

## ENVIRONMENTAL IMPACTS OF INFORMAL SETTLEMENTS WITH SECOND HOMES (VACATION HOMES). A CASE STUDY: APUSENI NATURE PARK

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**ABSTRACT.-Environmental impacts of informal settlements with second homes (vacation homes). A case study: Apuseni Nature Park.** The past decades has seen the rapid development of second homes in many country of the world. Therefore, secondary dwellings used for tourism-related purposes (vacation homes or second homes) are a reality that becomes more pronounced and visible at both nationally and internationally level. However, the rapidity and the novelty of the phenomenon creates difficulties in terms of efficient management and suitable integration in spatial planning and urbanism plans, favoring - in a negative way - expanding of build-up areas (with second homes) in a chaotic way. Since there has been no detailed investigation of second homes tourism from the perspective of informal settlements, this article follows a case-study design, with in-depth analysis of informal settlements with vacation homes found in Apuseni Nature Park. Based on long-term field research, will be exemplified 4 types of informal settlements with second homes (vacation homes) identified in the case study. The aim of this paper is to critically analyse the effects of informal settlements with vacation homes on the natural environment.

**Key words:** second homes tourism, protected area, informal dwellings, settlements typologies.

### 1. INTRODUCTION

The concept of informal settlements, wich is often the reflection of the high level of urbanization and typical of countries with developing economies on the background of political and social shifts is a subject of interest both for academic studies and international governmental organizations. Thus, as a first definition, informal settlements represents *areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally; unplanned settlements and areas where housing is not in compliance with current planning and building regulations* (unauthorized housing) (Glossary of Environment Statistics, United Nations, 1997, p. 43), or *are residential areas*

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*where: inhabitants have no security of tenure vis a vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing; the neighbourhoods usually lack, or are cut off from, basic services and city infrastructure; the housing may not comply with current planning and building regulations, and is often situated in geographically and environmentally hazardous areas* (United Nations Economic Commission for Europe, 2016, p. 21 ).

Also, a broad range of empirical studies concerning this issue are carried out from the perspective of the poverty, socio-economic inequality or the existence of poor land management, planning and development policies wich are incompatible with realities on the ground.

Therefore, informal settlements is often associated with a certain social category of people as well as refugees, economic migrants, socially vulnerable groups or internally displaced people (Tsenkova, 2012, Sanyal, 2017), part of urban poor (Khalifa, 2015), ethnic minority (roma) or economic marginalized people, who spend their daily life in buildings evacuated for demolitions purpose or abandoned by the public authorities, colony of barracks (Suditu, Vâlceanu, 2013, Vâlceanu et al., 2015), low quality houses with inadequate infrastructure and social services associated (Ali, Sulaiman, 2006), ghettos, shantytowns, slums, vulnerable to fires and other nature disasters (Walls, et al., 2017).

Up to now, far too little attention has been paid to those types of informal settlements that do not reflect a precarious standard of living (specific to disadvantaged people), but on the contrary, are the image of that social categories with middle or upper-middle class income, whose properties and buildings may be confronted with urban and spatial planning incompatibilities. In that particular sphere of informal settlements are included second homes (vacation homes), improvised or unclassified accommodation units or other constructions used for other purposes wich are not part of first category.

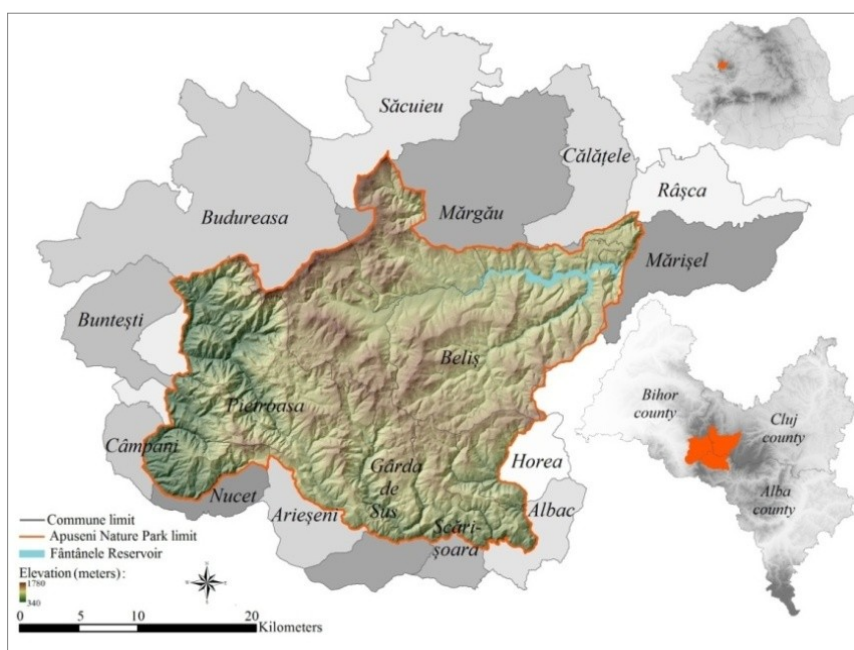
In this respect, in accordance with UNECE (2016) and NALAS (2011) the diversity of informal settlements can range from low quality houses (for example shacks) to luxury villas, and due to their heterogeneity and diversity, it is necessary to distinguish clearly between those groups of unprivileged individuals with lower middle class income whose houses were built conditioned by certain social and economic situation, and those persons with a high standard of living and whose informal dwellings were build for tourist purposes, illegal rent or for sale (e.g. vacation homes or luxury villas) (UNECE, 2016). Moreover, besides urban agglomerations areas, informal settlements are also being built in the suburban areas, rural areas, nature reserves, protected and contaminated land (UNCE, 2016, p. 26).

Despite the complexity of this subject, there is a relative paucity of empirical research focusing specifically on informal settlements with vacation homes, so the present study does not aim to extrapolate the concept of informal settlements in a general sense, but the objective identification of the main negative effects on the natural environment caused by their existence.

We will also specify that we do not have any concrete information with regard the number of authorized and unauthorized second homes (vacation homes) on the studied area, but we will focus on realities on the ground analyzed from the perspective of their inappropriate location.

Whit regard to conditions of building villas or secondary residences in Romania, Ciangă (2006) claims that *the owners do not comply with legal provisions relating to local and zonal spatial development plans* (p. 25), *often (secondary residences) are located without following and integrating into a urbanization plan and wich, most of them are deprived of sewerage facilities* (p. 101).

Analysis from this perspective is all the more necessary as the Apuseni Nature Park is declared protected area by Law no. 5/2000 concerning the approval of the Plan on the National Territory Structuring - PATN, Section III, Protected Zones, category V IUCN (International Union for Conservation of Nature), park-terrestrial landscape type. Also comprises on almost entire surface (except for Beliş locality) the status of ROSCI0002<sup>2</sup> Apuseni and ROSPA0081<sup>3</sup> (with exception of: Bălcești and Dealu Botii localities, and Fântânele Resort).



**Fig. 1.** Location of the Apuseni Nature Park on the national context.

<sup>2</sup> <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=ROSCI0002>

<sup>3</sup> <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=ROSPA0081>

From an administrative point of view, the protected area analyzed comprises parts of 3 counties: Cluj (38%, Bihor 36% and Alba 26%-according to the calculation made in the ArcGis, 10.2 software) within which in accordance with the Management Plan of the Apuseni Nature Park (2006, in pending approval), the protected area is classified into 4 types of protected areas as follows: the most permissive category specific to the *area of sustainable development of human activities* (the built-up area and the surrounding of traditional households, and also the built-up areas where structures such accommodation and vacation homes are permitted), *the area of sustainable management* (outside an build-up areas), *the full protection area* and the most restrictive area - *the strict protection area*.

## 2. MATERIALS AND METHODS

The approach to empirical research adopted for this study was one of the greatest challenges. Data for this study were collected throughout a long field research, facilitated by direct observation of second homes tourism.

Thus, a first step was identification vacation homes location, a process based mainly on information obtained from local population, but also according to our own considerations guided by certain pre-established criteria, which can generate possible errors. The step was followed by data processing using ArcGis 10.2 software. For mapping support, the Kernel Density function was used only to facilitate and capture the spatial character of the phenomenon.

Also, for the purpose of this article both qualitative and quantitative methods were used in this investigation. The qualitative data were obtained using field observations followed by a photographic exemplification and a large body of literature investigated (both directly related to environmental impact of second homes tourism and also with other related fields).

## 3. RESULTS AND DISCUSSIONS

Second homes tourism has long been a question of great interest in a wide range of fields. There is a growing body of literature that recognises the importance of researching the impact of second homes on the natural environment (Norris, Winston, 2009, Roca et al., 2011, Dykes, Andreas, 2015, Long, Hoogendoorn, 2013, Jeong et al., 2012, Mirani, et al., 2015) given the fact that particular favourites destinations of second home owners are areas with high tourist potential and at the same time, environmentally protected and vulnerable areas: mountain areas, the shores of anthropic or natural lakes, seaside areas, rural areas, spa resorts (Adamiak, 2016, Ciangă, 2006).

Adamial (2016) and Gartner 1987 (cited by Casado-Diaz, 2004) underlines that the impacts of second homes (vacation homes) on the natural environment and landscape depend on a national and regional context, vary between the locations

and the types of developments, or depending on length of stay of second home owners.

From this perspective, the present study highlights four types of settlements that can generate negative impacts on the natural environment, individualized by location-dependent features:

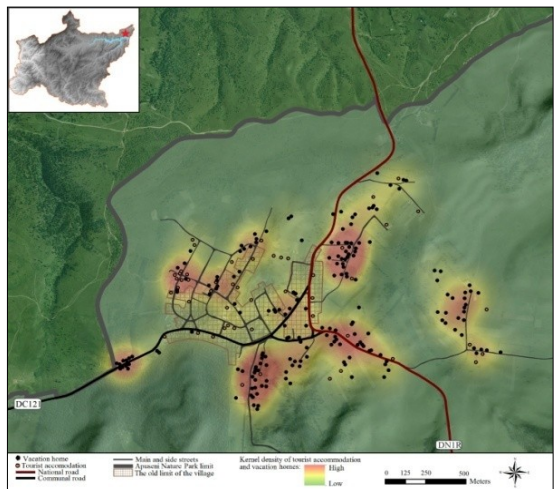
- *Informal settlements resulting from the peripheral extension of the locality. Case study: Beliș locality (Cluj county)*

According to the County Statistics Department Cluj, in 2011, Beliș (communal residence) has had 214 second homes (vacation homes), 50% of the total vacation homes from Beliș commune.

The presence of the national road that cross the locality and the easy accessibility to Fântânele Reservoir and Padiș Karst Plateau (where the most important number of tourist attractions in the Apuseni Natural Park is located), are only a few factors which led to spatial and numerical expansion of vacation homes in Beliș locality.

High accessibility and positioning at a relatively short distance from the city of Cluj-Napoca (the main area of usual residence of second home owners for Beliș locality) can create negative consequences for the natural environment by increasing the number of visits and, implicitly, of cumulated length of stay, which leads to over-agglomeration during peak periods of tourist seasons. In this respect, Müller et al., 2004, argues that the transport process between the usual residence and second homes used for tourism purposes is the most significant form of impact on the natural environment.

The particularities of this type of settlement, consist of uncontrolled peripheral extension in the form of clusters of built-up areas with second homes (vacation homes), which, in terms of territorial and urban planning, requires considerable efforts to administer and connect to the technical and municipal utilities necessary for living in optimal conditions.



**Fig. 2.** Vacation homes on Beliș locality, Cluj county, 2017

The high density of construction and the urbanization effect caused by the large number of second homes are two specific characteristics for Belis. They can cause substantial changes in land use, spatial and morphological patterns of settlements (Mika, 2013), and also can create *soil sealing* effect<sup>4</sup> by covering the land with impermeable materials specific to urban centers but also found in areas with a high second homes density (especially for buildings with permanent foundations). The consequences consist of affecting fertile agricultural land, endangering biodiversity, increasing the risk of floods and contributing to global warming.

The urbanization effect is also felt in terms of landscape quality. Many constructions are made of inappropriate materials (not respect the principle of sustainable development), the dimensions of constructions are often exaggerated and there is no architectural coherence.

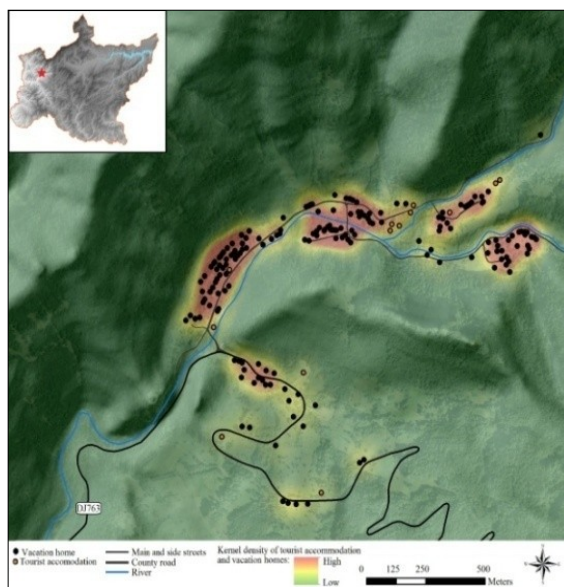


**Fig. 3.** Traditional house vs. Vacation homes in Beliș locality

*- Informal settlements resulting from the construction of second homes (vacation homes) on the old seasonal agricultural and pastoral settlements. Case Study: Boga, Bihor County.*

The settlement with vacation homes and a few touristic accommodation units became popular due to its location on the banks of the Boga river (and its tributaries Bulz and Oșelu), crossed by the county road which represents the most important point access to Padiș Karst Plateau from Bihor county. With about 200 holiday homes, Boga is the most representative and older agglomeration with second homes used for tourism purposes of the whole Apuseni Nature Park.

<sup>4</sup> [ec.europa.eu/environment/soil/sealing\\_guidelines.htm](http://ec.europa.eu/environment/soil/sealing_guidelines.htm)



**Fig. 4.** Vacation homes on Boga, Bihor county, 2017

The specificity of this type of settlement in terms of the natural environment impacts of second homes, is the high density of seasonal dwellings which are not in compliance with current planning and building regulations, rather representing a *fictional* settlement.

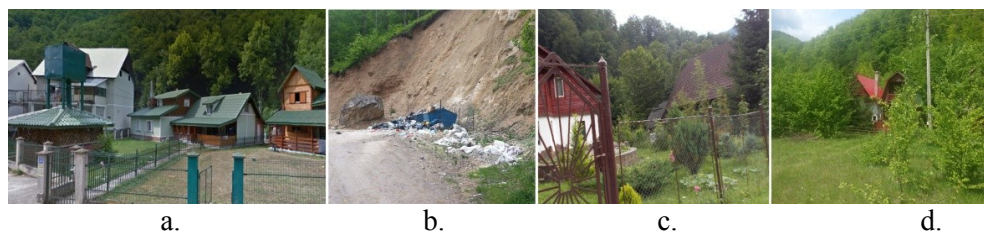
The process of building without the coordination support of local administration and authorities, failure to comply with the carry capacity of natural environment, the impossibility of connecting to the networks and the technical-urban facilities necessary for any settlement with or without tourist functions, attract negative and irreversible consequences for the natural environment.

One of the most significant problems encountered in Boga is the location of second homes in the proximity of the watercourses that are part of the headwaters area of water catchment area of the river Crișul Pietros. The effects of water pollution in the upper basins of the watercourses resulting from the tourism activities related to second homes has been analyzed in various papers (Ontario, Ministry of Natural Resources, 2013, Cooper, 2006, Dokuill, 2013) but with direct reference to the artificial lakes. A more eloquent case is encountered in the Fântânele Lake area and the settlements of Poiana Horea, Smida, Doda Piliu and Ic Ponor, in Cluj County (Ciupe, Lazăr, 2017), but considering the high number of vacation homes in Boga, it could be considered that there may be a similar risk.

Other impacts on the natural environment in the Boga settlement may be caused by poor waste management, pollution and introduction of invasive plant



species by gardening and maintaining personal gardens, deforestation of vegetation for construction of vacation homes, and so on.



**Fig. 5.** Examples of impacts on the natural environment of vacation homes in Boga, Bihor county.

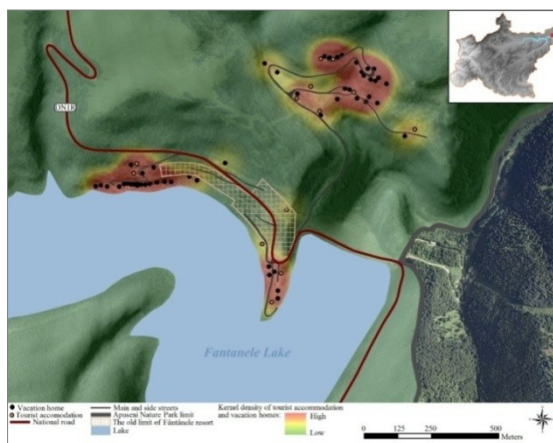
a-urbanized landscape; b-deficient waste management; c-gardening with foreign species; d-vacation homes localised into forest vegetation.

- *Informal settlements with vacation homes resulting from the expansion of tourist resorts. Case study: Fântânele Resort, Cluj County*

Although is well-known at nationally level due to its high landscape quality, the Fântânele Resort, located on the shore of the lake of the same name, faces a type of bankruptcy development, and there is neither a sufficiently large accommodation capacity nor leisure facilities that meet the needs and requirements of potential tourists. On this background, a large number of second homes appeared, some of which were located on the shore of the reservoir and a part dispersed upstream.

The negative impact on the natural environment caused by vacation homes constructed at the base of Fântânele reservoir are doubled by the risk to the aquatic ecosystem. In this respect, the constructions themselves (as a physical structure) and the building process, the tourist and non-tourist facilities, as well as the tourist activities practiced by the owners constitute the biggest impediment to the achievement of environmental protection objectives (Ciupe, Lazăr, 2017).

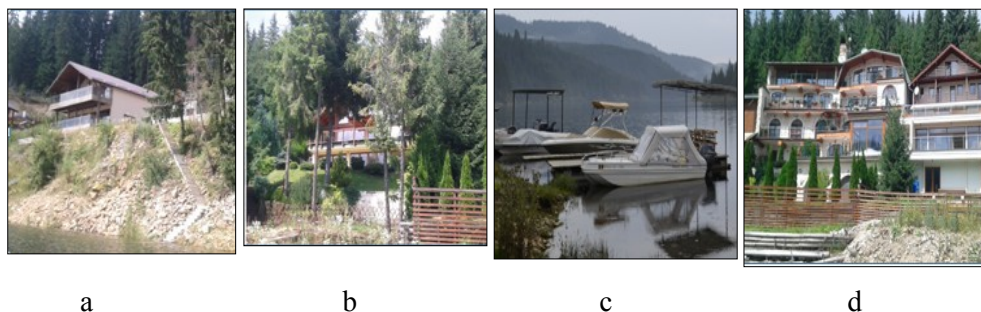
In the case of the Fântânele Resort, as well as the other settlements on the shores of Lake Fântânele, the most important risks are related to the location of the vacation homes on the protected zone of shoreline established by Water Law



**Fig. 6.** Vacation homes on Fântânele Resort, Cluj county, 2017



107/1996. The construction of houses in this flood hazard area also causes soil erosion both by removing the forest vegetation and by building the vacation home with a permanent foundation and, last but not least, the contamination of the lake caused by improvised septic tanks or pollution with domestic water.



**Fig. 7.** Examples of impacts on the natural environment of vacation homes in Fântânele Resort, Cluj County

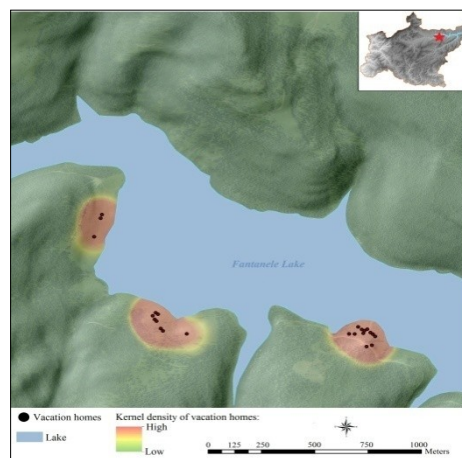
a-inappropriate tourist facilities; b-vacation homes on the forest vegetation of shoreline; c-tourism activities with risk of noise and water pollution; d-vacation homes on the protected zone of the lake.

*- Spontaneous informal settlements on the shoreline lakes. Case study: Fântânele Lake*

It is known that the most popular destinations favorite by vacation homes owners are areas with high landscape quality and why not, some degree of exclusivity. This is also the case for spontaneous settlements on the shores of Lake Fântânele in the Apuseni Natural Park. The negative effects on the environment do not differ from the one previously discussed (Fântânele Resort), so for reasons of space, is not reconsidered in this section.

The peculiarity, however, consists of isolated location from other localities and poor accessibility. This is the risk of increased use of forest roads, which affect the natural environment through vehicle emissions, soil erosion, noise pollution.

According to Sthephen et al. (2000), roads crossing ecosystems can be the cause of



**Fig. 8.** Vacation homes on the shoreline of Fântânele Reservoir, Cluj county, 2017

animal mortality, animal behavior change, physical environment disruption, alteration of the chemical environment, spread of exotic species, changes in human use of land and water, and hunting and fishing (legal or illegal).



**Fig. 9.** Examples of natural environmental impacts of spontaneous informal settlements on the shoreline lakes

a-informal dwelling used for tourist purposes; b-environmental impacts of tourist activities; c-vacation homes located on the shoreline; c-negative consequences of land use changing.

#### 4. Conclusion

The impact of vacation homes on the natural environment has been discussed in many scientific papers, and some approaches have highlighted the benefits of vacation homes tourism, arguing that it is the least harmful form of tourism due to interest and involvement of owners in environmental protection activities, restoration of traditional houses and convert them in vacation homes without the need for further complex arrangements (Roca et al., 2011, Brida, et al., 2011). However, the present study has proposed an informal settlement approach, without excluding the fact that there are some positive effects of vacation homes tourism.

As a result of the direct field research, four types of settlements with secondary dwellings which do not correspond to the concept of sustainable ecological development were identified: informal settlements resulting from the peripheral extension of the locality in Beliș, Cluj County, informal settlement resulting from the construction vacation homes on the old seasonal agricultural pastoral settlements such as Boga, Bihor County, informal settlement with holiday homes resulting from the expansion of tourist resorts with a case study: Fântânele Resort and spontaneous informal settlements on the shoreline of Fântânele Reservoir.

All these forms of tourism development have a number of common negative impacts on the natural environment, but with some particularities. Thus, the most important negative environment impacts are: deficient waste management, extension of the built-up area in a uncontrolled way, extension of the access roads, noise and atmospheric pollution due to the access by cars to the proximity of the property, tourist activities performed, improvised tourist and non-tourist facilities,

non-compliance the local architectural style, the size of the dwellings and traditional building materials, the deprivation of access of the local population and tourists to the lake's shore (Fântânele), urbanized landscape, etc.

As expected, research demonstrate that there is a connection between location of vacation homes and the negative consequences on the natural environment.

However, we believe that through cooperation between local and county authorities and administrations, and the Administration of the Apuseni Natural Park, tourism with second homes can be a factor for tourism development that will provide a viable and opportune alternative with beneficial effects both on the environment but also on the economic and social level.

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