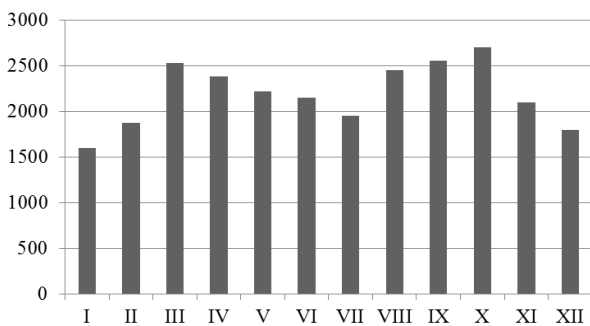
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**THE ECOLOGICAL IMPACT OF THE LOCAL TOURIST ACTIVITIES BY MEANS OF DOMESTIC WASTE PRODUCTION**

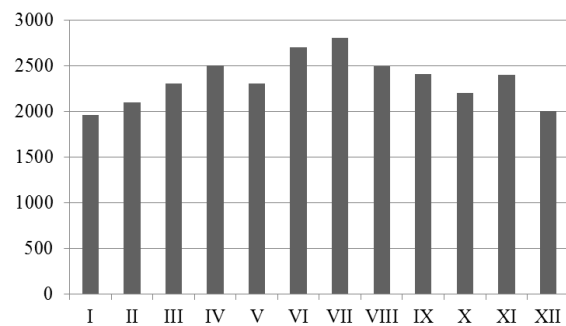
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The numerical increase of the population and the diversification of the services provided to the population during the last decades also determined a similar evolution as far as the domestic waste production is concerned, triggering a certain impact on the environmental quality (Alexe, 2010; Dinu, 2005).

The analysis of the evolution of the domestic waste production in the tourist resorts of the Ialomița Subcarpathians highlights differences both from one month to the next during the same year, and from one locality to the next. Therefore, in the year 2010, Pucioasa tourist resort, with a population of 15,403 residents, had a domestic waste production of 26,195 m<sup>3</sup>. The largest quantity of domestic waste was produced during the months of March and October, of which only October is a top month in terms of tourist activity (Figure 1).



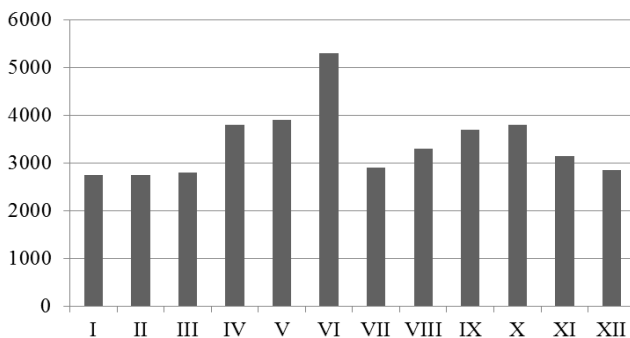
**Figure 1.** Evolution of the monthly quantities of domestic waste produced in Pucioasa tourist resort (2010)



**Figure 2.** Evolution of the monthly quantities of domestic waste produced in Breaza tourist resort (2010)

During the same year, the production of domestic waste in the tourist resort of Breaza, which has a population of 17,523 residents, was 28,062 m<sup>3</sup>.

The variations in the production of domestic waste show small differences from one month to the next, higher quantities being recorded in



**Figure 3.** Evolution of the monthly quantities of domestic waste produced in Câmpina tourist resort (2010)

the summer months of July and August (Figure 2). During these months, the tourist demand is higher, the resort being known for its recreational tourism. Among others, it possesses the only internationally homologated golf course in Romania (Benedek, 2001; Ielenicz, 2003).

In Câmpina tourist resort, with a population of 20,131 residents, the domestic waste production was 39,203 m<sup>3</sup> in the year 2010. The largest quantities of domestic waste were produced during the intervals April-May and September-October (Figure 3). It can be noticed that the differences between the domestic waste quantities produced are not

significant. This resort is known especially for its transit tourism, as it is situated on an important European road (Ciangă and Cocean, 2001; Cîndea and Bran, 2001).

## THE ECOLOGICAL IMPACT OF TOURIST ACTIVITIES IN THE IALOMIȚA SUBCARPATHIANS (ROMANIA)

In the estimation of the domestic waste production resulted from tourist activities, we considered the legal norms in force in Romania. For tourist activities, they indicate a value of  $0.1\text{m}^3/\text{person}/\text{month}$ .

It results that every boarding place, during a whole year, would produce  $1.2\text{ m}^3$  of domestic waste, if the boarding places were occupied in a proportion of 100%.

The calculations realized for the year 2010, according to these indicators, have yielded the following results as far as the quantity of domestic wastes resulted from tourist activities is concerned:  $1,621\text{ m}^3$  in Pucioasa,  $1,573\text{ m}^3$  in Breaza and  $1,402\text{ m}^3$  in Câmpina. It is obvious that the highest domestic waste production resulted from tourist activities is recorded in Pucioasa tourist resort. As it has a spa with mineral waters, the degree of occupation of the boarding places is higher, and the duration of the tourist journeys usually goes over 4 days. Consequently, in this resort, the impact of the tourist activities on the environmental conditions is more marked (Erdeli and Istrate, 1996; Dezsi, Ciangă and Rotar, 2002).

Breaza tourist resort is ranked second as far as the environmental impact of the domestic waste production resulted from tourist activities is concerned. Here, the proportion of the occupied boarding places is high during the summer months, when tourists can practice sports such as: golf, riding, fishing and hunting. At the same time, the introduction of the “Lac de Verde” four-star hotel into the tourist circuit has led to the increase of the demand for business tourism (Cocean, Vlăsceanu, Negoescu, 2002).

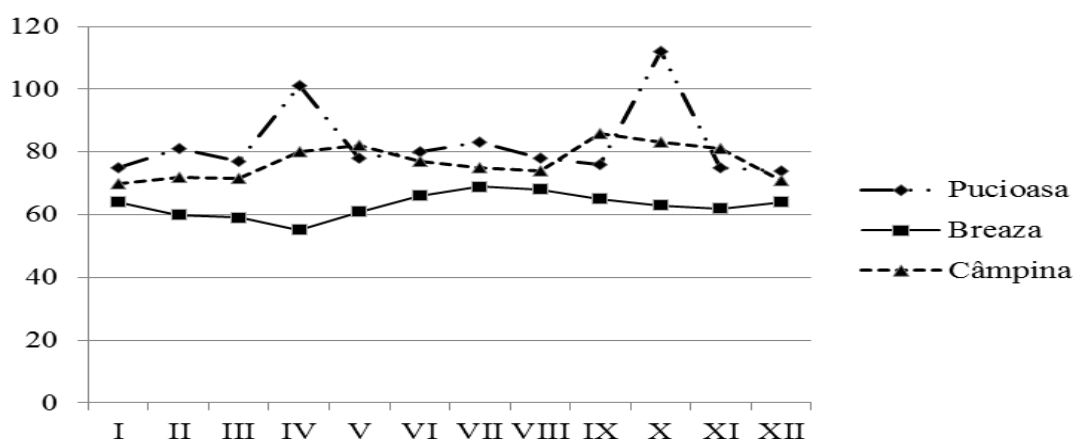
In Câmpina tourist resort, the environmental impact of the tourist activities due to the production of domestic waste is less significant. This corresponds to the low proportion of occupation of the boarding units throughout the year, as tourism has mainly a transit character.

It can be noticed that the ecological impact of the local tourist activities through the production of domestic waste is low in the region under analysis. Yet, the domestic waste management remains a problem that will have to be dealt with more carefully in the future (Neacșu, 2000; Cocean and Dezsi, 2001).

### THE ECOLOGICAL IMPACT OF THE LOCAL TOURIST ACTIVITIES BY MEANS OF WATER CONSUMPTION

The influence of human activity on the water resources includes, besides the aspect of the increased water consumption, the modification of the environmental condition because of this high consumption.

In this context, the analysis of the water consumption for economic activities, including tourist activities, is important in the research of the sustainable development of the environment (Hui, 2006; Mason, 2003).



**Figure 4.** Evolution of the monthly water consumption in the tourist resorts of the Ialomița Subcarpathians (2010)

It can be noticed that the evolution of the water consumption in the year 2010 in the tourist resorts of the Ialomița Subcarpathians does not present very high monthly variations. So, in Pucioasa tourist resort, the highest values of the water consumption were recorded in the months of April and October, and the smallest in July and December (Figure 4.)

Breaza tourist resort recorded its highest water consumption during summer (June-August), while Câmpina tourist resort did so during the first months of spring and autumn.

The calculation of the water consumption resulted from tourist activity for the tourist resorts in the analyzed region was carried out according to the legal norms in force. Thus, the consumption standard for the unit of the type hotel with common bathroom is  $4.5 \text{ m}^3/\text{place}/\text{month}$ , while for the unit of the type hotel with bathroom in each room it is  $15 \text{ m}^3/\text{place}/\text{month}$ . It results that, if the occupation degree were 100% during a year, for a unit of the type hotel with common bathroom the water consumption would be  $54 \text{ m}^3/\text{place}/\text{year}$ , and for a unit of the type hotel with bathroom in each room, this consumption would be  $180 \text{ m}^3/\text{place}/\text{year}$ . These norms refer only to the cold water consumption. For the warm water, the legal norms recommend the adding of 40% to the value of the cold water consumption.

The analysis of the data gathered out in the field by means of surveys concerning the water consumption has brought to light a low impact of tourism on the environment. However, the values obtained on the level of the year 2010, differ from one tourist resort to another, ranging from  $149,000 \text{ m}^3$  in Câmpina to  $287,000 \text{ m}^3$  in Pucioasa.

The highest environmental impact of the tourist activities via water consumption, on a local level, is recorded in Pucioasa, as it represents 22% of the total water consumption on the level of the locality. In the other tourist resorts, the environmental impact of the water consumption via tourist activity is not significant. What needs to be noticed is that there were situations in which the functioning of the water supply and sewerage systems belonging to certain tourist pensions did not correspond to the environmental protection norms. Therefore, the impact of the tourist activity on the environment on a local level via water consumption imposes the need to take management measures in agreement to the sustainable development demands (Swarbrooke, 1999; Bălțeanu and Costache, 2009).

### **THE TOURISTS' AND THE RESIDENTS' RESPONSIBILITY FOR THE LOCAL ENVIRONMENT CONDITION**

Starting from the premise that sustainable tourism ensures a balance between the needs of the tourist industry and those of the local communities, we get to the ecological component of tourism, which concerns the improvement of the environmental condition (Mathieson, Wall, 1986; Hall and Richards, 2000).

The questionnaires handed out to the local authorities and to the host communities in the tourist resorts situated in the Ialomița Subcarpathians gathered important data concerning the proportion of those considered responsible for the condition of the local environment.

Thus, by answering the question related to the extent to which the residents are responsible for the present environmental condition, the local authorities considered them responsible to a great and very great extent in a proportion of over 70% in the three tourist resorts.

At the same time, the percentage of the residents that the local authorities found responsible to a low extent in relation to the local environment condition is under 7%.

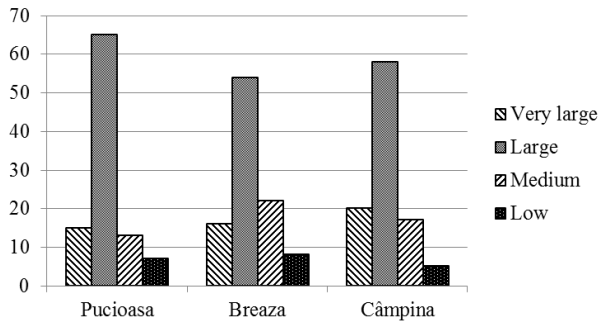
It can be noticed that there are slight differences from one locality to the next, as far as the perception of the local authority is concerned, in relation to the residents' impact on the environment. In Pucioasa, the local authorities consider the residents responsible for the environmental condition to a large and a very large extent in a proportion of 80%, while in Breaza this ratio is of 70%. These proportions show that the local authorities do not get involved sufficiently in projects aiming to get the residents to take part to the preservation of the environmental quality.

The answers of the local authorities who consider the tourists responsible to a low and very low extent for the environmental degradation go over 80% for all the tourist resorts (Figure 6).

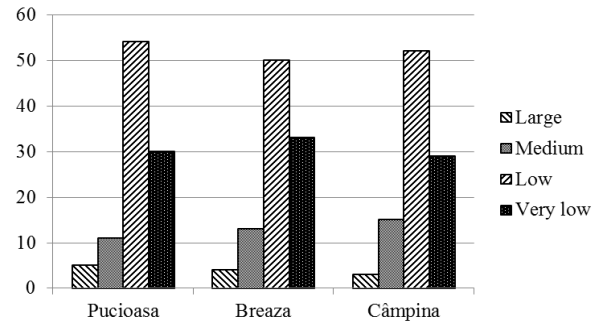
When the local authorities consider the tourists responsible, to a large or medium extent, for

THE ECOLOGICAL IMPACT OF TOURIST ACTIVITIES IN THE IALOMIȚA SUBCARPATHIANS (ROMANIA)

the environmental condition, they refer to the unauthorized camping and to the domestic waste abandoned in the environment.

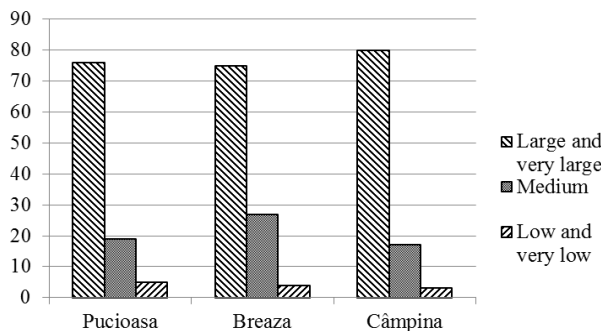


**Figure 5.** The local authorities' answers concerning the extent to which the residents are responsible for the actual environmental condition

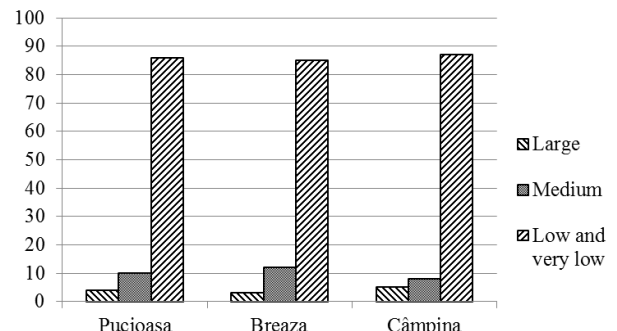


**Figure 6.** The answers of the local authorities concerning the extent to which the tourists are responsible for the present condition of the environment

It should be noticed that the answers of the host communities consider the residents responsible for the environmental condition to a large and very large extent, in a proportion of over 75% and to a low and very low extent in a proportion of 5% (Figure 7).



**Figure 7.** The answers of the host communities concerning the extent to which the residents are responsible for the present environmental condition



**Figure 8.** The host communities' answers concerning the extent to which the tourists are responsible for the present environmental condition

The host communities mention in the questionnaires the fact that, by burning the withered grass during the spring months, the residents cause the degradation of the environment. At the same time, this causes a certain discomfort to the tourists who are there for recreation and spa treatment or hiking.

As far as the tourists' responsibility in relation to the environmental condition is concerned, the host communities consider them responsible to a low and very low extent in proportion of over 85% in all the tourist resorts under analysis (Figure 8).

It can be noticed that both the host communities and the local authorities do not consider the tourist activity to be a phenomenon leading to the degradation of the local environment condition. On the other hand, the tourists often complain about the degraded condition of the communal roads, about the lack of signalization for the tourist paths and about the presence of stray dogs on the streets or in public parks.

It can be stated that the ecological impact of the tourist activities on the environment in the tourist resorts under analysis could be favourable if all the factors involved will desire it.

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