

# DIFFERENCES IN THE NATURAL AREAS PROTECTION IN THE CZECH REPUBLIC AND ROMANIA: A SOCIOECONOMIC VIEW

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## **Abstract**

The paper is focused on the differences in the natural areas protection in the Czech Republic (CR) and Romania, considering the socioeconomic perspective. Further, the main aspects of nature conservation in both countries are discussed. They result from differences in economic and political development, and different natural conditions in both countries. The total area under protection in Czech Republic is 1.28 million hectares (16.2% of the territory) and in Romania 5.57 million hectares (23.4%). In both countries, the nature conservation is focused mainly on large-scale protected areas. In these areas there are constant interactions between local people and the natural environment. Therefore, such areas represent places with high social and economic value. In the CR, the large-scale protected areas include mainly national parks and protected landscape areas. In total these protected areas cover about 15.5% of the territory. In Romania national and natural parks cover 4.6% of the territory (not including the Danube Delta). The article deals with the European context of nature conservation and outlines specific differences in the nature protection legislation in both countries. It also focuses on organizations dealing with large-scale protected areas management and problems resulting from the interaction of nature conservation and local residents.

**Key words:** environmental economics, recreation function, natural areas management, Czech Republic, Romania

## **Introduction**

The protection of natural areas remains a persistent effort on European level, and significant changes were made on the subject of their objectives. Maintaining the integrity and functions of natural areas needs constant protection efforts, and the protected areas (PAs) are the foundation of conservation (Joppa et al. 2008). Currently, the nature conservation is focused mainly on large-scale protected areas (Cantu-Salazar et al. 2010) and the main priority is considered the environmental protection. But the idea of classic conservation is now enriched by the concept of sustainable development (Brundtland 1987) which focuses not only on environment, but on economics and social pillars.

Europe faces a new paradigm for PAs which starts to change the standard environmental policies. The new concept accepts PAs not just as conservation units but as genuine 'living landscapes' (Mose and Weixlbaumer 2007). In this ways activities such as tourism, education, forestry or even agriculture are integrated and supported in order to guarantee the sustainability. The European Habitats Directive (92/43/CEE) specifies that conservation measures should take into account the social and economic aspects at local or regional level.

The idea of nature protection as an instrument for local or regional development can be easily assimilated from the socioeconomic perspective if we consider the protected area as a commodity used to produce, for example, tourism experiences (Byström and Müller 2014). It is obvious that the main benefits of PAs consist in preserving biodiversity, wilderness and wildlife habitat. But PAs benefits can be expanded to generate incomes from sales of products or services, opportunities for education, recreation and tourism (Kettunen and ten Brink 2013). The PAs recreation function is one of the key socioeconomic functions (Zandersen and Tol 2009), nevertheless still generates debates.

Two different European countries were selected for the current analysis – the Czech Republic (CR) and Romania. The paper compares some selected socioeconomic aspects regarding natural areas protection focusing on the PAs management and financing problems, along with the aspects concerning the interaction between nature conservation and local communities.

## **Material and methods**

Relevant data material was obtained from a secondary research, on the basis of an analysis of available scientific literature dealing with socioeconomic value and benefits of protected areas. National and European database and statistics on PAs were consulted, offered by sources such as: World Database on Protected Areas (WDPA), United Nations List of Protected Areas (UN List), Official website of European Union, Czech Statistical Office (CSO), Digital Register of the Nature

Conservancy Czech Republic (DRNC), financial and accounting reports from the Ministry of Finance (for the CR), National Statistical Institute, National Forest Administration (RNP), Ministry of Environment, Water and Forests, Natura 2000 (for Romania).

There were made basic comparison at national level and assessment of differences concerning European nature protection legislations, economic and policy development. The data were processed by scientific methods such as analysis, synthesis, comparison and economic analysis in order to obtain relevant results. The graphic processing of results was performed using Microsoft Office Excel.

## Results and discussion

Nowadays, society is extremely focused on developing a network of protected areas and on its sustainable management. Protected areas can be divided into national PAs which are established at national level and internationally recognized PAs which are set out in the framework of international and regional agreements, conventions or programs. The most frequently used classification includes the categories of the International Union of Conservation of Nature (IUCN), but at regional or continental level appear new and more flexible frameworks (e.g. pan-European networks Natura 2000 or Emerald).

According to the World Database on Protected Area, about 209,429 PAs from more than 193 countries and territories cover around 15.4 % of the world's land and 3.4% of the global ocean extent (Juffe-Bignoli et al. 2014). The world's protected areas have an extent of 32,868,673 km<sup>2</sup>. Around 65% of protected sites are located in the European region, but the protected European surface covers only 12.9% of the total world protected space (Deguignet et al. 2014).

Fig. 1 shows the proportion of sites and area protected in the world. The global expansion of PAs shows not only the current state of environmental conservation but also reveals the touristic potential of PAs, considering that eight billion tourists visit PAs every year (Balmford et al. 2015).

For analysis there were selected two countries with different economic and political development – the Czech Republic and Romania.

Tab. 1 shows the main socioeconomic characteristics of selected countries.

Both are former communist countries but the European Union integration lead to significant improvements in the quality of the environment. In both countries, the nature conservation is focused mainly on large-scale PAs with high forest cover: national parks and protected landscape area (PLA) in the CR, national parks and natural parks in Romania. But their protection network include small-scale PAs too, such as nature reserve or national and natural monuments. The total area under protection in the CR is 1.28 million hectares (16.2% of the territory) and in Romania 5.57 million hectares (23.4%).

In Czech Republic forest ecosystems occupy most of the territory of PAs: 753.4 thousand ha, which represents 28.2 % of the area of national forests. Protection of PAs is carried out by Act no. 114/1992 Coll., on the Nature and Landscape Protection. Forest management in addition to this Act is governed by management plan and Act no. 289/1995 Coll., Forest Code. The nature and landscape protection in large-scale protected areas is supervised by the government and the central authority is the Ministry of the Environment.

In Romania, the large-scale protected areas consist in national parks and natural parks. The main environmental regulations are the Environmental Protection Law (137/1995), the Law of the territory planning (5/2000) and the Forest Code (46/2008) with all the amendments. The central authority in nature conversation is the Ministry of Environment, Water and Forests.

Tab. 2 shows the main characteristics of large-scale protected areas in the CR and Romania.

In the CR, there are 4 national parks: Šumava National Park (SNP), Krkonoše Mountains National Park (KRNAP), Podyjí National Park (PNP) and Bohemian Switzerland National Park (BSNP) and 25 protected landscape areas. Each national park and PLA is managed by its own administration. These non-profit organisations are supervised by the Agency for Nature Conservation and Landscape of the Czech Republic (ANCLP). In the CR, the state budget represents the main source of funding administrations of large-scale protected areas, but there are additional sources such as European Community, the State Environmental Fund, regional administrations, donations or other sources.

Tab. 3 shows the most important socioeconomic information about the National Park Administrations in the CR. The report reveals that most of the costs are related to staff payment and forest management services. One key indicator is represented by the ratio between PA area and the number of employees which is around 150 ha/employee (excepting the largest park, Šumava NP, which has a ratio that exceeds 250 ha/employee).

Tab. 4 displays the most important socioeconomic information about the protected area in Romania. Most national and natural parks from Romania have large areas, nearly half of them exceeding 50 thousand ha. But the funding of PAs is quite low, considering that the majority of PAs are placed

below 10 euro per ha. The largest PAs are more disadvantaged because the larger the PAs are the lower the funds are available per hectare. The underfunding forces PAs administrations to limit the number of staff. There are higher ratios between PA area and the number of employees (the average is above 3000 ha/employee) compared to the situation from the CR. Romania still struggles to find a solution for funding PAs administrations and till now there have been no funds allocated from the state budget (excepting the Danube Delta). Most of the PAs are currently managed by the National Forest Administration, NGOs and county councils. Further, the rapid growth of PAs due to addition of Natura 2000 sites led to confusion regarding the protection status and increased the financial pressure. In Romania Natura 2000 sites cover 23.4% of the territory, compared to only 4.6% of national and natural parks (7.0% including the Danube Delta), but there is a 96.19% overlap with other PAs. Recent studies (Iojă et al. 2010) reveal the declining efficiency of Romanian PAs after the creation of the Natura 2000 network. This decrease is amplified by additional environmental issues, such as high disturbance rates, generated by rapid ownership and institutional changes (Knorn et al. 2012). The revival of PAs is possible only solving the funding problem, and solutions can be found by assessing the economic value of such areas (Dumitraş et al. 2011). According to WWF, Romania groups 65% of the European (without Russia) virgin forests and has the largest European populations of large carnivores. This fact reveals a great potential for tourism and recreation activities, which could partially solve some PAs funding issues.

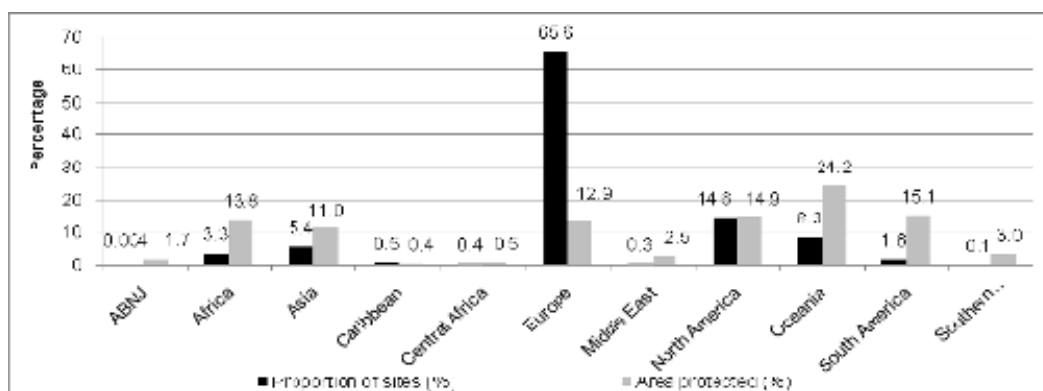


Fig. 1: Percentage of the protected areas' network among global regions  
 Note: ABNJ – Area beyond national jurisdiction, Source: Deguignet et al. 2014

Tab. 1: The socioeconomic characteristic of the Czech Republic and Romania

Item	Unit	Czech Republic	Romania
Geographic size (2012)	km <sup>2</sup>	78,866	238,391
Population (2012)	number	10,505,445	20,095,996
Population as % of total EU population	%	2.1	4.0
Gross domestic product (2012)	billion €	152.926	131.579
EU member country since	year	2004	2007
Political system		parliamentary republic	semi-presidential republic
Currency		Czech koruna (CZK)	Romanian Leu (RON)
Schengen area member	Yes/No	Yes	No
Forest cover	%	34	27
Total area under protection	ha	1,278,685	5,573,265
Percentage share of PA on total area	%	16.18	23.38

Source: European Union 2015; DRNC 2015; Romanian Annual Statistical Report 2013

Tab. 2: The main characteristic of large-scale protected areas in selected countries

Item	Czech Republic		Romania	
	National parks	Protected landscape areas	National parks	Natural parks
Number of areas	4	25	13	15
Total area (thous. ha)	119.5	1,086.7	316.9	772.8
% of country area	1.51	13.77	1.33	3.24
Forest land (thous. ha)	104.5	588.5	247.2	517.8
Forest cover (%)	87.7	54.2	78	67

Source: Ministry of Agriculture 2014; Romanian Annual Statistical Report 2013

Tab. 3: Selected information of the Czech National Park Administrations (2012)

Item	Units	Šumava NP	KRNAP	Podyjí NP	BSNP
NP area without buffer zone	ha	68,064	36,327	6,276	7,933
Area of forest land	ha	59,853	31,779	5,285	7,621
Forest cover (%)	%	87.9	87.5	84.2	96.1
Assets	thous. €	116,435.24	101,724.73	14,648.73	18,406.50
	€/ha	1,710.67	2,800.25	2,334.09	2,320.24
Expenditures	thous. €	17,246.74	13,625.98	1,918.33	4,002.42
	€/ha	253.39	375.09	305.66	504.53
Revenues	thous. €	17,224.80	14,881.09	2,045.44	1,228.84
	€/ha	253.07	409.64	325.91	154.90
Income from transfers	thous. €	9,326.43	7,164.72	1,501.67	-
	€/ha	137.02	197.23	239.27	-
Profit/loss	thous. €	-21.94	1,255.11	127.11	-2,773.59
	€/ha	-0.32	34.55	20.25	-349.63
Staff costs	thous. €	4,659.14	3,899.84	675.58	764.03
	€/ha	68.45	107.35	107.64	96.31
Other services	thous. €	4,877.35	4,338.61	516.73	2,374.05
	€/ha	71.66	119.43	82.33	299.26
Number of employees	number	267	245	44	48
	ha/employee	254.92	148.27	142.64	165.27

Source: Ministry of Agriculture 2014; Ministry of Finance 2015

### Conclusion

The large-scale PAs have a great potential for tourism and recreation activities in both of the selected countries and such activities can support PAs development. A responsible environmental management of tourism can produce consistent income for PAs and the recreation activities can raise the awareness of environmental problems. Surely, limits and regulatory measures should be applied in order to compensate some negative impacts on PAs.

The results show that despite the different economic and political development, the nature conservation is built on the same principles in both selected countries. Obviously there are some differences too: the Czech Republic exhibits a more solid funding framework and PAs are better covered with personnel, while Romania has a larger percentage covered with PAs but it faces major funding issues.

Tab. 4: Selected information of the Romanian National and Natural Parks (2010)

Protected Area	Area [ha]	Funds [euro/ha]	Area/employee ratio [ha]
Muntii Macinului National Park	67,363	11.04	2,907
Buila Vânturarita National Park	4,186	48.52	261
Cheile Bicazului-Hasmas National Park	7,976	32.88	665
Ceahlau National Park	8,396	37.08	446
Gradistea Muncelului-Cioclovina Natural Park	40,009	6.8	5,001
Balta Mica a Brailei Natural Park	20,461	19.68	1,461
Vânători-Neamt Natural Park	30,818	20,74	3,082
Piatra Craiului National Park	17,937	16.77	897
Muntii Calimani National Park	137,446	3.37	7,636
Lunca Muresului Natural Park	17,697	16.63	2,950
Defileul Jiului National Park	11,127	15.44	742
Retezat National Park	43,316	12.53	902
Cozia National Park	17299	12.57	2,472
Danube Delta Biosphere Reserve	660,081	7.85	2,201
Muntii Bucegi Natural Park	238,745	7.18	1,761
Cheile Nerei-Beusnita National Park	37,100	7.7	1,124
Comana Natural Park	25,338	7.5	5,068
Semenic-Cheile Carasului National Park	36,664	7.3	1,111
Domogled-Valea Cernei National Park	60,100	6.86	2,146
Putna-Vrancea Natural Park	38,204	6.53	4,776
Muntii Rodnei National Park	46,399	5.81	967
Muntii Apuseni Natural Park	96,282	4.27	8,204
Muntii Maramuresului Natural Park	148,850	2.84	12,404
Portile de Fier Natural Park	128,765	2.33	8,584
Average values	80,856.63	13.34	3,240.33

Source: Iojă, et al. 2010

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Act No. 114/1992 Coll. on the Nature and Landscape Protection, as amended.

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### **Souhrn**

Příspěvek zkoumá rozdíly v ochraně přírody a krajiny v České republice a Rumunsku z pohledu socioekonomického. Management chráněných území čelí v současné době novému paradigma, které vnímá ochranu přírody jako nástroj, který by mohl přispívat k místnímu, případně regionálnímu rozvoji. V České republice je chráněno více než 1,28 mil. hektarů (což představuje 16,2 % z celkové rozlohy území) v Rumunsku je pod ochranou 5,57 mil. hektarů (23,4 % z celkové rozlohy státu). V obou sledovaných zemích se ochrana přírody a krajiny zaměřuje především na velkoplošná chráněná území s vysokým procentem lesnatosti, které představují velký potenciál pro cestovní ruch a rekreační aktivity. Výsledky ukazují podobnosti týkající se zásad a principů, kterými se řídí úsilí v ochraně přírody a krajiny obou zemích a také poukazují na některé rozdíly v oblasti managementu, správy a financování chráněných území.

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