

SECȚIUNEA 2: ECONOMIE FUNDAMENTAL ȘI APLICATĂ

NATURE, ECOSYSTEMS AND BIODIVERSITY - ECOSYSTEM MANAGEMENT

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Abstract. *In order to maintain, increase the health and productivity of ecosystems in the socio-political and value context, respectively the capacity to provide benefits for society, the concept of ecosystem management was created. Earth's ecosystems provide humans with a wide variety of benefits, known as "ecosystem goods and services." Goods produced by ecosystems include: food, water, fuels and wood, while services are water supply and air purification, natural waste recycling, soil formation, pollination and regulatory mechanisms that nature, if not intervened on, they use them to control the climatic conditions and populations of animals, insects and other organisms. Through this paper we aim to bring to attention the issue of nature biodiversity which through proper ecosystem management would allow the correct use of resources, economic development and nature conservation can exist and can have an influence on the development of tourism and agro-tourism.*

Keywords: *nature, ecosystems, biodiversity, management*

JEL CLASSIFICATION: *Q54, Q56, F63*

INTRODUCTION

In the past, the term nature conservation referred only to recreational activities, targeting certain categories of people and focused only on the conservation of certain species [Bran et al., 2018]. Today, with the accumulation of knowledge and a much broader vision of the natural environment, nature conservation means the protection of land and landscapes for both recreation and public interest and last but not least the conservation of certain habitats and species for ensuring their maximum durability.

Plants and animals, including humans, cannot exist without water, air, light, temperature, soil, ie biocenosis cannot exist without a certain biotope. The ecosystem is formed at the interdependence between biotope and biocenosis [Rădulescu et al., 2018].

According to the Convention on Biological Diversity, signed in Rio de Janeiro on 5 June 1992, biodiversity means "the variety of expression of the living world, the variability of living organisms from all sources, including, but not limited to, terrestrial, marine and other aquatic ecosystems. of the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems" [IUCN, 2020].

The concept of biodiversity is quite broad and should not be confused with that of biological resources, the latter being components of biodiversity. Among the biological resources we mention: timber resources, crops, plants and all those categories which in turn can be grouped into cultivated and uncultivated [Bran et al., 2020].

ECOSYSTEM SERVICES

An important role in the fierce fight against the destructive factors on the environment, ecosystems and habitats has the conservation of ecosystems and biodiversity. If natural ecosystems are not protected, the goods and services they provide will become increasingly scarce and sought after. The poor population, especially in developing countries, is most at risk of biodiversity loss, as it often depends directly on ecosystem goods and services [Burlacu et al., 2018]. It is obvious that we are wasting the natural capital of the Earth at a too fast pace [Bodislav et al., 2019].

Ecosystem services are the end products of nature, and refer to the benefits of society: water supply and air purification, natural waste recycling, soil formation, pollination and regulatory mechanisms that nature, if not intervened, uses to control climatic conditions and populations of animals, insects and other organisms [Negescu Oancea, et al., 2020].

According to the typology proposed by the Millennium Ecosystem Assessment, ecosystem services are divided into four main categories: support, supply, regularization and cultural. Support services, as the name implies, are services that underlie soil formation and include photosynthesis and the nutrient cycle that underlie growth and production. The biogeochemical circulation has a role in restoring the reserves of nutrients through some organisms, these allowing the creation of physical structures and mechanisms [Dima et al., 2020].

In order to better understand this process we could think of a certain type of ecosystem, such as agriculture, in which the supply of nutrients, in this case, is restored through the use of fertilizers. Disruption of biochemical cycles is caused by human activities and is manifested by unwanted accumulations of nutrients, in generic terms called eutrophication [Bran et al., 2020].

Eutrophication is determined by the additional inflows of nutrients into agricultural ecosystems that cannot be retained or recycled locally, being transferred to other ecosystems and by the deposition in the atmosphere of nutrients caused by fires, wind erosion, industry, etc. [Howark, et al. 2000].

Due to its effects, eutrophication is considered the most serious form of water pollution, especially affecting fish production, drinking water supply and recreational activities. Supply services represent the ability of ecosystems to produce goods necessary to satisfy human existence such as food, water, wood and fiber [Alpopi et al., 2018]. The biological needs of the human body are in a direct correlation with the food needs of the individual being influenced by numerous internal factors (age, sex) and external (temperature, pressure).

Food has a quantitative and a qualitative side in its structure [Burlacu et al., 2020]. The quantitative side expresses the daily energy consumption of an individual depending on certain factors related to climate, age and physical activity. Coste Ioan in the book *Man, the Biosphere and Natural Resources* argues that "in warm climates, individual energy consumption is lower compared to temperate and cold" [Costea, 1992].

Most of the food consumed by humans comes from agricultural ecosystems (culture, animal husbandry), and the rest from natural ecosystems: marine and oceanic (fishing, seafood, hunting). At the end of the twentieth century, alternative agricultural systems (use of organic fertilizers, conservation of soil fertility, etc.) are promoted, which no longer focus on maximizing production

but on ecological principles addressed through the concept of sustainable agriculture. According to Radulescu, sustainable agriculture is defined as “a system of technologies and practices meant not only to ensure a satisfactory production but also ecological objectives” [Rădulescu, C.V., 2003].

When we talk about food problems, we do not necessarily refer to hunger but also to the inadequate consumption of vitamins, proteins and minerals or to the excessive consumption of certain amounts of food, regarding the food imbalance that is called overnutrition. The most common problems with food are, as mentioned above, malnutrition or hunger caused by poverty or the inability to lead a decent life and overeating or preference for foods high in energy (fats, proteins) all leading to obesity or cardiovascular diseases [Bodislav et al., 2020].

In order to reduce the excesses and negative effects of inadequate nutrition, the transition to traditional foods, the highest possible consumption of fruits and vegetables, dairy products, iodized salt, etc. are encouraged [Bran et al., 2020].

A threat to society is posed by natural hazards which are a consequence of man's destruction of natural ecosystems. Over time, people have tried to reduce the impact of natural hazards through the development of technologies, but they continue to pose a threat by causing material damage and loss of life because society cannot have permanent control over them [Burlacu et al., 2020].

Human efforts to conserve natural ecosystems and avoid deforestation will reduce the impact of fires, droughts and landslides.

Both the rate of their decomposition into ecosystems and the transport of waste by water, air currents or biological agents contribute to reducing the toxicity of waste. Plants also have an important role in reducing the concentration of pollutants in soils contaminated by the bioremediation process.

The last category of services and the best perceived by people are cultural services, which refer to beauty, inspiration and recreation that contribute to a better spiritual state.

ANTHROPOGENIC PRESSURE ON BIODIVERSITY

Biodiversity is currently threatened by the destruction of natural ecosystems as a result of land use change, through increased agriculture and urbanization, overexploitation, pollution, climate change and new species that compete with native flora and fauna, contributing to the destruction of natural ecosystems. part of it already disappearing.

According to Bleahu, anthropogenic pressure is influenced by factors such as [Bleahu, 2001]:

- Population growth and resource consumption.
- Continuous narrowing of the spectrum of products sold in the food sector.
- Incorrect assessment of the environment and its resources.
- Inequity in the distribution of benefits from protecting and conserving biodiversity.
- Deficiencies in scientific and economic knowledge.

People are not aware that by maximizing the exploitation of ecosystems and by excessive hydropower or tourism arrangements accelerates the mechanism of biodiversity loss endangering the extinction of species and habitats, the riches and benefits that nature offers us and last but not least we can welfare danger.

Biodiversity also has an economic value that allows the evaluation of ecosystem goods and services in financial terms by comparing the costs of ecosystem extinction with those of efficient conservation measures. The economic role of biodiversity is to ensure the most efficient use of

resources, because in the event of the loss of natural ecosystems the well-being of survival will be affected in the long run.

Although trade in general should have a positive impact on biodiversity by increasing the economic efficiency of production and allocating resources, there are situations when it poses a rather serious threat to biodiversity through a number of processes: changes in production, trade liberalization leading to an increase in economic activity in certain sectors, the internationalization of capital investments, trade policies with a negative impact, emissions from transport and the introduction of new technologies that excessively pollute the environment.

Out of the desire to have short-term gains without taking into account the possible depletion of resources, the term overexploitation of resources arose. Over exploitation of natural resources, achieved through mining, excessive grazing that hinders the natural regeneration of arboreal vegetation, excessive extraction of wood from private and state forests, is a permanent threat to biodiversity, through the quantities exploited, through the extraction of trees from parquet on the course of mountain streams. Overexploitation causes the decline of species and in some cases their extinction.

Massive deforestation in order to capitalize on timber production, trade in timber, expansion of agricultural land and pastures, construction of roads and highways lead to: the extinction of thousands of species of trees, birds and plants, floods, the danger of global warming and of the greenhouse effect.

Excessive fishing or overexploitation of fish resources is considered one of the main causes of declining fish stocks and the destruction of coral reefs. Habitat change has led to increased greenhouse gas emissions that cause significant global climate change by rising sea levels, early melting of glaciers, significant amounts of rainfall or prolonged drought.

The effects of acid rain are numerous and, unfortunately, they are negative for both nature and humans. Waters with high concentrations of acid that fall from the sky have a devastating impact on forests, soil, watercourses and stagnant water. Numerous species of aquatic insects and invertebrates, with an essential role in these habitats, are killed by the acidity of the rains.

Intensely practiced uncontrolled tourism creates a negative impact of intensity by deteriorating and degrading wild flora, disturbing animal species, degrading sloping soils by not following marked routes, as well as by camping and open fires in illegal places, throwing household waste anywhere and anyway. All these have determined a great pressure on the natural environment, leading to its degradation, thus being necessary to implement the concept of ecotourism, not only in protected natural areas.

Taking into account the special importance of natural capital for the sustainable development of human communities in terms of ensuring renewable resources (water, air, food, clothing, medicine, air and water regeneration, etc.), landscape and recreational value, protection and ensuring the ecological balances necessary to maintain a healthy environment, results in the imperative need to conserve biodiversity as a necessary condition for the harmonious development of future generations.

Regarding biodiversity conservation, a number of objectives have been developed, the most important of which are: restoring environmental conditions for biodiversity conservation, human activities on species and ecosystems, developing methods to protect biological diversity, describing the diversity of the living world and others.

The economic value of biodiversity underlines the economic and social role it plays in the development of coastal areas for marine ecosystems, with Member States complying with biodiversity legislation as well as the protection measures of the Natura 2000 network. of resources,

economic development and nature conservation can exist and can have an influence on the development of tourism and agro-tourism. The value of biodiversity conservation can be achieved through the 2020 Strategy. We can say that the production of materials, trade and consumption lead to a decrease in biodiversity, and to prevent this, Member States can promote and develop the most efficient use of resources in the field of consumption. It is also preferable to develop and adopt a Management Plan for all categories of protected areas that will achieve the conservation, maintenance, restoration of a favorable conservation status of bird species and specific natural habitats, as it is defined in national and international normative acts, taking into account the requirements of the European Union.

CONCLUSION

In the field of biodiversity conservation and sustainable use of its components, the legislative framework is a strengthened one, but there are still some gaps in secondary legislation and some inconsistencies, inconsistencies and gaps in sectoral legislation. These deficiencies are mainly due to the fact that the Biodiversity Strategies and Action Plans developed so far have not been assumed by political factors, not being adopted by normative acts, thus lacking the legal force necessary for taxation. In this regard, an improvement of the legal and regulatory framework is recommended for a better conservation of biodiversity in protected natural areas.

In accordance with modern principles of nature conservation, the management plan must integrate the interests of biodiversity conservation with those of socio-economic development of local communities within the scope of the nature reserve, while taking into account the traditional, cultural and spiritual features specific to the area. .

In order to assess the state of biodiversity and the effectiveness of conservation measures as accurately as possible, a series of indicators must be developed that correspond to the specifics of the ecosystems.

Due to the lack of mandatory introduction of basic notions on biological diversity and species conservation in the pre-university education curriculum, I consider it necessary to develop as many programs and projects as possible aimed at informing and educating young people about the measures taken for conservation biodiversity values.

More emphasis should be placed on strengthening institutional capacity at the level of environmental authorities and administrators / custodians and developing programs for the professional training of staff in these structures, in order to effectively carry out biodiversity conservation.

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