

The Conservation of Romania's Biodiversity, a Fundamental Condition for the Sustainable Development

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Abstract: The concept of “natural capital” of a certain geographical space, of an administrative entity represents the network of natural, manmade or even anthropic ecosystems, with the functioning of the anthropic ones being directly or indirectly connected to the first two categories of ecosystems. The hierarchical components of natural capital are the genetic diversity, the specific diversity and the ecosystem diversity. According to the UN, biodiversity is defined as “the variability of the living organisms from all sources, including, amongst others, the terrestrial, the marine ecosystems as well as other aquatic ecosystems and of the ecologic complexes they are part of; it includes the diversity within species, “between the species and the ecosystems”. The services provided by ecosystems are essential to the Human Socio-Economic System. Merely starting with the 90's, a large interest is gaining shape at the European and also global level, regarding the biodiversity and the sustainable development. Though, in Romania, there has been a socio-economic interest for the conservation of different issues of the biologic diversity, things have been neglected in the years of socialism, when the short term economic interest used to play the main role. Especially starting with 2007, as Romania reentered the European path, the conservation and the protection of biodiversity has been carried out through the building, at national level, of an area of protected areas including various categories, which has been integrated within the one at the level of the EU. The legal framework has been modified to this extend, being in accordance to the one of the EU. Though it is known, at a declarative and legal level, that the areas in a natural or semi-natural regime represent the basis of the socio-economic development of each administrative entity, there are also various threats to the biodiversity in many areas of Romania. Considering the fact that Romania enjoys the existence of a unique biodiversity within Europe, both at the ecosystems' and species' level and at the genetic one too, it is clearer that the conservation of biodiversity is not only a national, but also a continental interest. Sustainable economic development cannot be reached excepting this desire.

Keywords: natural capital; biodiversity; sustainable economic development; socio-economic system

Introduction

Biodiversity has been firstly defined during the UNCED Global Summit in 1992 in Rio de Janeiro, where it has been considered that this concept represents the diversity

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of life on Earth and implies four levels: diversity of ecosystems, of species, genetic diversity and ethno cultural diversity (www.mmediu.ro).

In this year also, 153 countries have signed the Convention on Biological Diversity. Romania has ratified the document in 1993. The Objectives of the Convention are: conserving of biological diversity; the sustainable use of the biologic diversity components; the correct and balanced distribution of the benefits resulted from the use of genetic resources (www.mmediu.ro).

Biodiversity includes the components of the natural capital alongside the anthropic diversity (Cogălniceanu, 1999).

The natural capital of a geographic space consists of the network of ecosystems that function in a natural, demi natural regime and of the network of anthropic systems resulted from the transformation of the first ecosystem categories (Stanciu & Florescu, 2009).

Thus, we cannot conceive the conservation of biodiversity without conserving the natural capital.

The conservation of the natural capital faces large difficulties due to the fast disappearance of its various components and due to the limits in the knowledge and in the resources needed in order to prevent these loses (Soulé, 1985).

Natural capital and its hierachical components (genetical diversity, specific diversity and ecosystemic diversity) have a certain productive capacity which must be known in order to avoid over-exploitation and, respectively, a certain support capacity – the essential parameter in order to accurately evaluate the anthropic pressure and avoid the deterioration (Vlăduțu, 2005). In order to ensure the sustainable socio-economic development, one must ensure the consevation of a diverse and balanced structure of natural capital and “the use of reources and services it produces” within the limits of the support abilities of its components (Vădineanu, 1998).

Discussions on the Economic and the Ecological Approach to Biodiversity

Economists have generally had a limited approach, as they have seen the “capital” as only the resource that provides tangible, immediate incomes; ecologists approach the notion of “capital” from another perspective, also including the untouchable ecologic, “invisible” services and the material goods provided by the environment, on long term, vulnerable against the anthropic activities (Fig 1).

The functions carried out by the natural capital are divided in: habitual functions (support system of life), production functions (provides natural resources used to generate economic value goods) and regulatory functions (absorbs the residuals of economic activities, contributes to the stabilization of the climate and of the hydrological circuit, to the control of the water, soil and air quality).

The most inclusive concept that defines the multitude of the eco-protective actions would be the management of natural capital, which pursues the identification, the description and the quantification of the component elements of natural capital, the setting of the causes that determine the loss of biodiversity, the identification of the solutions and the elaboration and implementation of the strategies in order to maintain the biodiversity.

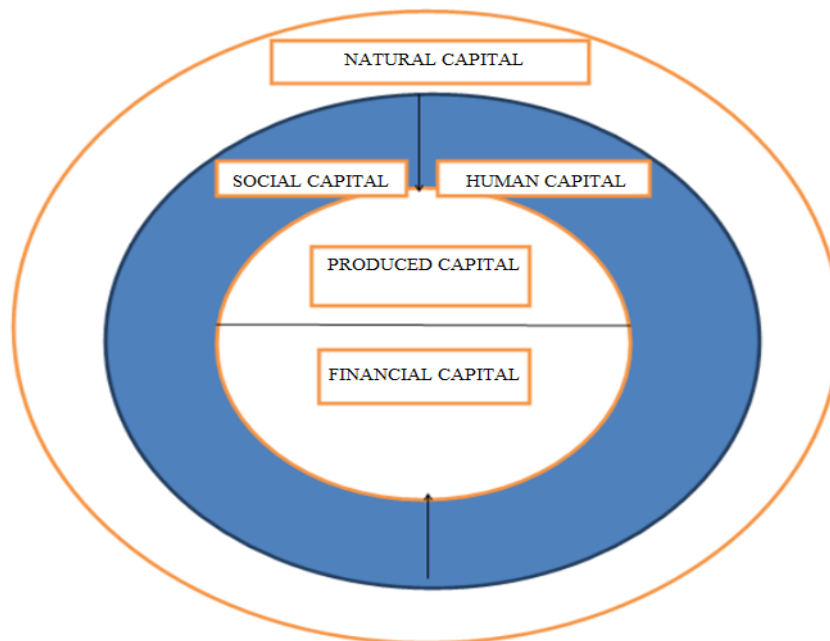


Figure 1. Piramyd of capitals (after www.economicsnetwork.ac.uk)

The short term objectives regarding the conservation of biodiversity imply the identification and the protection of these components of biodiversity which are more valuable and more endangered, subsequently aiming, on the long term, the reconstruction of those damaged components and the insurance of their viability, including the ecologic and evolutive processes, fundamental for the maintenance of the integrity of the ecosphere as a system (Winston & Angermeier, 1995).

The Issue of Biodiversity in Romania after 1990

As we have already mentioned, there has not been in Romania, until 1990, an unitary approach of the biodiversity issue. In the first half of the 20th century, this was quite difficult, even worldwide. The first country in Europe which has created a national park was Sweden, in 1909 (Marin & Stumbea, 2006). During the second part of the century, the issue of conserving biodiversity has begun been widely approached in the developed countries, in order to solve the problems generated by an economic development made without taking into account the impact on the environment. “The

paycheck” of disconsidering the environmental protection has already appeared. But, in Romania, the conservation of biodiversity was seen, especially at local level, as the protection of the species and the habitats which were local sources which could bring direct benefits regarding their use or maximum cultural benefits.

Especially starting with the 90s, the conservation of biodiversity has become a main objective, having as a priority the salvation of all categories of ecosystems, of the species and genes with higher motivation reported to the utility one, and, namely, of sustainable development, ethics, the inter-generation ethics.

To this extent, starting with 1990, various categories of protected areas have been constituted in Romania also, which would support the protection of nature, the conservation of the natural capital and of cultural values.

These protected areas, irrespective of their ranking, are important to all the levels of society and they can be turned into sustainable development models of the socio-economic system, especially through the application, in their areas, of the sustainable resources management; protected areas represent the most important method of conserving biodiversity (Stanciu & Florescu, 2009).

Protected areas should be part of a network and be interconnected through the so-called eco-ducts or ecological corridors, which is hard to reach and where Romania has a long way on. But this thing is not only a feature of Romania, as ecologic corridors are not defined and created, protected, conserved in other countries either (Stanciu & Florescu, 2009).

Romanian legislation makes the difference between the national network of protected areas, representing the “assembly of national interest protected areas” and the **ecologic network of protected areas**, which is the “assembly of protected natural areas, alongside the ecologic corridors” (Stanciu & Florescu, 2009).

Lately, at the European level, there is more and more focus on the understanding and evaluation of landscapes, as dynamic systems, that are the subject of natural and social transformations, Romania benefiting, from this perspective, of an unique and invaluable resource of natural capital, through its richness, diversity and value at the European level. In our country, there are more categories of protected areas, which are mainly different according to their protection, conservation and use regime: scientific reservations, national parks, monuments of nature, natural reservations, natural parks, biosphere reserves, wet areas of international significance, natural sites of universal heritage, special conservation areas, special fauna protection areas, community significance sites, geoparks. During the short history of conserving biodiversity and natural protection in Romania, 2007 has a special significance, by designing the special areas of avifaunistic significance (AVS) (Conete, 2011; 2014; Conete & Gava, 2013), through the HG no. 1284/2007, and of the Community Significance Sites (CSS) through the Order of the Minister no. 1964/2007 as a

integrating park of the Natura 2000 European Ecologic Network in Romania, its implementation being a condition for our integration in the EU.

The IUCN definition of a protected area is used as the primary criterion for inclusion of a site in the database: "A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008; www.unep-wcmc.org).

The total surface of the protected natural areas in Romania is approximately 24.46%, namely 58,085 km² of the total surface of the country, to which 23.1% is added from the marine territorial waters (6,866 km²) (www.protectedplanet.net/country/ROU), while national and natural parks reach 8% of the surface; regarding this issue, there is also the discontent that some areas such as Făgăraş, Ciucaş, Leaota, Ţarcu Mountains etc have only remained Natura 2000 sites (<https://florinak.wordpress.com>), though there have been projects and proposals for the creation of certain national parks, such as the recent one (2018) for the creation of the Făgăraş Mountains National Park (www.carpathia.org).

Yet, if we make a comparison between Romania and the European countries, excepting Russia, which is a particular case), we can notice that our country only includes 1.3% of the surface in the category of the national parks, a percentage that is insufficient for the conservationsits.

If we try to look at the situation in other European countries, regarding the population density, reported to the one of Romania, or higher, such as Germany (with 37.75% of the surface consisting of protected areas), France (25.79%), Denmark (35.95%), Italy (30.33%) or Great Britain (28.68%), the situation advantages them (www.unep-wcmc.org).

The general vulnerability of the natural capital, but also of the protected areas, in particular, consists of a series of pressures and menaces due to the development of residential and commercial infrastructure, of the agriculture and aquaculture, mining and energy production, transport corridors and services, the use of biological resources, the changes of the natural systems through human, invasive and problematic species damages, pollution, geologic events, climate changes and extreme meteorological phenomena. Each of these categories of pressures and threats include more subpoints, this list has been adapted according the Conservation Measures Partnership Taxonomy of Direct Threats (<http://fosonline.org/CMP/IUCN/browse.cmf?TaxID=DirectThreats>) and was taken from "Management Effectiveness Tracking Tool" , WWF and the World Bank, revised edition, issued by the WWF International in July 2007 (Stanciu & Florescu, 2009).

IUCN defines the pressure as an action/phenomena which has had a negative effect during the last 5 years usually; while the threat is an action/phenomenon which will

continue or can appear in the future and with a potentially negative effect in the next years.

Considering all these things, solvings of some conflicts generated by the „economist” and „ecologic” approaches of the natural capital were found. The implementation of a costs and benefits analysis methodology was tried regarding the impact of the anthropic activities on the environment and implicitly of the calculation methodology of the environmental assets.

The cost-benefit analysis was criticised because, initially, it has not evaluated the impact on the environment, but only it described it; during the last years, the evaluation methodologies from the financial-economic terminology have diversified and evolved, but there aren't always uniform (they are different from a country to another), also being frequently uncertain as result (www.economicnetwork.ac.uk). In spite, it is frequently said that it is better to have a monetary evaluation instead of a physical measure which would not be included in the actual net value, making it easy to ignore. The application of the evaluation techniques has been recently stimulated by the evaluation attempts of the eco-systemic services and of the “green infrastructure” by the central and local administration (to be seen from the www.greeninfrastructure.org.uk example).

For the first time in Europe and even in the world, Norway has applied the environmental accountability in 1974, followed by France.

Yet, during the last 20 years, environmental costs calculus analysis have started to be implemented, more or less evident (Comănescu, 2015). Sustainability science has emerged as a combination between economy and ecology (eco-economy), as a result of the need of solving problems which emerge after actions were made on the environment (Zaman & Gherasim, 2007). The gap is frequently larger, of years or decades.

The economic value of the goods and services provided to the humanity by all the ecosystems on Earth has been estimated between 16 and 54 trillion USD/ year (Costanza et al., 1997), related to the value of the USD 25 years ago.

Going back, in order for these protected areas to function in a corresponding manner, irrespective of their number and surface, it is very important to understand, by all the societal groups that are directly or indirectly influenced by these areas, that the benefits of their functioning are far more significant reported to the temporary “loses”. Though, at first glance, there might be some immediate costs, some economic losses for some socio-economic entities, on medium and long term, the benefits, even the “tangible” ones are far more than evident.

Eventually, a part of these immediate losses can be supported by the state, as compensations can be given to socio-economic entities as a solution in order make the implementation of a protected area more bearable.

The only long term solution for Romania, regarding the sustainable socio-economic development is the implementation of the national strategy and of the action plan for the conservation of biodiversity, which supposes a deep collaboration between all the scientific, economic and politic decision making factors.

Conclusions

In Romania, the issue of recognising the importance of natural capital is quite recent (after 1990), like in the rest of the former socialist countries, with a gap between them and the occidental states or other developed states of the world. Despite this fact, there have been concernings of more specialists which have led to the recovery, to a large extent, of the previously mentioned gap between our country and the others. Specialists from economy, ecology, environmental protection have cooperated, leading to significant progress regarding the understanding of the fact that only through a sustainable development, one can reach an economic growth that would ensure medium and long term environment. There are strong concerns regarding the creation of other protected area, even of new national parks, in order to preserve as much as possible of the natural capital. The trend is ascending, bu the speed it grows with is pretty low. Natural capital is still insufficiently protected in Romania. There are still tensions generated by the interests of the ones looking for short term advantages and economically act against the sustainable development idea. Only an economic developepment which would not be in contradiction to the environment would succeed in ensuring the socio-economic long term sustainability of Romania.

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