

The Necessity to Expand the Surface of Protected Areas in Romania

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Abstract: The protected natural areas are those areas where we find the most representative and valuable elements of the natural heritage (heritage). On the Globe there are a multitude of categories, of ranks of protected areas, from nature monuments, to National Parks and Biosphere Reservations, from areas under one hectare to hundreds of thousands of square kilometers. The EU has in the field of nature protection the European Ecological Network *Natura 2000*; this network consists of more than 26 000 protected sites covering approx. 20% of the EU's land area. This is the largest, more complex network of environment protection in the world. It provides protection for endangered European species and habitats and, indirectly, contributes to the prosperity of the countries on whose territory it is implemented, through the ecological services provided. In Romania, at the level of 2018, the total protected areas represent about 23.65% of the total area; compared to other European countries, the area of these protected areas should be increased. But beyond the comparison with other countries, the need to increase the area of protected areas lies in the fact that, in the context of climate change on Earth, the only way in the future to safely address their effects is to protect the environment and to reduce as much as possible the anthropic "footprint".

Keywords: sustainable development; protected areas; natural capital

Introduction

Starting from the invention of the steam engines, the entering into the industrial era and especially within the last 50 years, human activities have changed ecosystems much faster and more than in any other comparable period in the history of the Earth, as more than 60% of the world ecosystems are already damaged (Millennium

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Ecosystem Assessment, 2005). Wilson (1999) considers that we are in the middle of a mass extinction, known by the scientists as the sixth such event in the history of life on Earth and the only one that is caused by a species: ourselves. Human people threaten to have a proportional impact, though slower, to the one of the large asteroid that landed in the western part of Caribbean Islands and destroyed the dinosaurs – and approximately half of the other living forms 65 millions of years ago. Some have even considered that we have entered a new geological era, the Anthropozoic, due to the fact that the human species has a very large power of modifying ecosystems and it makes this thing with an extraordinary speed. Things that nature makes in millions of years are modified by people in days, years.

As a result, few species can adapt, most of them being subjected to stress that can lead, in a short time, to their extinction or to the drastic decrease in their individuals number.

Due to this, at global level, from approximately 20 - 30 years, one has insisted on the creation of protected areas in all states, where biodiversity would be kept, developed, areas which, in time, would even lead to an expanding of the areal of some species that have been extinct from many geographical spaces due to anthropic causes. This is the reason why, on global scale, a series of measures have been made regarding the environmental policies.

Rising the Question Regarding the Creation and Expanding of the Protected Areas at International Level

Nowadays, there are a large number of international instruments which aim at conserving species and/or natural habitats, most of them being bilateral or regional. The internationalization of the movement in favor of expanding protected areas has created numerous opportunities and has modified many practices that were previously known, which have proven to be important for the continuous expansion of the protected areas' systems (Heinen, 1996).

Amongst the main international regimes that were subjected to the ratification or acceptance of all United Nations' members, we recall:

- Man and the Biosphere Programme (MAB) was designed in the late 1960's under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and, by 1971, it had been implemented with general objectives that study the human relations with the biosphere, especially for the study

of the human impact on long term and the conservation of sustainable development. A major objective of MAB, from its beginnings, has been the development of a global network of biosphere reserves and, nowadays (2019), there are 701 biosphere reserved designed by MAB in 124 countries on all continents (www.unesco.org). Based on the MAB criteria, biosphere reserves are set in ecosystems that are representative to research objectives, with few secondary objectives including the conservation of the traditional forms of land utilization, the dissemination of knowledge in order to manage resources and the promotion of cooperation in order to solve the problems regarding the resources. The MAB had existed for four decades and, from many perspectives, it set additional standards for the management of the internationally protected areas.

- The Ramsar Convention (Iran, 1971). The convention regarding the internationally significant wetlands, especially for the aquatic birds habitats, has been the truly first international convention promoting the protection of natural areas, and, from many perspectives, it remains the most important. Ramsar defines very broadly the wetlands, in order to include forests, fens, bogs, marshes, swaps, as well as the marine areas where the flux doesn't pass over 6 meters depth. Thus, the Convention was progressive regarding the inclusion of the marine areas in the proximity of the shore. At the moment of its elaboration, few nations created marine reserves, but this trend has considerably increased ever since and many coast areas are now listed as Ramsar sites. Various articles in the Ramsar Convention still express the responsibilities of parts regarding the conservation of wetlands. For example, article 4 encourages the parts in creating wet reserves irrespective of their listing as sites or not, and train people to research and manage wetlands, while article 5 instructs the parts to consult, regarding the implementation of the Convention, a significant disposition for the sites that cross over international borders. Number of Contracting Parties: 170; Number of Ramsar Sites: 2,354; Total surface of designated sites: 252,537,889 ha. (<https://www.ramsar.org/>).

- The International Convention for the Protection of World Cultural and Natural Heritage (The World Heritage Convention or WHC) came into power in 1975, aiming as preserving both natural and cultural areas with a special universal importance. As a result, parts admit that many sites are significant to the world heritage and not only for the heritage of the countries that might include them (<https://whc.unesco.org/archive/convention-en.pdf>).

- The Convention on the Conservation of Migratory Species of Wild Animals, also known as CMS or the Bonn Convention came into power in 1979, but it has

attracted less parts than the other conventions described here, partly due to the fact that many western nations were already part of an older regional convention. Most of the parts that joined the CMS are located in the eastern hemisphere, and, recently, a series of countries in Latin America have ratified it. CMS focuses on wildlife, as it is more of a convention of species based preservation than a protected area based one. (<https://www.cms.int>)

- The United Nations Convention on Biological Diversity (CBD) (1993) is by far the largest of the international preservation agreements. Article 8 of the Convention (*In situ* preservation) asks the parts to appropriately manage the significant biologic diversity, irrespective of the fact that it is or not included in the network of protected areas, and to promote the general protection of ecosystems. Final clauses of the article instruct the parts to elaborate a regulatory legislation proper for the preservation of the endangered species, to financially collaborate for the *ex situ* preservation and to regulate the processes that can affect the biological diversity (<https://www.cbd.int/>).

While a part of the literature regarding the conservation of biodiversity and the Convention regarding the biological diversity debate on the significance of the *ex situ* preservation as seed banks, zoo's, botanical gardens etc, science and a large part of the society admits that the *in situ* preservation of species – and of the complexes that naturally provide them shelter – is a high more efficient method of preserving biodiversity, even from the perspective of costs. The *in situ* preservation has the advantage of maintaining the ecologic phenomena intact (or at least partially) and allows the continuation of the evolution game, while the *ex situ* conservation provides, in the best scenario, a short term tampon.

It is known that natural ecosystems bring significant values to human societies, but there hasn't been the same recognition of protected areas as institutional mechanisms for the preservation of natural ecosystems (Lopoukhine, 2012).

- Protected areas, when included in the arrangement plans of the territory, as a part of larger preservation networks, provide practical solutions for the efficient approach of biodiversity loss, helping the society against the effects of climate changes and maintain the critical ecosystem services all societies depend on.
- The global network of protected areas is by far the most expanded system of natural resources management, contribution to the preservation of some ecosystem services, such as stocking carbon. Protected areas as estimated preservers for deposits larger than 312 GT of Carbon or 15% of the global carbon deposits (Kapos

et al., 2008). For example, protected areas and local reserves in the Brazilian Amazon, will estimably prevent the deforesting of 670.000 km² by 2050, representing 8 milliards of tons of avoided carbon emissions (World Bank, 2010), conducted by a mosaic efficient government management, varying from national agencies to the indigenous populations and the local communities in their territories.

- Protected areas can maintain the integrity of the ecosystem and reduce the risk and the impact of extreme climate events, such as storms, drought and the increase of the sea level. For example, wetlands, the mangroves, the coral reefs, the barrier beaches and the sand dunes protect the coasts against storms and floods (Dudley et al., 2010). According to Quintero (2007), such ecosystem approaches can complete or even replace the more expensive infrastructure investments made to protect human settlements. Climate change are expected to lead to an unpredictable and sometimes severe lack of food and to the spreading of some illness vectors. The improvement of the protected areas and habitats' management can contribute to the decrease of the communities' vulnerability through the preservation of the essential natural resources and of the agricultural productivity and through the protection of ecosystem services, such as water services (Lopoukhine et. al., 2012).
- The increasing concern regarding the water deficit provides a strong argument for the protection and the improved management of the natural habitats in order to maintain water resources both for agriculture and for household use (Dudley et al., 2010, Stolton et Dudley 2010, World Bank, 2010).
- Natural ecosystems can contribute to the maintenance of water quality through filtration, the renewal of underground waters and the maintenance of natural flux. One third of the largest cities in the world, including New York, Sofia, Bogotá, Melbourne, Tokyo and Sydney receive a significant part of the drinking water directly from the protected forest areas (Dudley and Stolton, 2003).
- Protected areas ensure the water supplies for the agricultural production in countries such as the Dominican Republic, Canada, Madagascar, Venezuela, Indonesia, Ecuador, New Zealand a.o. We give the example of the Bogani Nani Wartabone National Park (the former Dumoga Bone), 300.000 hectares wide in Indonesia, which has been created to protect a major irrigation project designed for the increase of the rice production (MacKinnon, 1986).
- Protected areas can include the original locations for some culture plants such as barley, sorghum and other cereals, acting as natural reservoirs for a significant biodiversity from the agricultural perspective.

- Protected maritime areas have been designed for the long term preservation of biodiversity, but many of them also contribute to the sustainable fishing and to the local living means. Research made in 80 maritime protected areas has shown an increase in the population of fishes and in their sizes within the reservations compared to the surrounding areas or in the same area before the creation of the protected area; fishes within the MPA help the recreation of the proximal fishing areas (Halpern, 2003).

The literature in the field of preservation biology, a field known since the 1980's, includes hundreds of well-made studies in problems such as the setting and the placement of reservations, the way of prioritizing the protected areas based on scientific criteria, the optimal dimensions of the reservations, the utility of maintaining the natural corridors for the promotion of gene flows between reservations, the placement and the utilization of tampon areas etc. (Primack, 2006).

There are few global direct comparisons between the investment costs of the built infrastructure and the preservation of natural habitats as protected areas, but some countries already invest in the protection of restoration of habitats as part of the strategies aiming at reducing the disaster risk.

Protected Areas in Romania within the International Context and within the European (EU) Integration

The International Union for Conservation of Nature defines the protected areas as being “an accurately limited, known geographical space, designed and administrated based on some legal documentation or through other efficient means, aiming at the long term preservation of nature as well as of the environmental services and the associated cultural values” (IUCN, 2008).

Romania joined the European Union in 2007. As a result, within the Accession Treaties, engagements were also signed, regarding the environmental protection, obligations that Romania has committed to meet. Though, in time, there have been associated issues, to some chapters that haven't been respected. The delays in time regarding the engagements made in the Accession Treaty to the EU, regarding the designing of the Natura 2000 sites, are a good example to this extent. The European Commission has officially complained in 2010; according to the complaint, Romania hasn't adopted the regulating documents for the constitution of protected areas for

all the 130 Natura 2000 sites, it has previously committed itself to implement (<https://salvatidelta.ro/>).

Subsequently, things have been somehow corrected; according to the National Agency for Environmental Protection, from the data it issued, resulted that Romania summed up, in 2010, 994 national interest protected natural areas, with a total surface of 1.900.000 hectares (approximately 8% of the territory) (www.infomediu.eu/).

A problem that still persists is represented by the under-financing of the protected areas, given the fact that within the Prioritized Action Framework for the Natura 2000 Network – document issued by Romania and communicated to the European Commission alongside to the signing of the Partnership Agreement for 2014-2020, the costs associated to the management of the sites included in the network were estimated at minimum 412 mil. EUR per year (www.sor.ro).

Protected sites as special areas of conservation have been designed base on the Directive regarding the habitats; the designing of other sites as special preservation areas was made according to the Directive regarding the birds. All these represent an essential stage in meeting the directive's objectives. The results stipulated by article 17 from the Directive regarding the habitats and the reports stipulated in article 12 from the Directive regarding the birds, as well as the progress made towards the adequate designation of the community significant sites, both on land and on water, should represent key elements for the evaluation of the member states' performance (<https://ec.europa.eu/environment/>). By the end of 2015, 22.56% of the total land surface of Romania had been included in the Natura 2000 network (the EU average is 18.1%) with special preservation areas according to the Directive regarding birds that covers 14.83% (with the European average of 12.3%) and community significant sites according to the Directive regarding habitats which covers 16.68% (EU average of 13.8%); there were 539 Natura 2000 sites in Romania, including 9 marine sites (<https://ec.europa.eu/environment/>).

Within the National Territorial Development Strategy of Romania until 2035 there is an accurate reference to ecologic infrastructure as an efficient mean of adapting to the climate changes and of decreasing the natural risks (<https://ec.europa.eu/environment/>).

In Romania, in 2018, the total protected areas represent approximately 23.65% of the total surface, which represents a value above the average the Natura 2000 sites covers from the terrestrial surface of the European Union, namely 18%.

The expansion of the protected areas network in Romania is a need that should start from the true awareness of the wealth, variety and unicity of our nature, of Romania's European significance and more, as one of the countries with the largest biodiversity in Europe, reflected by figure 1.

The requirements for Romania at its adherence to the European Union and the international agreements assumed based on the United Nations Framework Convention on Climate Change (UNFCCC) needs an optimal approach on the short, medium and long term climate change, and correlated to the objectives of the sustainable development strategy of the European Union, Romania should extend its network of protected areas and optimize their management, admitting the value of the ecosystems' services.

Recently (July 2019), the European Commission introduced the infringement procedure on Romania for very poor results regarding the monitoring of the air quality. One of the proposals is the one of urgently expanding the protected natural areas in order to reduce pollution (https://europa.eu/rapid/press-release_INF-19-4251_ro.htm).

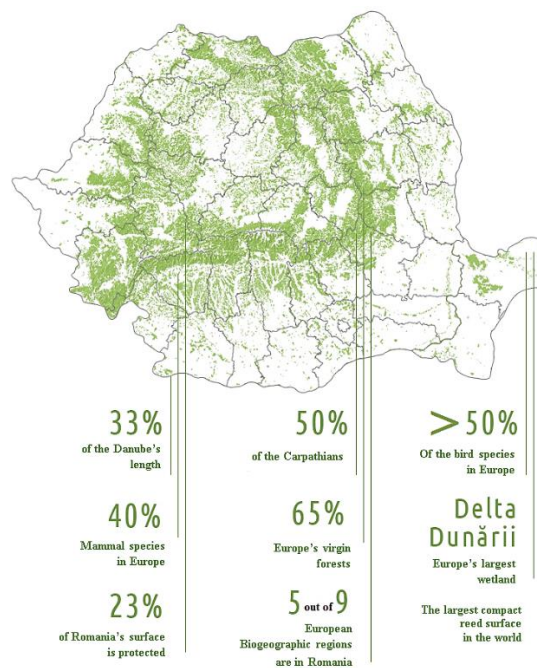


Figure 1. The Natural Capital of Romania

Source: <https://romaniasalbatice.ro/ro/arii-protejate>

Considering that Romania has a large biodiversity, maybe the largest at the European level and it also has a wide natural capital that must be preserved (Turtureanu 2018a), also considering the ecologic services provided to the socio-economic system by various ecosystem (Turtureanu, 2018), the fact that climate changes lead more and more frequently to serious, disastrous ecologic and economic effects, it is only by expanding the protected areas and an accurate management of them that will provide Romania with a long term economic and social prosperity, according to the concept of sustainable development.

Thus, the international movement for the preservation of protected areas will grow in time. As the planet becomes more and more crowded, it will remain the main biodiversity preservation modality and, in the end, of ourselves (Lopoukhine, 2012).

Conclusions

The expanding of the number and surface of protected areas in Romania is not just an ecologic significant objective.

The expanding of the protected areas' surface represents a way through which the quality of the living standards in Romania might grow; from the ethical perspective, the increase of the number and surface of the protected areas represents a way through which sustainable development can be reached on long term, a biologic heritage can be given to future generations, a natural capital that is a benefit of present generations.

The expanding of protected areas is part of an intelligent management of the natural capital and in fact represents and adaptation to the climate changes and the human pressure in the future.

Not the least, the expansion of protected areas represents an obligation assumed by Romania, through various agreements, as an EU member or other international organisms; Romania's environmental policies must meet these obligations and they represent the single way through which eventual sanctions can be avoided.

References

- Dudley, N., Stolton, S. (2003). *Running Pure: The Importance of Forest Protected Areas to Drinking Water*. Washington D.C. : WWF/World Bank.
- Dudley, N., Stolton, S., Belokurov, A., Krueger, L., Lopoukhine N., MacKinnon, K., Sandwith, T., Sekhran, N. (2010). *Natural Solutions: Protected Areas Helping People to Cope with Climate Change*. Gland, Switzerland: IUCN-WCPA, TNC, UNDP, WCS, World Bank and WWF.
- Halpern, B.S. (2003). The impact of marine reserves: do reserves work and does reserve size matter? *Ecological Applications* 13: 117-137.
- Heinen, J.T. (1996). Human behavior, incentives and protected area management. *Conservation Biology* 10(2): 681-684.
- Kapos, V. Ravilious, C., Campbell, A., Dickson, B., Gibbs, H., Hansen, M., Lysenko, I., Miles, L., Price, J., Scharlemann, J.P.W., Trumper, K. (2008). *Carbon and Biodiversity: A Demonstration Atlas*. Cambridge, U.K.: United Nations Environment Programme - World Conservation Monitoring Centre.
- Lopoukhine, N., Crawhall, N., Dudley, N., Figgis, P., Karibuhoye, C., Laffoley, D.J., Londoño M., MacKinnon, K., Sandwith, T. (2012). Protected Areas: Providing Natural Solutions to 21st Century Challenges. *S.A.P.I.E.N.S.*, Vol.5, issue 2 - IUCN Commissions.
- MacKinnon, J., MacKinnon, K., Graham, C., Thorsell, J. (1986). *Managing Protected Areas in the Tropics*. IUCN Conservation Library. Cambridge.
- Millennium Ecosystem Assessment (MEA) (2005). *Ecosystems and Human Well-being: Biodiversity Synthesis*. Washington, D.C.: World Resources Institute.
- Primack, R. B. (2006). *Essentials of Conservation Biology* (4th edition). Sinauer Associates, Sunderland, MA. 580 pages.
- Quintero, J.D. (2007). *Mainstreaming Conservation in Infrastructure Projects. Case Studies from Latin America*. Washington D.C.: World Bank.
- Stolton, S. & Dudley, N. (Eds.) (2010). *Arguments for Protected Areas: Multiple Benefits for Conservation and Use*. London: Earthscan.
- Turtureanu, A., Dorobăț, Dobrescu, L.M., C.M. (2018). The Conservation of Romania's Biodiversity, a Fundamental Condition for the Sustainable Development *Journal of Danubian Studies and Research*, Vol 8, No 1.
- Turtureanu, A., Dobrescu, C.M., Dorobăț, L.M. (2018). The Economic Quantification of the Ecologic Services of Forest Ecosystems, *Journal of Danubian Studies and Research*, Vol 8, No 1.
- Wilson, E.O. (1999). *The Diversity of Life* (New Edition). Harvard University Press, Cambridge, MA.
- World Bank (2010). *Convenient Solutions to an Inconvenient Truth: Ecosystem-based approaches to Climate Change*. Washington D.C.: World Bank. <https://openknowledge.worldbank.org/handle/10986/2159>.

<http://www.infomediu.eu/eco-news/8941-ariile-naturale,-protejate-%C3%AEn-rom%C3%A2nia.html>

<http://www.punepretpenatura.ro/>

https://ec.europa.eu/environment/eir/pdf/country-reports-archive/report_ro_ro.pdf.

https://europa.eu/rapid/press-release_INF-19-4251_ro.htm.

<https://romanasalbatica.ro/ro/arii-protejate>.

<https://salvaidelta.ro/romania-data-in-judecata-de-ce-pentru-ca-nu-a-infiintat-1-000-000-ha-de-arii-protejate>.

<https://whc.unesco.org/archive/convention-en.pdf>.

<https://www.cbd.int>.

<https://www.cms.int>.

<https://www.ramsar.org>.

www.sor.ro.

www.unesco.org.