

# THE SUSTAINABLE PROTECTION AND EXPLOITATION OF THE LIVING AQUATIC RESOURCES FROM THE DANUBE DELTA BIOSPHERE RESERVE

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**ABSTRACT:** *The degradation of nature has known mostly during the last century alarming dimensions. Gradually, the natural world heritage has depleted due to the disappearance of several plant and animal species, and many of the existing ones are endangered.*

*Natural resources are used in many areas, as industrial raw materials (vegetable oils, wheat starch, animal fats are used for obtaining soap, cosmetics etc.), energy production, food source or raw materials for medicines. Along with the overexploitation of natural resources, another problem is represented by the degradation of habitats (or its fragmentation, for example, by means of communications) or by their disruption, which contributes to the loss or degradation of species.*

*Lately, the world has become aware that natural resources are not inexhaustible, that many species are threatened and that we need to strive for the rational use of natural resources for present needs, without compromising the ability of future generations to also meet their needs<sup>1</sup>.*

**KEYWORDS:** *degradation of habitats, sustainable protection, sustainable development, Danube Delta Biosphere Reserve*

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In order to preserve the species and their habitats, protected areas have been established worldwide.

The protected area is a geographically delimited area with natural elements and rare or endangered species, regulated and managed in order to achieve specific conservation objectives.

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<sup>1</sup> The principle of sustainable development.

Sustainable development issues remained and will remain among the present global concerns, especially because of the discrepancy between the theoretical recognition of its importance and the concrete results registered so far. In recent decades, worldwide, progress has been made in all areas and there have been significant changes in human development.

The Sustainable Development Strategy is operational by appropriate national policies, able to promote the compatibility of systems which are interrelated across time and space and by the collaboration and cooperation of the regional, international and global nature<sup>2</sup>.

Sustainable development is not an end in itself but a means to foster technical and economic progress through the more equitable distribution of its effects on present and future generations. The common problem of all countries at global level is the sustainable development strategy and it must be addressed taking into account the disparities existing in the world today, the division of countries into developed and underdeveloped countries, rich and poor countries. Although the ultimate goal of sustainable development strategy is the same for all countries, the practical problems to be developed are very different from one country to another.

Sustainable development has become an objective of the European Union since 1997, when it was included in the Maastricht Treaty; moreover, the 2001 Summit of the Goetheborg on the Sustainable Development Strategy of the European Union was also adopted, to which there has been added an external dimension in Barcelona, in 2002<sup>3</sup>.

The first EU Sustainable Development Strategy consists of two parts. The first part refers to the counteraction of negative phenomena and trends that hinder the implementation of sustainable development. The considered priorities were related to:

- Combating climate change.
- Ensuring sustainable transport.
- Removing public health threats such as chemical pollution, food insecurity and infectious diseases.
- Using natural resources in a more responsible way and stopping biodiversity reduction.
- Combating poverty and social exclusion and tackling the challenge of an aging population.

The second part of the strategy provided the revision of the way in which community policies are developed. It requires a new approach to policy making process, ensuring that economy, society and environment are converging. In this regard, the Commission must submit any initiative to an assessment procedure of the impact of the respective policy, in the context of sustainable development. In addition, it was insisted on the global dimension implied by sustainable development, considering that the EU can play an important role in reducing disparities through the Official Development Assistance Program (ODA).

Situated in the geographical center of Europe, Romania includes five of the 10 officially recognized biogeographic regions in the European Union: Alpine, Continental, Pannonian and the Steppe, the last two being present only in our country, holding thus the

<sup>2</sup> Grigore Baboianu, Cornelia Benea, Tiberiu Rusu, *Strategii și Politici Europene în Dezvoltarea Durabilă*, editura U.T.PRESS Cluj Napoca 2009

<sup>3</sup> Programul Operațional Sectorial de Mediu 2007-2013 [www.mmediu.ro](http://www.mmediu.ro)

largest biogeographical diversity compared to other Community countries (47% natural and semi-natural ecosystems). The network of protected areas occupies about 7.5% of the country (and it is growing), plus about 17, 84% of Natura 2000 sites designated in 2007<sup>4</sup>.

Tulcea County has the largest surface of protected areas in the country (about 85%) where the Delta occupies a special place.

The Delta enjoys a good international recognition:

- The inclusion in the international network of biosphere reserves, in the framework of “Man and the Biosphere - MAB UNESCO Program(1990);
- The declaration as a wetland of international importance, especially as a habitat of water birds - Ramsar Convention (September 1990);
- The inclusion in the list of UNESCO Cultural and Natural World Heritage (December 1990);
- The European Diploma for Protected Areas, awarded by the Council of Europe (2000);
- EUROS Awards: 1995 - Ecological reconstruction projects of Cernovca and Babina polders;
- 2001 - the field of public awareness<sup>5</sup>.

At the same time, Danube Delta Biosphere Reserve is also part of Natura 2000 network of protected areas, being declared a SCI site<sup>6</sup>.

The Biosphere reserves are those protected natural areas, whose aims are to protect and preserve the natural habitat areas and those areas of specific biological diversity. Biosphere reserves are spread on large areas and include a complex of terrestrial ecosystems and/or water, lakes and rivers, wetlands with unique biocenotic communities of flora and fauna, with natural harmonious landscapes or with landscapes resulting from the traditional land planning, ecosystems changed under human influence and that can be restored to their natural state, human communities whose existence is based on the exploitation of natural resources, on the principle of sustainable and harmonious development<sup>7</sup>.

In biosphere reserves we can delineate areas with different protection schemes:

- strictly protected areas destined to research only.
- buffer zones, with the role of protecting the strictly protected areas where certain activities of natural resources exploitation are allowed.
- areas of ecological restoration in which there are taken remediation measures for the damaged environment.
- economic areas where traditional or new environmental activities are permitted.

Biosphere reserves with human settlements are managed so that they represent developing models of human communities, in harmony with the natural environment.

<sup>4</sup> SCI – sites of community importance which protect species and habitats and SPA- sites of avifaunistic importance, for birds protection.

<sup>5</sup> www.ddbra.ro Starea mediului în RBDD 2007

<sup>6</sup> Site of Community importance and SPA sit (sites of avifaunistic importance, for birds protection)

<sup>7</sup> definition under OUG 57/2007 on the status of natural protected areas, preservation of natural habitats, flora and wild fauna.

The Administration of the Reserve is the Administrator of the national interest public domain, and it is also the environmental authority throughout the Danube Delta Biosphere Reserve.

The activity of the Administration of the Reserve is to create and implement a special management scheme for the conservation and protection of the biological diversity in natural ecosystems of the delta, for human settlements development and for the organization of economic activities, in connection with the capacity of supporting these ecosystems.

In order to achieve these objectives, management Plans have been drawn, that include measures and projects for the conservation of the biodiversity reserve.

An important plan drawn in 2005, the Master Plan – elaborated by ARBDD in order to support sustainable development, represents an integrated development plan drawn up to promote projects and programs that respect the principles of sustainable development.

The overall objective of this plan is to preserve and protect the natural heritage of Danube Delta Biosphere Reserve and to promote the sustainable valorification of natural resources.

In order to meet this general objective, there have been identified the following objectives:

- To improve the monitoring system for the Danube Delta ecosystems, using modern satellite surveillance;
- To improve the infrastructure of public utilities, transport and communications in order to reduce pollution, to diminish the isolation of human communities and to increase the living standards in villages in the Danube Delta;
- To support the development of alternatives to traditional economic activities in order to reduce the pressure on fishery resources;
- To support the preservation of local traditions in the use of natural resources and local traditions in housing (rural landscape), to promote the use of unconventional energy (windmills, solar cells, electrically powered navigation etc.).
- To restore the functions of natural ecosystem and habitats of the endangered species in the Danube Delta.

Although the second largest in Europe, (after that of Volga River) and 20<sup>th</sup> in the world, with its rich landscape and wildlife, where birds occupy the most important place, the Delta presents a very special interest from a scientific point of view – it is a true laboratory creating delta ecosystems, with touristic and economic importance, through its renewable natural resources.

The most important resources of the reserve are the living aquatic resources. The conservation, management and exploitation of living aquatic resources, aquaculture activities, processing and marketing of products derived from fishing and aquaculture are regulated by Ordinance 23/2008 on fisheries and aquaculture<sup>8</sup>.

For the purposes of this normative act, sustainable exploitation is defined as “the exploitation of living aquatic resources so that their future exploitation is not compromised and so that it does not have a negative impact on aquatic ecosystems”.

<sup>8</sup> Published in the Official Gazette No. 180/10.03.2008, modified

Of the 300 species in Europe and 185 in Romania, 133 species were recorded in DDBR<sup>9</sup>. This aquatic resource adds to other aquatic creatures less exploited (crayfish, frogs, leeches, clams).

For the restoration and conservation of living aquatic resources:

- a fishing quota on species is established annually, based on a study by research institutes and approved by the Romanian Academy;
- annually, the prohibition order determines fishing periods, areas where fishing is prohibited, the permitted gear types, the species prohibited from fishing;
- the fishing effort is regulated (by limiting the number of vessels/fishing boats and the fishing activity time, the number of tools used when fishing and the termination of fishing);
- there has been created the file of vessels and fishing boats which must have mandatory fishing license issued by NAFA (their number is limited), to be used for fishing.

The fishing rights in natural fish ponds belong to the State and it is awarded by the National Agency of Fisheries and Aquaculture.

The fishing authorization of temporary nature (issued annually), additional to the fishing license, contains identifying data of the vessel/the fishing boat, the validity period, the fishing area and the quota per species.<sup>10</sup> The fishing authorization is assigned directly to fishermen, natural and/or legal persons, organization of fishermen in commercial fisheries.

Fishermen will be issued a commercial fishing license, which is an individual and non-transferable document.

In order to activate on the Danube Delta Biosphere Reserve territory, fishermen, fishermen organizations or commercial companies must obtain an Environmental Authorization for the work of capturing and/or acquisition and/or marketing in compliance with Order No. 410 of April 11, 2008<sup>11</sup>.

The aquatic resource is declining due to pollution and impoundment by reducing breeding areas, and poaching.

In order to revive the fisheries sector, several plans and projects have been initiated.

DDBRA has made (and continues to this day) ecological restoration projects consisting in unsilting channels, flooding of abandoned facilities etc.<sup>12</sup>

The abandoned facilities proposed for ecological restoration, under the Strategic Plan of the Danube Delta ecological restoration, the period 2005 - 2015, will restore the delta ecosystem by restoring the hydrological, biogeochemical and ecological natural functions typical to wetlands.

NAFA has developed the Operational Program for Fisheries for 2007-2013, "taking into account environmental issues, social development and economic well-being".

<sup>9</sup> Petre Gâstescu, *Delta Dunării Rezervație a Biosferei*, Editura Dobrogea, Constanta, 2006.

<sup>10</sup> Order 4/14.01.2009 on the approval of Rules regarding the access to live aquatic resources in the public domain of the State, for the purpose of commercial fishing in inland and continental maritime waters.

<sup>11</sup> Published in Official Gazette No. 339/1.05.2008 and modified by O. M. no. 890/2009.

<sup>12</sup> The isles Babina, Cernovca and the south of Popina have been renaturated – by means of flooding, and other areas are in the project phase.

Through this program, we may obtain funds for:

- the modernization and safety of ships, boats (e.g. new engines with lower fuel consumption and low environmental impact);
- planning (upgrading) ports for the sale of fish;
- vocational training;
- the development of aquaculture to reduce pressure fishing in natural environment;
- the financial support to fishermen which give up to fishing activities and their retraining.

The implementation of the Fishing Operational Programme<sup>13</sup> in accordance with environmental regulations on environment protection will lead to a restructuring of the exploitation of fishery resources consistent with the principles of sustainable development.

The Implementation of ecological restoration plans and sustainable development of fisheries will not have the expected result if no action is taken to combat poaching.

It is hard to believe that poaching can be eradicated but we can take measures in order to limit and reduce it.

Measures for reducing and preventing acts of poaching can be divided into three groups-legislative measures, measures for strengthening institutional capacity and information and awareness measures:

- The development of clearer legislation, which does not leave room to interpretation;
- Normative acts which transpose EU legislation but which also take into account the specificities of our country (in Europe, inland-sea fishing is not practiced; marine fishing is developed- fishing vessels are being used instead of longline vessels, the traditional fishing in the Danube Delta);
- Awarding hunting or fishing rights or rights extended to all species of flora and fauna, i.e. awarding harvesting rights, "of catching and/or of purchasing and selling on the domestic market or exporting plants and animals of wild flora and fauna" have well established rules;
- the penalty system has to be established according to the seriousness of the deed; it must also be deterrent in some cases, raising even the right to the activity practice; community work should be applied as punishment ;
- The specialization of magistrates in environmental law (because no person who, within 5 years, has not been fined for the infringement of environmental legislation on reservation territory, is likely to perpetuate such deeds)
- Providing transportation means to bodies performing inspection (often poachers are not caught because they have faster vehicles - especially when it applies to boats)
- Life-long training and specialization of monitoring bodies, in order to intervene promptly and appropriately in dealing with any illegal acts.
- The information of population by means of mass media about regulations of general interest with examples of sanctions.

<sup>13</sup> Operational Programme = document approved by the EC for the implementation of those sector and/or regional priorities from the National Development Plan which are approved for funding through the Community support framework.

- Information campaigns and trainings of fishermen and hunters organizations, of the local population of the Reserve.

- Nowadays, it is extremely necessary that Delta fishermen become aware that they first have to guard their fishing areas if they want to continue fishing. It is also noticed that authorized fishermen accept, in their fishing boats, unauthorized persons whom they pay with fish. Fishermen do not to notify the control authorities about the presence of poachers fishing in their area.

In conclusion, in order to prevent poaching, population has to be aware that both wildlife and fish (and not only) are resources which should be exploited rationally, so that future generations can also enjoy them.

The Administration of the Danube Delta Biosphere Reserve, together with other controlling institutions must work better together so that natural resources are valued in line with their regeneration potential and with the capacity of the ecosystem support, in order to preserve the biodiversity of the delta.

The overexploitation of species of animals and plants is a global problem and it causes the extinction or the decrease of numerous species. The collection of rare species, fashion industry, international trade, competition to achieve fishing profitability and natural resources are declared the enemies of nature<sup>14</sup>.

It is hard to believe that poaching will disappear but we may take measures to limit and to reduce it.

At the level of the Prefect Institution in Tulcea County, there has been established a committee for the prevention and combat of poaching. This committee includes all controlling bodies in the environment, fishing, hunting, finance, veterinary area. Periodically, it carries out major actions in order to prevent poaching. Unfortunately, due to various reasons, these actions can not be continued. Poachers are usually informed on such actions and they are not caught. Nevertheless, some of these actions end with the confiscation of goods and every time they lead to the drawing up of criminal files. An example is the action of 12/02/2009<sup>15</sup>.

The actions of preventing and fighting against fish poaching will increase during the prohibition time.

The measures taken to reduce and prevent acts of poaching can be divided into three groups – legislative actions, of reinforcing the institutional capacities and information and awareness measures.

In order to prevent and combat poaching it is necessary that the population should be aware that both hunting fauna and the fish are resources that should be exploited rationally so that the next generations could also benefit from them (the principle of sustainable development).

Firstly, the fishermen must acknowledge that their existence depends on the fish, if its numbers decreases, the same happen with their income.

At this time fishermen are associated into organizations or fishing associations on areas, but they are not united, they do not know their rights and what is worse, they tolerate

<sup>14</sup> Mircea Duțu, *Ecologie - Filozofia naturală a vieții*, Editura Economică, Bucharest, 1999.

<sup>15</sup> Press Conference at IPJ Tulcea headquarters, rendered in *Delta Journal*, 12.02.2009

poaching, in fact they practice it themselves<sup>16</sup>. Very few fishermen have the courage to give information about the existence of poachers in their fishing area.

There is also another widespread phenomenon that may be considered poaching: the fact that many fishermen are accompanied by unauthorized persons when fishing. Thus practically increases greatly the number of fishermen. Fishermen should be required to associate among themselves, not to accept any unauthorized person to fish with. The permits issued by DDBRA stated this provision and the sanction applied was the suspension of the fishing license for 1 month.

In the past fishermen had each their fishing area they defended and, considering hydrological conditions, they were cleaning the channels so that fish could swim freely, they were taking care of reproduction areas, knowing that if fish could reproduce itself well, in 2-3 years they will have still enough to fish.

At the same time, with the economic progress, there was raised another problem with direct impact on fishing resources - motorboats. If 50 years ago the fishing boats were rowing boats, all motors boats have now motors of more or less power. The intrusion of motor boats into canals and lakes where water is especially low disturbs aquatic life. Not only fishermen use motorboats but most Danube Delta residents plus there is also the tourism in ascension. The fish is illegally removed from the delta with high-powered boats. Within 2 hours, the fish can reach the farthest place from one of the output of the delta.

In order to control the movement of boats across the Danube Delta and by that, to limit poaching, it is necessary to mandatory endow boats with a GPS tracking system that would be tracked by a dispatcher<sup>17</sup>.

The control of the vessels may be done by DDBRA in collaboration with the Romanian Naval Authority. I think this system would have positive effects in limiting poaching. At least in areas of strict protection, the boats will no longer enter, as they could be detected immediately. Another advantage is perhaps the easier monitorization of fishing (fishing boats are licensed to be better monitored and limited in number on each aquatic complex, thereby preventing overexploitation of the area).

Not least, very clear laws in the field of wildlife protection and a Government strategy regarding fishing and hunting in line with biodiversity protection are required in order to prevent poaching. In recent years laws have changed very much, even twice a year.

Within the legal area, the specialization of judges in environmental law, as it exists in other countries like the U.S., is deemed to be necessary. There are no persons known to have been imprisoned for fish poaching. As long as no person is convicted of illegal fishing or hunting, poachers are not discouraged. Punishment includes imprisonment or a large amount of criminal fine. Although the law provides it<sup>18</sup>, I have no information on any person known to have been sentenced to community service.

Controlling institutions in fishing, hunting and environmental protection domain should be uncompromising in enforcing laws to deter poaching acts with consequences for wild fauna.

<sup>16</sup> use of prohibited fishing tools, catching fish of illegal dimensions, fishing protected species or species which are or temporarily forbidden from fishing, do not respect prohibition periods

<sup>17</sup> several years ago, ARBDD wanted to initiate a program for vessels satellite tracking but it could not be implemented due to the lack of funds.

<sup>18</sup> Ordinance no. 2/2001 on the legal regime of fines, published in the Official Gazetter No. 410/25.07.2001, art. 5.

The Administration of the Danube Delta Biosphere Reserve, together with other controlling institutions must work better together so that natural resources are valued in line with their regeneration potential and with the capacity of the ecosystem support, in order to preserve the biodiversity of the delta for future generations, also.

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