

**FOREST ECOSYSTEMS BETWEEN CONSERVATION AND  
CAPITALIZATION – CASE STUDIES: LES HAUTS DE  
CHARTREUSE NATURE RESERVE (THE FRENCH ALPS  
MOUNTAINS) AND THE NATURE RESERVE LĂPUȘNA  
RESONANCE SPRUCE FIR (THE CARPATHIAN MOUNTAINS –  
THE CENTRAL GROUP OF THE EASTERN CARPATHIANS)**

**ECOSISTEMELE FORESTIERE ÎNTRE CONSERVARE ȘI  
VALORIFICARE – STUDII DE CAZ : REZERVAȚIA NATURALĂ  
LES HAUTS DE CHARTREUSE (MUNȚII ALPII FRANCEZI) ȘI  
REZERVAȚIA NATURALĂ MOLIDUL DE REZONANȚĂ  
LĂPUȘNA (MUNȚII CARPAȚI – GRUPA CENTRALĂ A  
ORIENTALILOR)**

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**Abstract:** The present paper deals with the comparative analysis of the management types of two nature reserves: Les Hauts de Chartreuse (The French Alps) and Lăpușna Resonance Spruce Fir (The Carpathian Mountains – the central group of the Eastern Carpathians). In these two nature reserves, the forest ecosystem plays an extremely important role: in the French reserve, 45 percent of its total surface is covered by trees of European interest, while the Romanian reserve is a natural forest reserve. The management of these forest ecosystems has to preserve the natural ecological balance and, in both cases, wood exploitation is a priority at a local level, which means specific problems. The management of Les Hauts de Chartreuse nature reserve is marked by the opposition between the persons that own land within the reserve and its custodian's will, which makes the application of the management plans difficult. The management of Lăpușna nature reserve is under two threats – wood illegal exploitation and the local plan for tourist development. There is the following question that stands at the core of the present paper: What type of management has to be applied in the case of mountainous nature reserves in order to sustain the efforts of conservation and capitalization of forest ecosystems?

**Key words:** sustainable management, nature reserves, forest ecosystems, territorial resources, the Alps, the Carpathians

**Cuvinte cheie:** gestiune durabilă, rezervații naturale, ecosisteme forestiere, resurse teritoriale, Alpi, Carpați.

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## INTRODUCTION

Presently, when we speak about the sustainable development of a certain territory, we automatically speak about the capitalization of its local resources (material and human).

But, if the area has a particular status, more precisely that of natural reserve located within a mountain area, there raises the following question: how can we sustainably capitalize the mountain space to be able to protect the natural elements, to respect the needs regarding the utilization of the mountain space, as a recreation space, and to encourage, at the same time, the local economic activities meant to settle the population.

The mountain territorial resources play a particular role in this capitalization process of the local resources, of the “territorial reinvention” (Pecqueur, Gumuchian 2007), because they have been used since old times, but their irrational exploitation has had severe consequences.

On the other hand, sustainable exploitation of these resources associated with the local population’s real involvement in problems’ solving and projects’ sustaining may represent the key to the difficulties the mountain space presently confronts with.

Les Hauts de Chartreuse nature reserve is located in the calcareous Pre-Alps, in the eastern part of Chartreuse Massif, Rhône-Alps region. It has a surface of 4,450 hectares, and from the administrative point of view, its territory belongs to 11 communes from 2 departments, Isère and Savoie.

This reserve was created on the 1<sup>st</sup> of October 1997 through the ministry decree number 97-905, its general objective being “to ensure the conservation of the natural and biodiversity patrimony”.

The nature reserve “Lăpușna Resonance Spruce Fir” is located in the central part of the Eastern Carpathians, in the Gurghiu Mountains, Mures County, Ibanesti commune. It has a surface of 78.8 hectares and it was founded in 2000 through the government decision number 236/2000.

The custody of the nature reserve “Lăpușna Resonance Spruce Fir” has been entrusted to the National Forest Administration – Romsilva since 2004, more precisely to its representative in the territory, Tg. Mures Forest Department, respectively Gurghiu Forest Ward.

In France, the administration of the Chartreuse Regional Nature Park has obtained the custody of Les Hauts de Chartreuse nature reserve since 2001.

The common point of the two studied nature reserves is represented by their forest ecosystems. Thus, the nature reserve “Lăpușna Resonance Spruce Fir” is a forest ecosystem of European interest, which protects extremely rare spruce firs (*Picea abies*): more than 150 years old, 60 cm diameter, and 36-38 m high.

As for “Les Hauts de Chartreuse” nature reserve, trees of European interest represent 45 percent of its forested surface: Swiss mountain pine (*Pinus mugo* subsp. *uncinata*), dry beech trees with orchids (*Fagion sylvaticae*) or forests of sycamore maple (*Acer pseudoplatanus*).

## PROBLEMS

The management of these forest ecosystems has to ensure the preservation of the natural ecological balance, but, in both cases, their conservation depends on the dynamics of the environment and human activities developed within their perimeter, which implicitly and explicitly influence it.

These dynamics are influenced by the local need for wood exploitation. But, what is the exact context, this local will emerged?

**In Chartreuse**, the average altitude, soil quality, and high amount of precipitation created favourable conditions for a good forest productivity.

The forested surface from Chartreuse Regional Nature Park represents 60 percent of the territory (the largest domain forest from the Alps), the forest directly participating in the identification of this massif.

At the same time, wood exploitation represents an income source for the local inhabitants, as there functioned 15 timber factories with 400 employees in 2006<sup>2</sup>.

The solution proposed by the administration of Chartreuse Regional Nature Park to maintain this activity, based on a renewable resource, but developed at high costs due to the hilly landforms, was to obtain the AOC<sup>3</sup> certificate.

At the same time, in Chartreuse, there is a local dynamics focused around the forest ecosystems, where different categories of actors are involved, such as the administration of Chartreuse Regional Nature Park, non-government associations, local administrations (municipal councils), local manufactures etc.

The main projects sustaining this dynamics are:

- Obtaining the AOC certificate for fir (*Abies Alba*) and spruce wood (*Picea abies*), the most frequent species within Chartreuse;
- Atout Bois program referring to cultural and social actions about forest: conferences, guided visits in the forest, exhibitions, demonstrations of wood processing etc.

But, what is the place of wood exploitation in relation with the aforementioned activities?

In “*Les Hauts de Chartreuse*” nature reserve, forested surface covers about 1,940 hectares; the most productive units are the spruce and beech forests disposed at the extremities. The dense and relatively recent network of forest roads that works in the area favours an intensive exploitation, which directly depends on the ownership type.

According to the management plan of the reserve, the two landowners’ types that own the forested terrains within the reserve are: private landowners (they own 29 percent of the forested surface) and state landowners (they own 71 percent of the forested surface, 55 percent of which belonging to municipal councils and 45 percent being domanial) (Fig. 1).

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<sup>2</sup> According to the data supplied by Chartreuse Regional Nature Park

<sup>3</sup> AOC in French “appellation d’origine contrôlée” represents the official quality certificate recognized by the French State

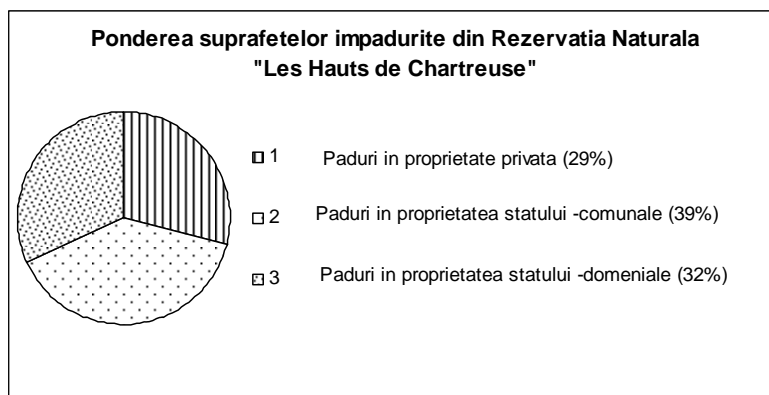


Fig.1 The rate of forested surfaces within "Les Hauts de Chartreuse" Nature Reserve<sup>4</sup>

1. Private forests (29 percent)
2. State forests – local communities (39 percent)
3. State forests – domanial (32 percent)

The management of these forests depends on the property type:

- 64 percent of the state forests benefit from a forest planning made by the Forests National Office;
- private forests, the owners of which belong to a local forest association benefit from a simple management plan (made by the respective association) at a rate of 52 percent (for example RCFP – the Regional Centre of Forest Property);
- the rest of the public and private forests does not have a specific forest planning.

Comparing the forest surface with a forest planning (1,164 hectares according to Table no. 1) to the total forest surface of the reserve (1,940 hectares), one may notice that they represent only 60.5 percent of the total forested surface.

Table no.1

The rate of the forested surfaces benefiting from a forest planning

	Total forested surface (ha)	Forested surface with a forest planning (ha)
Private forests	562	292
Local state forests	758	882
Domanial state forests	620	

Source: Management plan of Les Hauts de Chartreuse Nature Reserve, 2008.

Thus, the opposition between the landowners that have properties within the reserve and its custodian (Chartreuse Regional Natural Park) marks the management of the forest ecosystems from Les Hauts de Chartreuse Nature Reserve.

This situation hardens the application of the management plan, the custodian recognizing that it has not been able to gather all the local actors involved in the

<sup>4</sup> Achieved by Olga Băltescu, Source: Chartreuse RNP, 2008.

exploitation and management of the forest ecosystems so far.

**The Nature Reserve “Lăpușna Resonance Spruce Fir”** has a good conservation state. The factors leading to the maintenance of this state are: the past status of this reserve, namely that of forest seed reservation; then, tourism developed only at a small scale due to the low altitude of this massif and poor infrastructure (especially the lack of the access lines).

The custodian of this reserve is Gurghiu Forest Ward, which is the representative in the territory of Tg. Mures Forest Department, a sub-unit of the National Forest Administration – Romsilva, which functions under the direct authority of the Ministry of Agriculture and Rural Development. The present management practiced by the aforementioned custodian is a unilateral one, aiming exclusively at the forest objectives.

In this area, the necessity of wood exploitation appeared on the background of the local population's economic problems and we have to take into consideration the high price of resonance wood, as well. But, as compared to the French reserve, wood exploitation within this reserve is forbidden.

Consequently, the characteristic activities for wood exploitation develop in the areas surrounding the reserve. The great demand of resonance spruce fir on the market and the long period necessary for spruce to reach the optimum exploitation age led to a rapid depletion of the wood resources in the immediate proximity of the reserve, which means a higher pressure on the protected trees of the reserve.

This pressure is also induced by the fact that, in the area, there functions the oldest and biggest center for manufacturing musical instruments (Reghin town); thus, the main consequence is illegal cutting within the reserve perimeter.

The management of this reserve is subject to two forest plannings for the area of the Gurghiu Valley, where the reserve is located.

The first proposal comes from the Association of the Gurghiu Valley Communities and includes a local plan of tourist development of the area located in the proximity of the reserve.

The second proposal is made by Tg Mures Environment Protection Agency and it aims at integrating the Gurghiu Mountains (where the reserve is situated) in the framework of NATURA 2000 sit Călimani-Gurghiu. This approach tries to conciliate two goals of the sustainable management of nature reserve – protection of biodiversity and encouragement of the local population's economic development.

However, reconciliation impetuously supposes harmonization of the relations among the owner of the reserve land (Mayoralty of Ibanesti commune), the custodian of the reserve (Gurghiu Forest Ward), the managers of NATURA 2000 sit Călimani-Gurghiu (Environment Protection Agency), and the people living in the proximity of the reserve.

The population's perception regarding the protection and capitalization of forest ecosystems has to be firstly known by the authorities that take decisions in the area and then be used as a starting point for local planning.

The custodian of the nature reserve “Lăpușna Resonance Spruce Fir” presently considers the local population as a risk element due to their activities that have a negative impact upon the forest ecosystems.

However, local population, coming in contradiction with the goals of protection and conservation of biological diversity, represents a source of potential actors able to develop capitalization projects of local resources.

At the same time, only local people can select and capitalize the real resources of the territory they know (real material components, such as local products, fauna and flora elements etc. or the ideal values, such as authenticity, quality, historical and cultural patrimony).

## CONCLUSIONS

The management of the two nature reserves is part of a complex and distinct reality in both cases.

In the two case studies, we notice that the local actors directly influence the application of certain protection measures stipulated in the management plans.

Even if the legislative framework is common (being subject to the European regulations in the field), the management manner is different, according to the specific conditions of each reserve (either it is about the type of organization in charge with the custody of the reserve or about the administrative framing of the reserve or the local population's perception and involvement in the management of the reserve).

As the common point of the two nature reserves is the forest ecosystems, they represent the main objective of biodiversity conservation, as well as an important territorial resource. The main issue to be answered to in the two studied areas is finding a way for both capitalizing and protecting the forest ecosystems.

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