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## The Illegal Dumping of Waste in Forest Areas - Evidence from Rural Territory

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**Abstract:** Household waste generated is often uncollected in rural areas causing various types of pollution like: air and water pollution, soil pollution and the aesthetic degradation of the landscape. The environmental legislation proposed by the European Union was transposed on the national legislation but the implementation process was difficult because of particular situations encountered in practice. Rudimentary infrastructure of waste management and limited access to waste collection services lead to uncontrolled household waste disposal. In this context, the geographical location of rural settlements influences the way of waste disposal either on river banks or open dumps placed on roadsides or forest areas with various environmental implications. Those, forest areas in the proximity of human settlements or recreation areas become vulnerable to waste pollution. Even if local authorities are obliged to provide waste collection facilities since July 16, 2009 the illegal dumping of waste in forests is still present. This situation is reflected by field observations from Suceava and Neamț counties. Usually forest areas affected by uncontrolled waste disposal are located in hilly regions or subcarpathian areas. The degradation of these areas is visible and this can have a negative influence not only on the environment but also on tourism activities.

**Keywords:** waste management, forest areas, uncontrolled waste disposal

### 1. Introduction

Increasing the amount of waste is no longer a novelty, but waste management should be a priority for any local authority. We are aware that we live in a society where the consumption of products is enormous, and it inevitably leads to an increasing number of “useless materials” which can be recovered by developing waste management sector.

Factors that may influence the amount of waste generated are multiple, for example, income of the

population in developed countries could enable a higher consumption of products reflecting the high share of recyclables in household waste composition. Also, the large number of population in some low-income countries, would lead inevitably to an increasing amounts of biodegradable waste generated.

Leaving aside the social inequities a particularly importance in waste generation and their treatment play the consumer behavior and the emergence of new packaged products on the market. Thus, educating citizens in

environmental spirit is essential and must take into account the practice of waste prevention and recycling.

Waste management issues can be seen in the improper waste disposal facilities. Dumping waste outside special sites generate serious environmental problems.

A simple landfill site that does not meet environmental standards may adversely affect soil quality, can contaminate groundwater, can pollute air and damage the local landscape.

This research aims to exhibit the situation of local waste management and its environmental influences in Romanian rural areas.

## 2. Materials and methods

The study area is geographically located in north-eastern Romania and administratively situated of the North-East Development Region.

First, this paper analysis the dysfunctions of current waste management systems from rural areas,

which encouraging the illegal dumping on forest areas related to the field observations from 2009-2011.

A comparative analysis is done regarding the access of rural population to sanitation services using local waste statistics provided by Environmental Protection Agencies, for the period 2003-2008 (latest available data).

Secondly, this paper examines the implementation as a new EU member of EU waste management regulations on rural areas and its implications at the local level.

## 3. Results

Processing the statistical data we met two different situations.

On the one hand, rural population access to sanitation services from Neamț County has remained constant over the past 10 years, so that in 2008 only 10% of the population benefits of waste collection services (Fig. 1).

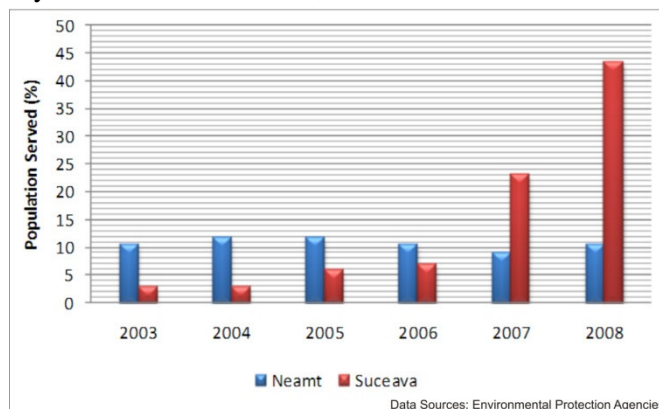


Figure 1 Rural population served by sanitation services

On the other hand, in Suceava County statistics show that over 40% of the rural population have access to sanitation services in 2008, compared to only 3% in 2003 (Fig. 1).

Fields observations from 2009 confirm that in rural areas of Neamț County sanitation services are lacking or inadequately performed. Thus, we noticed that the forests around rural areas have become real dumps. It seems that the most affected are hills and plateau regions, where geographical conditions favor the bad practices of the inhabitants.

Forest areas around rural communities: Brusturi, Oglinzi, Făurei or tourist resting places are affected by these inappropriate dumpsites (Fig. 2).

Open dumps are not missing in Suceava County, because the authorities do not take necessary measures to stop the illegal dumping of waste.

In the Carpathian areas, near settlements Râșca, Boroaia, Mălini, one can see forest areas affected by visible aesthetic degradation. Because of proximity to rural settlements, the rivers and tributary streams from mountain region are more vulnerable to waste pollution. Most of the waste generated and uncollected is partially recovered in households, and remaining waste is disposed in open dumps (Apostol and Mihai, 2011).



Figure 2 Waste dumping in forest areas - field observations

#### 4. Discussion

New EU members are facing with illegal dumping of waste on rural territory and they have difficulties to accomplish the EU waste management regulations (Apostol and Mihai, 2011; Orosz and Fakezaz, 2008; Kulczycka and Zygmunt, 2008).

European Union forced the construction of sanitary landfills, according to environmental standards and at the same time the closure of old dumps from urban and rural territory in order to minimize the environmental pollution and to rehabilitate the degraded sites.

The implementation of European standards has occurred according to local particularities of each Member State (Mazzanti and Zoboli, 2011; Pires et al., 2011).

In Romania, building new landfills was not completed until the date set for the closure of non-compliant dumpsites. This fact has generated an unpleasant situation in which the costs of sanitation services have increased because the waste had to be transported to the nearest newly built landfill.

The most affected are rural areas where some local authorities have abandoned sanitation services for financial reasons. Moreover, due to lack of environmental education of local population, in many areas appeared household waste dumped on river banks, on roadsides or forest

areas. The dumping of waste in inappropriate places have created a desolate landscape and affected tourist areas.

As we have seen in the analysis of statistical data and field observations, the reality existing in Romanian rural areas is one that exceeds the measures taken by local authorities. Although waste management infrastructure is still rudimentary in many rural communities, by 2009 it was able to cover the needs of residents.

Current high price of transport and waste disposal causes problems which are beyond the control of local authorities. Acquis implementation is difficult to achieve in rural areas because of the absence of a coherent waste management policy related to natural and socio-economic conditions. Fines for illegal dumping of waste in inappropriate places are required by law but the rural authorities sometimes avoid to apply them because it is difficult for them to identify the people who are responsible for these bad practices.

Ichinose and Yamamoto (2011) show that the number of illegal dumping incidents decreases as the number of intermediate waste management facilities increases.

Development of environmental policies requires the involvement of public authorities and in the same time the support of civil society. People must be aware to their environmental issues and to contribute for a local

sustainable development. Management plans of waste and recycling should be developed in order to sustain environmental, economic, and social development principles (Demirbas, 2011).

## 5. Conclusion

The implementation of EU regulations on waste management in Romanian rural space is still difficult and the improper sanitation services lead to various environmental issues.

Low economic support, incompetence and lack of interest shown by local authorities and sometimes the lack of ecological education among citizens contribute to aesthetic degradation of forest areas in proximity of human settlements.

Development of proper waste management facilities and extension of sanitation services in rural areas should be the priority for environmental investments.

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