

Natural Reserve of Maramureş Land (Romania) - Protection and Development of Sustainable Tourism

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Abstract Since 1990, in Maramureş Land 13 areas or natural objectives (comprising 4405.7 ha) benefit from a protection status. Although the anthropogenic activities, in general, and especially the touristic ones, developed in this territorial frame or in its vicinity, generate a sequence of mutations which have a negative impact upon the area's ecosystems. This situation is the outcome of an inadequate territorial management, financial administration, monitoring and control, first of all due to the absence of a concrete administrative and financial support and to a partial legislation, to a large extent inoperative. On the other hand, due to the actual reserve system's inability to cover the increased number of territories characterized by outstanding touristic resources, other 10 similar objectives have been introduced on the "waiting list" in order to be declared protected areas. In this context, after a survey of the modalities regarding the reduction of the negative effects caused by tourism, the main principles and measures, which must constitute the foundation of the tourist development, and systematisation projects have been briefly highlighted, with a view to protect and preserve the landscapes, biodiversity and, implicitly, the extent of touristic attractiveness.

Key words Maramureş Land natural protected areas, touristic activities, protection, sustainable tourism

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Situated in the northern part of Romania, the geographical region of Maramureş is superposed upon the homonymous depression and the surrounding mountain frame (identifying itself from a geographical and a historical point of view with the well-known "Maramureş Land"). Vişeuului, Izei, Săpânţei and Marei rivers, whose common collector is Tisa River, which limits it at the north, drain it. It occupies a surface of 337 539 ha (53.54 % of the surface of Maramureş County). The Maramureş Depression is closed in the western and south-western part by the massifs of the Neogene volcanic group (Oaş, Gutâi, Văratec and Țibleş), by the crystalline mountains of Rodna and Maramureş (belonging to the northern group of the Eastern Carpathians), in south and east, the northern limit being given by the state border with Ukraine (154 km, whereof the Tisa River represents 40 %, i.e. 62 km).

Among the factors providing the diverse geographical structure of the region we can mention the complex origin (tectonics, volcanic dam and differential erosion), the varied relief (with heights comprised between 190 m in the north-western extremity of the region – Piatra locality, situated on the left bank of Tisa-, and 2 303 m – Pietrosul Rodnei Peak, in the south-eastern extremity of Maramureş County and the presence of a general collinear level at 750-800 m, in which the mentioned rivers carved the depression's basins at the level of some terraces – Vişeu, Ruscova, Petrova, Rozavlea-Dragomireşti, Borşa), and the geological structure (crystalline shales in the east, eruptive in west and sedimentary in the central part of the depression). Furthermore, there are certain other factors like the brown soils, the acid brown soils, the podsol with a high degree of moisture, the temperate continental climate characterized by rainy and cool summers (the average temperature for July did not exceed 20°C in the central part of the depression and 10°C in the high mountainous region)

and winters rich in snow, but less frosty. All these factors encouraged the development of some peculiar natural ecosystems. In those systems rare flora and fauna species coexist in a particular regional context or even unique at a national or European context, with structures and functionalities interrelated to the native ones as last vestiges of the initial natural landscapes. In the near future, their preservation and protection is a matter of extreme urgency, before the increased "aggressiveness", observed in anthropogenic activities, will affect them irreparably.

Maramureş Land can be reached by Baia Mare and Suceava airports (situated in the vicinity and which can be used as international airports though they are not international ones), the national highways DN18 (Vatra Dornei-Borşa-Vişeu de Sus-Sighetu Marmăţiei-Baia Mare), DN17 c (Năsăud-Moisei) and the railway lines which ensure the connection with Sighetu Marmăţiei (Bucureşti-Bistriţa-Salva-Sighetu Marmăţiei).

Preservation of Natural Values as the Basis for the Development of Sustainable Tourism

Tourism more than any other field of activity is dependent on the environment, this representing its raw material, its object and its field of activity and also constituting the bearer of its resources and the frame of the specific activities. The touristic potential being an essential part of the environment, its existence and evolution depend objectively on its quality, so it can be considered a possible index quality for its environment, in other words a barometer of its quality: it is intensely practiced where optimal conditions are fulfilled or it is diminished and gradually disappears in the areas where, for some reasons, one component or the other of the environment (landscape, air water, etc.) is degrading. The more diverse, complex and especially unaltered, with features close to the elementary ones, the touristic resources are, the higher is their touristic interest and the activities they generate are more attractive, responding to some varied touristic motivations.

Maramureş Land has a rich and complex touristic natural and anthropogenic patrimony (cultural, historical, ethnographical); as a consequence, it belongs to the counties with attractive resources of national and international interest. Among the touristic resources belonging to the natural fund are: the forestry fund (having important hunt-

Table 1 Reservations and natural objectives protected in Maramures Land

Nr. crt.	Name of rezervation	U.I.C.N. Category	Declaration deed (initial and reconfirmed)	Surface (ha)	Localization	Symbol	Administrator	Administrative Measures	Special interdictions
1	Pietrosul Rodnei-national park and biosphere rezervation which include :	II, IX m	OM nr. 7/1990	56 700	Bořsa town, Moisei commune	A	Romsilva O.S. Bořsa	In accordance with Ord. 43/1990 MAPP	The access in the reservation is permitted only on the basis of a special licence emitted by the administrator; to comply with the established routes; grazing and other activities in the buffer-zone and in the perimeter of scientific research
	Pietrosul Mare Resevation	I m	JCM nr. 1149/1932; HCJ nr. 37/1994	3300,0					
2	Cornu Nedeeii- Ciungii Bălăşinii (fauna rezervation of birch tree cock)	IVm	Dec. nr. 204/1977; HCJ nr. 37/1994	800,0	Bořsa Town	B	Romsilva O.S. Bořsa	In accordance with Ord. 43/1990 MAPP	Clearing of the juniper trees (<i>Pinus mugo</i>); grazing till 1 July; after this date the grazing is permitted only for big cattles and without herds' dogs
3	Salhoi andi Zămbroslaviile (limestone rocky places)	IV b	Dec. nr. 204/1977; HCJ nr. 37/1994	5,0	Săcel Commune	C	Romsilva O.S. Bořsa	II	Gathering scientific material without the agreement of competent authorities
4	Izvorul Albastru al Izei	IV m	Dec. nr. 204/1977; HCJ nr. 37/1994	100,0	Săcel Commune	D	Romsilva; O.S. Dragomireşti	II	Stalls' placement with a commercial purpose
5	Creasta Cocoşului (Cock Crest / Comb)	IV g	Dec. nr. 204/1977; HCJ nr. 37/1994	50,0	Deseşti Commune	E	Deseşti Local Council	Perimeter delimitation; establishing the access routes in reservation; the study of the rezervation preservation state; Sanitation of the protected zone	Grazing in rezervation; placement of touristic camps
6	Tătarului Gorge	IV g	Dec. nr. 204/1977; HCJ nr. 37/1994	15,0	Deseşti Commune	F	Deseşti Local Council	II	II
7	Vlaşinescu- Izvoare Oligotroph marsh	IV b	Dec. nr. 204/1977; HCJ nr. 37/1994	2,0	Deseşti Commune	G	Romsilva; O.S. Mara; Deseşti Local Council	In accordance with Ord. 43/1990 MAPP	Access in the rezervation's perimeter
8	Tăul lui Dumitru-Blidari Oligotroph marsh	IV b	Dec. nr. 204/1977; HCJ nr. 37/1994	3,0	Deseşti Commune	H	Romsilva; O.S. Baia Mare; Baia Mare Local Council	II	II
9	Ronişoara oak grove forest	IV f	Dec. nr. 204/1977; HCJ nr. 37/1994	62,0	Săpânţa Commune	I	Romsilva; O.S. Sighetu Marmaţjei	II	II
10	Poiana Brazilor marsh	IV b	Dec. nr. 204/1977; HCJ nr. 37/1994	4,0 (3)	Săpânţa Commune	J	Romsilva; O.S. Sighetu Marmaţjei	II	Access in the rezervation's perimeter
11	Coştiui larch tree forest	IV f	Dec. nr. 204/1977; HCJ nr. 37/1994	0,7	Rona de Sus Commune	K	Romsilva; O.S. Sighetu Marmaţjei	II	Extraction of the wooden mass without the agreement of the competent authorities
12	Pădurea Crăiască (The Royal forest of common oak and larch three)	IV f	Dec. nr. 204/1977; HCJ nr. 37/1994	44,0	Ocna Şugatag Commune	L	Romsilva; O.S. Mara	II	II
13	Tăul Morărenilor- Breb	IV b	Dec. nr. 204/1977; HCJ nr. 37/1994	20,0	Ocna Şugatag Commune	M	Romsilva; O.S. Mara; Şugatag Local Council	II	II
TOTAL				4405,7					

Note b- botanic; f- floral; g- geological; m- mixt; p- landscape; s - scientific

ing resources and constituting one of the fundamental resources of this region's economy - wood industry), mineral springs whose therapeutical value is well known (unfortunately only partially capitalized and on a local scale), fresh waters and natural and anthropogenic lakes (having both economical, through the piscicultural fund, and touristic importance), areas with landscape and climatic value favourable to the recreational tourism and to the rural one, as well as to the winter sports. This valuable touristic potential represents one of the most important potential reserves of development in the country provided that a responsible planning of the territory be made, the main preoccupation being in this case the protection, preservation, rehabilitation and capitalization of the

touristic resources, the natural ones, as tourism through its exigency represents a viable solution for maintaining the environment unaltered.

Due to the growing tendency of degradation of the natural ecosystems (powerfully modified under the pressure of the anthropogenic factor on the whole and partly through its components) the necessity of building protected areas has come to the fore¹ with the declared aim of maintaining an apparent status quo in the nature and of offering the possibility of perpetuating the threatened flora and fauna and repopulating other areas they disappeared from or were considerably reduced in number. This is the reason why defending nature and preserving its qualities has become a necessity for tourism, the actions un-

dertaken so far competing in the protection of the touristic resources in general, and of those in the protected areas, in particular.

In time, the protected areas have spread on an international level (in Europe, exclusively Russia – were, in 1998, about 1.400 protected areas, summing up to over 36.5 million ha) but also in Romania, where at the present moment, through central decisions (governmental) or of local authorities, over 560 territories have protection status (12 national parks, of which 3 are declared by UNESCO as biosphere reservations: Danube Delta, Retezat and Rodna, 2 natural parks: Bucegi-Leaota and Grădiştea Muncelului-Cioclovina, 44 scientific reservations, 373 preserving nature reservations, and 132 monuments of nature).

New Natural Areas Proposed to Receive the Protection Status

Our study highlights on one hand all the reservations and monuments of nature that have a protection status (see table 1) from Maramureş Land, and on the other hand the proposals of implementing this status to new areas (see table 2), especially those having a forestry fund (whose exploitation must be made after consulting the local authorities) (fig. 1).

Identifying natural areas in Maramureş Land with a highly valuable potential, has had the purpose to point out the necessity of protection and management by the local authorities but also to highlight an important potential of economical development through wood industry (by rational exploitation of the existent wood and the valorisation of the wood products) and various forms of tourism like bathing, hiking, winter sports, fishing, hunting, science and culture tourism, etc.

Thus, thanks to the Commission of Monuments of Nature of Romanian Academy and local authorities (Council, ROMSILVA and ASPM) a number of 13 different protected areas of national interest were built, summing up to a surface of 4405.7 ha i.e. around 0.69 % of the area (table 1). A series of studies made by specialized institutions (Institute of Forest Research and Planning in Bucharest, and ROMSILVA Baia Mare) has shown the necessity of expanding some reservations or including 3 new areas, summing up to a surface of 3847 ha, in this category (table 2). In addition to the mentioned areas, the Maramureş Council aims at declaring new territories as protected areas in the Maramureş Land (7 locations, summing up to 406.02 ha) in the near future (see table 3). It is of special importance to speed up the approaches regarding the declaration of an area of 670 ha in the upper basin of the river Tisa (extended on the territory of four states: Romania, Slovakia, Hungary and Ukraine) as "protected area of international importance", on the basis of a study financed by The Regional Centre of Environment Protection for Central and Eastern Europe. The Romanian part of this zone is entirely situated on the territory of Maramureş Land, having border with Ukraine of 62 km in length and 666 ha belonging to 7 administrative units (6 municipalities and 1 city), Săpânța, Remeți, Cămpulung la Tisa, Sarasău, Rona de Sus, Bocicoiu Mare and Bistra, i.e. Sighetu Marmăției. The fields are property of the state or of the public domain (managed by ROMSILVA and mayoralities). This territory (between the maximum altitude of 337

Table 2 Natural rezervations proposed in Maramures Land (study I.C.A.S. no. 47/1997)

Nr. crt.	Name of rezervation	Surface (ha)	Localization/ administrative unit	Administrator	Type	Symbol
1	Salhoi (extention)	220,0	Borşa Town	Romsilva; O.S. Borşa	b	a
2	Rezervation of mountain cock Cornu Nedeei-Ciungii Bălăşinii (extention)	3600,0	Borşa Town	Romsilva; O.S. Borşa	m	b
3	Ronişoara beech forest	27,0	Rona de Sus Commune	Romsilva O.S. Sighetu Marmăției	f	j
TOTAL		3847				

Note a- pleasure; b- botanic; f- forestry; m- mixt; p- landscape

m on Vişeu Valley and the minimum of 190 m downstream of Piatra) is made of low terraces and alluvial meadows sprinkled with dead branches (some partially clogged), mires and pools partially covered with forestry vegetation (48 %), while the agricultural fields spread on the remaining 45 % of it.

The main problems in this specific area, which call for urgent measures of protection, are:

- massive clearings made mainly after 1990, which accelerated the erosion processes, gliding on some areas and powerful high floods that modified the riverbeds on some parts of the rivers Iza, Săpânța and Vişeu, representing a potential flood danger for some settlements (Sighetu Marmăției, Teceu Mic and Remeți);
- considerable reduction of habitat of many flora and fauna species which live in wet areas and the violation of the natural hunting equilibrium and trophic chains, as the result of the mire draining processes (started before 1989) and massive clearings (after 1989);
- danger of polluting the phreatic water and implicitly the drinking water, because of some factories and public institutions (Borşa Mining, hospitals from Borşa, Vişeu and Sighetu Marmăției). Although tourism in Maramureş Land has tried to integrate (through specific means) into the protected natural areas (whose entertaining, esthetical, educational and scientific values represent major touristic objectives, focusing touristic flows on the measure), the actual situation of the territories with protection status is characterized by uncertainty and lack of financial support. Organizing, managing and monitoring system of information has been grafted onto an afunctional legislative frame (Law on environment protection No. 137/1995 is limited to establishing general regime of the protected areas and monuments of nature, leaving it for a special law to specify

the typology and the specific regimes of administration and protection).

Principles and Measures for the Development of Sustainable Tourism in the Frame of Natural Areas and Reduction of the Impact of Anthropogenic Activities

The touristic capitalization of the protected areas in Maramureş Land has various and complex forms, and their arrangement for tourism raises some problems related to the special status as well as to their structure, especially in the case of the national park Pietrosul Rodnei: a) the untouched zone – the scientific zone of integral protection on a long term base, which permits the preservation of the biodiversity, the surveillance of the less disturbed ecosystems and the development of scientific research, information and ecological education activity; b) the buffer zone, with differentiated protection regime, where different human activities can be developed; c) free access zone (ecological reconstruction and restoration zone, where non-polluting economical activities can be carried on).

The touristic equipping of every protected area differs according to its function and importance for tourism (landscape value, number, variety, complexity, grouping and position in territory) with respect to the entertaining or natural curative resources and endowments (often scarce, or absent) not framing to the limits imposed by the respective ecosystems. Disregarding the category and importance for tourism of a specific protected area, each of them has to have a minimal base infrastructure (way of access, paths and marked alleys,

rest places, diverse equipment and installations of touristic catering, arrangements for visiting different touristic objectives etc).

In this context, the protected areas could become places for developing a series of touristic and scientific activities whose performance does not affect the environment and is not in conflict with their status. Among these activities we include: mountaineering, caving, hiking, cycling, boating (in small groups), flora and fauna researching,

the water coming from the lodging units in the protected areas;

- equipping the polluting units, placed in the proximity of the protected areas, with filters and dust removal devices; improving fire installations in the non-ferrous metal processing units (PHOENIX Baia Mare), as well as in other industrial fields;
- urgent rehabilitation of the agricultural and forestry fields, affected by streams, high floods and sliding (trees broken by wind);

gies, which ranges in a broader regional context, the isolated and partial planning actions excluding the achievement of a long lasting tourism.

Thus, the categories of natural protected areas (proposed for protection) determine the adoption of some planning and systematization projects (to lead to effective protection of these territories and to avoid the negative impact generated by economical and touristic exploitation) which require the application of the following principles and measures:

■ **Table 3** Rezervations and natural objectives proposed for protection in Maramures Land

Nr crt	Name of rezervation	Surface (ha) / length	Localization	Type	Symbol
1	Arcer Țibleș Bran	150,0	GroŐii ÚibleŐului- DragomireŐti	m (g/f/p)	1
2	Farcău- Mihailec Peak	100,0	Repedea Commune	M (g/f/p)	2
3	Tomnatec- Sehleanu glade with narcissus	100,0	Repedea (M-ții Maramureșului) Commune	M (f/p)	3
4	Piatra Rea	50,0	Borșa Town (M-ții Rodnei)	M (g/f/p)	4
5	Iezerul Mare Marsh	5,0	Desești Commune (Gutâi Mountains)	b	5
6	Bătrâna Spring (tributary of Dragoș Spring)	-	Moisei/Săcel	M (g/p)	9
7	Șolovan Hill	1,02	Sighetu Marmației		12
TOTAL		406,02 ha			

Note a- pleasure; b- botanic; f- forestry; m- mixt; p- landscape

landscape painting and photographing, visiting eco-museums in the protected areas and cultural, historical, and ethnographical sites in the settlements of free access zone, mastering and practicing some traditional crafts (pottery, artistic wood carving, wattle of twigs, reed, osier etc.), using scientific materials and watching documentary movies in the centres for tourists, etc.

Knowing all the aspects in which touristic activities affect the environment plays a decisive role in establishing the strategies of organization and the policies of future development. Tourism can have a negative impact upon the environment if the capacity of loading (supporting) and the ecological characteristics of each specific area are not taken into consideration. In order to protect and preserve nature and reduce the processes of destruction and degradation of the natural patrimony, caused by touristic and social-economical activities in the protected areas, the following measures must be taken:

- well-balanced valorisation of all natural resources;
- sorting out and recycling glass, metal, paper, plastic, textile offal; cleaning

- prohibition of grazing in the alpine laps; repopulating the area with the juniper tree (*Pinus mugo*);
- prohibition of unauthorized timber cutting and plant (declared monuments of nature) gathering;
- reduction of the animal load (especially in the buffer-zone and free access zone), in accordance with the plan of regenerating pastures and hay fields;
- arranging camping places, shelters and belvedere points, revising itineraries and touristic marks;
- assurance of a rational exploitation and management regime for forests of group I (with a main role in protection and a secondary role in production) in accordance with the forest regulations;
- setting up several "protected landscapes" on a local plan, as territories with special value from esthetical point of view or with aspects typical to a certain geomorphic complex whose natural or semi-natural character should be kept as such.

The maintenance of all the touristic functions of the natural protected areas must begin with the elaboration of some developing and planning strate-

- Finalization and consolidation of the juridical status of protected areas through the elaboration of concrete legislative dispositions (and the revision and completion of Law 137/1995); classification of all the protected areas in accordance with the categories proposed by UICN (International Union for Preservation of Nature): I. Scientific reservations/ Integral natural reservation; IV. Reservations for preservation of nature /divided natural reservations/fauna sanctuaries; II. National parks; III. Monuments/distinguished natural elements; V. Terrestrial and marine protected landscapes; VI. Reservations of natural resources; VII. Anthropological reservations/multiple biological regions/zones for natural resources management; VIII. Natural regions arranged for multiple use/zones of natural resources management; IX. Reservations of the biosphere; X. Natural goods of world patrimony;
- Assessment, evaluation and clear establishment of each protected area, of all the potential resources that have some value in tourism, as well as of exceptional natural objectives (that reclaim special protection and monitoring), with the participation of interdisciplinary teams of specialists;
- Real evaluation of the capacity of ecological support of different zones in the national park Pietrosul Rodnei and of natural reservations for delimiting the quality categories at international standards level;
- Accurate analysis and evaluation of the degree of exploitation of resources in close connection with the standards and regulations, regarding the environment protection;
- Making or updating cadastral maps of the protected areas, with the rigorous delimitation of the protected area on qualitative categories;
- Assurance of monitoring programs for the information referring to the protected natural areas, with regard to the access and circulation of tourists.
- Assurance of working conditions in partnership and multi-disciplinary teams, a better cooperation with re-

gional and local organizations with touristic profile, with the local administration and with the population and tourists, to whom the role of tourism must be explained, and the gradual adoption of a way of life compatible with the international norms of environment protection;

- h) Prospecting the internal and international touristic market and touristic demand for such a product, having in mind development of activities and equipment with touristic destinations (these will be made on a scale and in an architectural style in full harmony with the local environment, by using building materials traditional for the zone);
- i) Usage of silent and non-polluting means of transport (using alternative energetic sources), that would minimally exploit the existent resources and would contribute to the preservation and the protection of environment;
- j) Assurance of the financial support necessary for the organization and functioning of the natural protected areas, in a first stage through allocating the necessary funds from the budget, then through giving this responsibility to the local administration, and finally through financing the protected areas by their own resources (through a modern and good management and a higher economic valorisation), also by financial contributions of touristic agencies and firms. It is necessary to support the development of the main private touristic services, which could constitute the basis for self-financing and the gradual detachment from the governmental, budgetary resources;
- k) Complete report of promotional strategy, in the context of initiating new specific touristic products (on the basis of amplification of educational, didactic and scientific role) and usage of a new technical management;
- l) Training specialists in the fields of environment engineering and ecology;
- m) Elaboration of some studies and projects that refer to preservation, recuperation and valorisation of natural resources with protection status and identification of new areas that need temporary or permanent protecting measures.
- n) Correlation of economical management and territory arrangement programs with the characteristics and requirements of ecosystems with the aim of maintaining and recuperating the natural equilibrium;

o) Adoption of regulation for practicing a curative tourism in the natural protected areas, including the achievements of some pilot-programs that assure the touristic and ecological efficiency of this type of tourism.

The practical achievement of these social-economical desiderata requires making and applying certain plans and touristic systematization projects, with scientific basis and political and financial support, regarding all the factors implicated in tourism development, as well as encouraging the local population to contribute to the development of touristic activities in these areas.

The protected areas in Maramureş Land could represent significant resources of tourism, provided that the process of planning, systematization and exploitation of these areas is in harmony with the policy of balanced and long-lasting development of the region, which in turn, must be reevaluated and updated at average intervals of 4-6 years. In addition, the valorisation and the balanced exploitation of natural protected areas can initiate an active and constructive cooperation between local, regional, and national administration. It can also lead to establishment and assumption of responsibilities by a flexible administration, based on an interdisciplinary team, made of specialists who could coordinate the functioning regime of these territories, assuring a modern management on ecological principles and a maximum of economic efficiency.

In this context, the planning and valorisation of these territories, from a touristic point of view, becomes a continuous process, subjected periodically to impact analyses. Thus, the touristic activities will adapt and form their functions to suit the specific situation of each protected area.

Conclusion

In the text above, we have analysed the actual status of the protected areas in the region. However, we also have to underline that, nowadays, despite the numerous published studies on the improvement and development of protection of natural sites, there is only little care for them in the field. The continuous degradation of the natural areas of great scientific and touristic value is a cruel reality in the context of the wild capitalism which flourish now in our country. Therefore, the specialists of this generation (geographers, biologists a.s.o.) have a scientific mission of an utmost importance. If the remaining valuable natural sites are lost in the pres-

ent economic chaos, our days will perhaps be known in the history of Romania as "the climax of natural destruction".

Notes

¹ In Romania, preserving nature actions have taken place ever since the reign of Stephen the Great (1457 – 1504) in Moldavia, when the so called "branişte" (fenced - in districts) were founded. These were territories wherefrom no wood or grass could be harvested, and hunting and fishing were totally forbidden. The first national park (Retezat) was founded in 1935 (13.000 ha) and includes semi virgin forests, alpine landscape, ice lakes and pails, as well as different species of flora and fauna.

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