UNIVERSITY OF CRAIOVA **Series: Geography**
UNIVERSITATEA DIN CRAIOVA **Seria: Geografie**

Vol. 13 (new series) – 2010
Vol. 13 (serie nouă) – 2010

ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT IN THE DANUBE FLOODPLAIN, THE DROBETA TURNU-SEVERIN – BECHET SECTOR

PROTECȚIE ENVIRONMENTALĂ ŞI DEZVOLTARE DURABILĂ ÎN LUNCA DUNĂRII, SECTORUL DROBETA TURNU-SEVERIN – BECHET

Mihaela LICURICI[1]

Abstract: The floodplain sector under analysis is located in the south-western extreme part of Romania, covering a distance of about 260 kilometres between the towns of Drobeta Turnu-Severin (westwards) and Bechet (eastwards) and extending on variable breadths, from a few tens of meters to more than 14 kilometres (with greater extension near the settlements of Ciuperceni and Cârna).
In the framework of its strategic and economic importance, of the food sources offered by the Danube floodplain and ponds, the human interventions within this unit were diverse and affected the balance and the metabolism of the natural ecosystems. In numerous cases, this type of intervention, under its multiple forms, led to irreversible changes of the environmental features.
The present paper aims at analysing the theoretical and actual conservation status of the most important flora, fauna and habitat elements that are characteristic to the Danubian environment, as well as presenting some examples of good practices or financing sources that might contribute to the improvement of this approach in the prospect of the region's sustainable development.
The SWOT analysis allowed for a general, synthetic assessment of the quality of the environmental sub-systems within the Danube Floodplain sector under analysis and of their development possibilities in concordance with the sustainability principles.

Key-words: the Danube Floodplain, human impact, protected area, Natura 2000, sustainable development, SWOT analysis
Cuvinte-cheie: Lunca Dunării, impact antropic, arie protejată, Natura 2000, dezvoltare durabilă, analiza SWOT

1. INTRODUCTION

The environment has a character perceived as a totally particular quality, a reflection of certain spatial-temporal realities that were permanently shaped and defined within the man – nature dialog. Entering the general framework, the floodplain environment is *not only an ensemble of material elements, but also the mental representation, the collective image, the psychic echo of the connection of people, communities, or groups with their place* (Roşu Al. & Ungureanu Irina, 1977). This permanent relation between the natural and the social and ethno-

[1] University of Craiova, Faculty of Social Sciences, Department of Geography

cultural dimensions shows great importance within the analysed space and it must be taken into account in all discussions about sustainable development.

As vast systemic ensemble, the environment results from the integration of three large equivalent systems: that of the ecological or abiotic support, the system of the vegetal and animal communities and the system of the human activities, through which the first two ones are modified, planned and used (Bertrand G., quoted by Roşu Al. & Ungureanu Irina, 1977).

The regional development became a major concern for the scientific research community, as well as a debate subject for the central and local authorities, for the entrepreneurs and the public actors. The space – as the support of the human activities, as well as *natural capital* – represents the objective form of material existence and expresses the order of the real world's coexistence, the spatial dimension being vital for the support of the social-economic systems (Berca M., 2000; Mohan Gh. & Ardelean A., 1993). The natural capital of the Danube Floodplain holds a productive capability that must be known through its functional cells in order to avoid the degradation under the human impact and to favour the sustainable use of its support capacity. The guarantee of the sustainable social-economic development in the Danube Floodplain space also implies being familiar with the ecological sustainability, the ecosystem integrity, the support capacity of the environment, the regional and local ecologic balance of the ecosystems (*Redimensionarea ecologică şi economică pe sectorul românesc al Luncii Dunării*, 2008).

The issues connected to the preservation of the biological diversity and to the sustainable development require a multidisciplinary approach, which underlines the need to protect the biodiversity and, at the same time, supports the economic development and the improvement of the human communities' living conditions (Vădineanu A., 1998; Vădineanu A. et al, 1999). The efforts made to preserve the biodiversity are sometimes in conflict with the human needs, both requirements being real and understandable.

2. ENVIRONMENTAL PROTECTION IN THE DANUBE FLOODPLAIN, DROBETA TURNU-SEVERIN – BECHET SECTOR AND SUSTAINABLE DEVELOPMENT

2.1. The national legislation concerning the environmental protection and the sustainable development

The issue of sustainability within the study area concerns the meeting of the immediate and future needs of resources and employment, at the same time with the minimization of the economic development impact on the biological diversity.

The concept of *sustainable development* can be applied in a number of ways. As some environmental economists define it, *development* refers to the improvement of the organization and not necessarily to the increase of the consumption of resources. The sustainable development is a useful concept for the conservationists, because it accentuates the need of the present development and the limitation of the increase (Primack R. et al, 2002). The investments in the infrastructure of protected areas, in order to improve the biological diversity preservation and to provide the local communities within the Danube Floodplain with new opportunities, would

represent an example of sustainable development and the same would do the efforts to promote certain less destructive forestry and fishing practices in the region. Purposely or not, the concept is sometimes misunderstood in order to achieve profitable activities, despite their impact on the environment. For example, the construction plan for a tourist and hunting complex that would imply significant deforestations in the Danube Floodplain cannot be drawn in the sphere of sustainability simply because the promoted activities would erase from the natural circuit certain surfaces with high biological or protection value.

Between the ideas that support the return to the wildness and those that propose the intensive arrangement of the floodplain, the aspects concerning sustainable development must be closely analysed in order to solve in the best manner the contradiction societal needs – biological diversity protection (Freeman R. E. et al, 2003). The efforts to reach the balance between the two elements are based on the initiatives of the local communities, of the conservationist organisations and of the government, initiatives that sometimes end by being transposed into environmental laws or regulations. These efforts can take multiple forms, but they would have to begin with individual or collective commitments concerning the prevention of the destruction of habitats and species, the aim being that of preserving valuable specific natural elements (Turner M. G. et al, 2001).

At theoretical level, the legislative documents related to the biodiversity preservation regulate the activities that directly touch the species and the ecosystems. Such acts establish when and where one can hunt, the characteristics and number of fauna elements that can be killed, the types of weapons, traps and other equipment in use, as well as the species that can be hunted. Similar documents concern the gathering of fish and plants from the aquatic environment. This is an attempt to efficiently use the natural resources, clearing the overexploitation risk.

Another theoretical legislative aspect concerns the regulation of the land use, as means of biological diversity protection. It includes limitations on the degree and type of land use, regulates the access and the potentially polluting activities. Vehicles and even people can have restricted access in the habitats and the areas with ecologically fragile resources, such as those used for nesting, the swamps, the sand dunes, and the sources of drinking water. The territorial arrangement plans must interdict the building within sensible areas, such as the floodable area. For major projects, such as barrages, channels, communication network etc., environmental impact studies must be attentively elaborated, as these documents assess the potential damages caused by the fulfilled projects.

At the same theoretical law level, there are to be mentioned the biological diversity protection strategies realised at national or at national level, through the declaration of biological communities as protected areas.

The environmental protection within the Danube Floodplain implies the maintenance of all natural processes in a state of balance that would allow the development of live in all its complexity (*Geografia României*, vol. I, 1983). The ideas concerning the need to preserve the landscapes and the biodiversity specific to the floodplain, as inherent components of sustainable development, materialised through the appearance of nature reserves (according to the *Law no. 5/2000 – Section 3 –*

Protected areas, which was subsequently amended and completed by other normative acts, among which the most significant are: GD no. 2151/2004 and GD no. 1581/2005 regarding the institution of protected nature areas regime for new zones; GD no. 1586/2006 concerning the framing of certain protected nature areas as wetlands of international importance; GD no. 1143/2007 regarding the institution of new protected nature areas; GD no. 1284/2007 and MO no. 1964/2007 in the framework of the Ecological Network *Natura 2000* in Romania). There is to be added an important number of protected nature areas declared through County Council Decisions, at the level of the territorial-administrative units bordered by the Danube (Fig. 1).

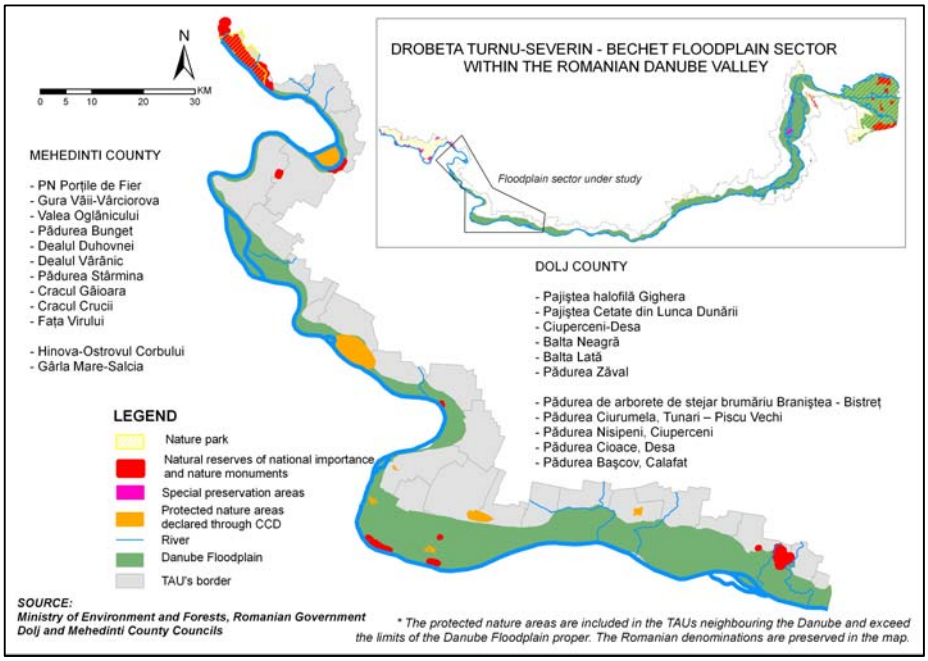

Fig. 1. The Danube Floodplain, Drobeta Turnu-Severin – Bechet sector. Protected nature areas of local and national importance

2.2. New forms of environmental protection in the Danube Floodplain. Case study: the Ecological Network Natura 2000

During the *Conference on Environment and Development* (Rio de Janeiro, 1992), when the *Convention on the biological diversity* was signed (also ratified by Romania through *Law no. 59/1994*), there was concluded that the effective protection of nature can only be realised on the basis of a comprehensive strategy, underlying on the principles of sustainable management (Schneider E. & Drăgulescu C., 2005) and the EU members decided to take effective measures for stopping the biodiversity decline. The preservation of the vulnerable plant and animal species, as well as of their habitats within the most representative natural spreading areas was seen as a requirement and, thus, the *Ecological Network Natura 2000* was founded.

The implementation of this process is based on two important aspects:

1. The designation of the sites on *strictly scientific* criteria. The characterization of the species and of the habitats included in the *Nature 2000* sites is documented starting from field scientific research and it is ended through the filling of a standard form (including data related to the biocenosis, biotope and other important aspects: ownership, management, vulnerability, geographical and legislative elements etc.), while their preservation status is to be monitored.

2. *The economic, social, and cultural realities of the area*. The aim of the Network is not to create certain *nature sanctuaries*, where all human activities are forbidden, but the achievement of the appropriate conditions for the man – nature balanced cohabitation. The development or the retaking of certain human activities can be an essential condition for the maintenance of some species or habitats of community interest. Their existence in a good preservation stage even in areas with heavy human impact ascertains the fact that the sustainable management of the natural resources is compatible with the human activities (Lazăr G. et al, 2007). *Natura 2000* represents a European network of the sites comprising natural elements that deserve to be preserved due to their numerous benefits, among which the presence of protected species is the most important. This does not mean strict protection or totally wild areas, where the human activities are forbidden. Many *Natura 2000* sites exist because of the human activities developed without affecting the species and the habitats.

The legal framework for the implementation of the *Network* is represented by two Directives of the European Commission: Directive 79/409/CEE regarding the preservation of wild birds (the *Birds Directive*), adopted on February 2nd, 1979, and Directive 92/43/CEE concerning the preservation of natural habitats, of wild flora and fauna (the *Habitats Directive*), adopted on May 21st, 1992.

These two directives were initially transposed into the Romanian legislation through the Law no. 462/2001 for the approval of the *Urgent Governmental Ordinance no. 236/2000 concerning the regime of the protected nature areas, the preservation of the natural habitats, of the wild flora and fauna*. Subsequently (2007), it was promulgated the Urgent Ordinance no. 57/2007, which repealed the Law no. 462/2001 and included more detailed provisions concerning the constitution of the Network *Natura 2000*, as well as the management of the sites and the control of the application of the legal regulations instituted for the sites. At the end of 2007, there appeared *The Order of the Ministry of Environment and Sustainable Development No. 1964/2007 concerning the institution of the protected nature areas regime for the Sites of Community Interest, as component of the Ecological Network Natura 2000 in Romania*, as well as *The Governmental Decision No. 1284/2007 concerning the declaration of Special Protection Areas as component of the Ecological Network Natura 2000 in Romania*. The exceptional natural capital

of the Danube Floodplain led to the protection of extended surfaces through their inclusion on this *Network* (Fig. 2).

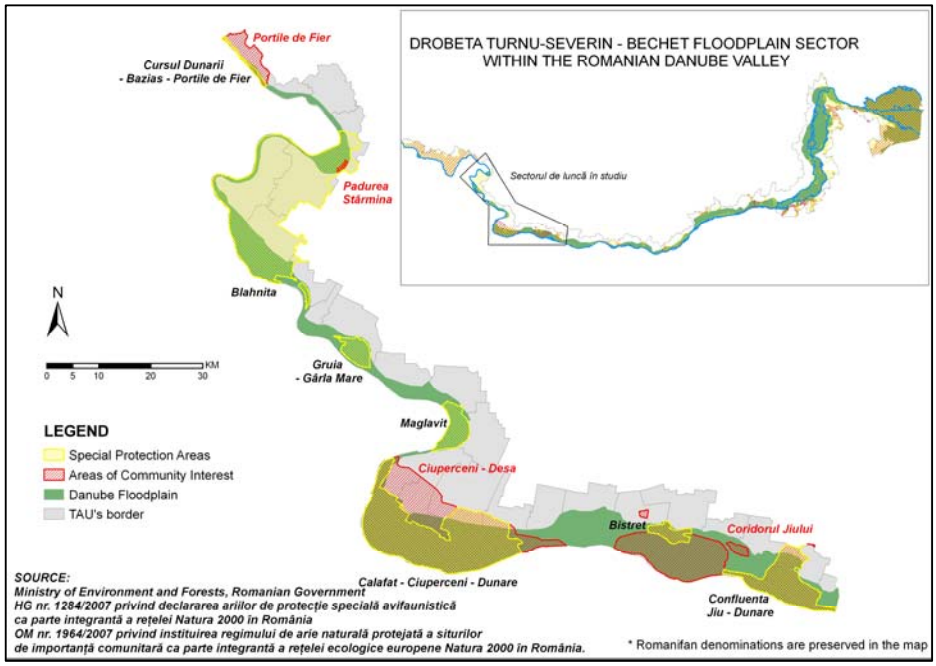

Fig. 2. The Danube Floodplain, Drobeta Turnu-Severin – Bechet sector. Elements of the ecological European network *Natura 2000*

Tables no. 1 and no. 2 concisely present the Special Protection Areas and the Sites of Community Interest that totally or partially fall in the Danube Floodplain, as well as their main characteristics.

Remarks concerning the Natura 2000 sites within the Danube Floodplain

The *Natura 2000* sites presented below are entirely characterised, even if often they only partially overlap the Danube Floodplain environment. The aspects presented in the two tables depart from the recordings and observations noted in the *Natura 2000 Standard Form.*

Five of the listed SPAs (Bistreț, Calafat - Ciuperceni - Dunăre, Confluența Jiu – Dunăre, Maglavit, Cursul Dunării - Baziaș - Porțile de Fier) are possible candidates to the RAMSAR status, each of them lodging more than 22,000 individuals of water birds during the migration period.

It is to be noticed the fact that most of the presented sites are not declared by the local or national legislation as protected areas, as the comparative analysis of the figures 1 and 2 can confirm. Some of them include protected areas declared through the Law no. 5/2000 (such as the Stârmina forest reserve, the Ciuperceni – Desa, Balta Lata, Balta Neagră reserves or the Porțile de Fier Nature Park), or through County Council Decisions (as in the case of the protected areas of local importance: Gârla Mare – Salcia or Hinova – Ostrovul Corbului).

Table no. 1

The main characteristics of the Special Protection Areas in the Danube Floodplain, Drobeta Turnu-Severin – Bechet sector

NO	INDICATIVE, DENOMINATION OF THE SITE	LAND COVER (type and percent)	IMPORTANCE	VULNERABILITY
1.	ROSPA0010 Bistreț (1,915.6 ha) – Dolj County	rivers, lakes (90); swamps (8); pastures (2)	It lodges important populations of certain protected bird species: a) number of species in Annex 1 of the *Birds Directive*: 24. b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 72. c) number of globally endangered species: 7. The site is important for the nesting populations of the species: *Platalea leucorodia, Ardeola ralloides, Egretta garzetta, Aytya nyroca,Cyrcus aeruginosus.* In the migration period, it becomes important for all water species, while during the winter period it is important for wild ducks and geese.	Located in the flood-prone area, the site is covered by water each time the Danube flow gets very high. Within the site there are to be noticed the piscicultural activities, with direct and indirect negative impact on the aquatic bird populations from the area.
2.	ROSPA0013 Calafat - Ciuperceni - Dunăre (29,024.3 ha) – Dolj County	rivers, lakes (8), swamps (16), natural grassland, steppe (9), crops/arable land (11), pastures (2), other arable fields (3), broad-leaved forests (35), vineyards, orchards (5), transition forests (11)	It receives important populations of certain protected bird species: a) number of species in Annex 1 of the *Birds Directive*: 39. b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 71 c) number of globally endangered species: 6 The site is important for the nesting populations of the species: *Ardea purpurea, Ardeola ralloides, Aytya nyroca, Botaurus stellaris, Burhinus oedicnemus, Caprimulgus europaeus, Chlidonias hybridus, Chlidonias niger, Ciconia ciconia, Ciconia nigra, Circus aeruginosus, Coracias garrulus, Egretta alba, Egretta garzetta.* During the migration period, the site becomes important for the following species: Ardeidae, geese, ducks (the last two also during wintering).	The site is situated in the flood-prone area and is covered with water when the flow of the Danube gets very high. The fishing activities and the poaching can make the site vulnerable.
3.	ROSPA0023 Confluența Jiu – Dunăre (21,999.9 ha) - Olt, Dolj Counties	rivers, lakes (17), crops/arable land (22), pastures (11), other arable fields (4), broad-leaved forests (40), transition forests (6)	It lodges important populations of certain protected bird species: a) number of species in Annex 1 of the *Birds Directive*: 34 b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 77 c) number of globally endangered species: 5 The site is important for the nesting populations of the species: *Crex crex, Haliaetus albicilla, Ciconia ciconia, Burhinus oedicnemus*. In the migration period, it becomes important for the following species: *Tringa glareola, Pelecanus crispus, Platalea leucorodia, Plecadis falcinellus*, while during the winter it is important for the species *Phalacrocorax pygmaeus*.	The extension of the human-modified surfaces and the pollution of the watercourses have negative influences upon the bird species within the area.
4.	ROSPA0074	rivers, lakes (37),	According to the data, there are the following categories of protected bird species:	The human activities

	Maglavit (3,562.6 ha) – Dolj County	swamps (13), pastures (12), broad-leaved forests (36), vineyards and orchards (2)	a) number of species in Annex 1 of the *Birds Directive*: 35 b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 89 c) number of globally endangered species: 5 The site is important for the nesting populations of the species: *Ciconia ciconia, Chlidonias hybridus, Himantopus himantopus, Recurvirostra avosetta, Ardea purpurea, Egretta garzetta, Emberiza hortulana.* During the migration period, the site becomes important for the species: *Aytya nyroca, Platalea leucorodia, Falco vespertinus, Pluvialis apricaria, Larus minutus, Philomachus pugnax, Phalacrocorax pygmaeus, Nycticorax nycticorax, Sterna hirundo, Tringa glareola.*	conducted within and in the surroundings of the site, the flooding of the area during the high-flow periods represent elements that increase the vulnerability of the site.
5.	ROSPA0011 Blahnița (45,286.3 ha) – Mehedinți County	rivers, lakes (7), swamps (6), crops/arable land (29), pastures (19), other arable fields (8), broad-leaved forests (16), vineyards and orchards (5), other artificial terrains (4), transition forests (6)	This site receives important populations of certain protected bird species. According to the data, there are the following categories: a) number of species in Annex 1 of the *Birds Directive*: 18 b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 88 c) number of globally endangered species: 5 The site is important for the nesting populations of the species: *Botaurus stellaris, Ixobrichus minutus, Nycticorax nycticorax, Ardeola ralloides, Ardea purpurea, Egretta alba and garzetta, Aytya nyroca.* During the migration and the winter periods, the site becomes important for the water species.	The water pollution with nitrates originating in agricultural activities increases the vulnerability. The wild fauna, especially the avifauna, experiences important disturbances when the sheltering conditions and the silence are modified through the cutting of wood vegetation, the circulation with domesticated animals, the burning of the reed and of the crop remains. The extension of the reed endangers the maintenance of those species that require free water surfaces (the tern) or swampy areas (the stilt).
6.	ROSPA0026 Cursul Dunării - Baziaș - Porțile de Fier (10,120.4 ha) – Mehedinți, Caraș-Severin Counties	rivers, lakes (100)	This site receives important populations of certain protected bird species. According to the data, there are the following categories: a) number of species in Annex 1 of the *Birds Directive*: 12 b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 62 c) number of globally endangered species: 3 During migration, the site is important for the following species: *Mergus albellus, Cygnus cygnus, Egretta alba, Aytya nyroca, Anas platyrhynchos, Phalacrocorax pygmaeus, Aytya ferina, Aytya fuligula, Bucephala clangula.* In the winter period, it becomes important for the species: *Mergus albellus, Cygnus cygnus, Egretta alba, Anas platyrhynchos, Phalacrocorax pygmaeus, Aytya ferina, Aytya fuligula, Bucephala clangula, Fulica atra.*	Vulnerability elements are constituted by the introduction of domesticated animals on the islets, as well as the fishing and hunting poaching actions. The protection of the habitats characteristic to the flora and fauna species is required in order to eliminate the negative impact of the disorganized and uncontrolled grazing, the osier cutting, the gathering of medicinal and aromatic herbs, the prelevation of

				construction material; there must be added the prevention of the water pollution with domestic waste and dejections from the households located upstream.
7.	ROSPA0046 Gruia - Gârla Mare (2,756.2 ha) – Mehedinți County	rivers, lakes (8), swamps (21), pastures (8), other arable fields (2), broad-leaved forests (35), vineyards and orchards (2), transition forests (24)	This site lodges important populations of certain protected bird species. According to the data, there are the following categories: a) number of species in Annex 1 of the *Birds Directive*: 19 b) number of other migrant species, listed in the annexes of the *Convention on migrant species* (Bonn): 89 c) number of globally endangered species: 6 The site is important for the nesting populations of the species: *Ayţya nyroca, Falco cherrug, Phalacrocorax pygmaeus, Nycticorax nycticorax, Phalacrocorax pygmaeus, Ardea purpurea, Egretta garzetta, Ardeola ralloides, Haliaeetus albicilla, Botaurus stellaris*. During migration, it becomes important for the following species: *Phalacrocorax pygmaeus, Phalacrocorax carbo*, while during wintering the site is important for the species: *Ayţya ferina, Phalacrocorax pygmaeus*.	The water pollution with nitrates originating in agricultural activities increases the vulnerability. The wild fauna, especially the birds, experiences important disturbances when the sheltering conditions and the silence are modified through the cutting of wood vegetation, the circulation with domesticated animals, the burning of reed and of the crop remains. The piscicultural arrangements affect the present bird populations, either nesting or in transit.

Source: Processing after the Governmental Decision 1284/2007 (Hotărârea de Guvern 1284/2007)

Table no. 2

The main characteristics of the Sites of Community Interest within the Danube Floodplain, Drobeta Turnu-Severin – Bechet sector

NO	INDICATIVE, DENOMINATION OF THE SITE	LAND COVER (type and percent)	IMPORTANCE	VULNERABILITY
1.	ROSCI0039 Ciuperceni-Desa (40,853 ha) – Dolj County	rivers, lakes (7), swamps (12), natural grasslands, steppe (7), crops/arable land (21), pastures (3), other arable fields (3), broad-leaved forests (30), vineyards, orchards (6), other artificial	There are to be remarked the habitats with *Salix alba* and *Populus alba*. The Ciurumela forest, located on the site of a former nursery is renowned through the giant acacia trees, which reach 70-80 centimetres in diameter and are 30-35 meters high, surpassing the naturally achieved dimensions within the origin area – North America. The acacia trees are important in fixating the moving sands that are a real problem in Southern Oltenia. At the shelter offered by the acacia forests, there gets installed an interesting vegetation, which includes a rare plant – *Molugo cerviana*.	Being located in the flood-prone area of the Danube, the site is covered by water when the flow of the river gets high.

		surfaces (2), transition forests (9).		
2.	ROSCI0045 Coridorul Jiului (71,394 ha) – Dolj, Olt, Mehedinți, Gorj Counties	rivers, lakes (16), swamps (11), crops/arable field (14), pastures (15), other arable fields (2), broad-leaved forests (38), transition forests (4).	The research underlines that the site is among the areas highly important for continental biodiversity preservation. Thus, although it holds only 0.5 percent of the national forest surface and 0.6 percent of the national surface, the site concentrates 9 of the 28 types of natural forest habitats that are protected by the Romanian and European Community legislation, among which 2 of the 6 that are on priority protection, disposed on 4 of the 11 phytoclimatic floors of Romania; other features: 56 of the 212 types of forest stations identified in Romania; 22 of the 50 forest formations, with 97 of the 306 forest types evidenced in Romania. The Jiu Valley is one of the main trans-Balkan migration corridors for the birds (the central-European-Bulgarian way) followed by an impressive birds number. Along with the sedentary ones, in the Jiu Corridor, there have been identified 135 of the 406 bird species observed in Romania, among which 114 are protected through Romanian and EC laws. The significant populations within the live inventory of the country, among which many rare sub-Mediterranean elements, other endemic and some protected offer remarkable specificity to the territory, which is underlined by: the concentration of vegetal associations with high bio-historical value, reflecting the interference of the southern thermophile elements with the central-European ones; the preservation of certain unaltered relict fragments of the archetypal forest structures located at the border of biogeographical areas or even disjunctively disposed or insularised by man (the greyish oak in the Braniştea Bistreţului Forest etc.); the lodging of important vegetal and animal populations whose preservation requires the appearance of special preservation areas and a strict observance of the protection etc. The sustainable capitalisation of this exceptional natural patrimony justifies and imposes: the use of the natural forest as a management standard for the applied silviculture that is close to the nature; the preservation of wild life, of certain relict natural habitats and of a local spring on important genes; the responsible management of the entire local natural patrimony and especially of the forest one; the maintenance of certain rare, uncommon forest landscapes; the officialising of a nature park that, through its multiple functions, would ensure the basis for the reconversion of the local labour force and employment in a field of national and international interest; the creation of a natural space for the ecological education and training; the promoting of ecotourism as a non-polluting income source, through the perpetuation of traditional local activities; the improvement of the decision-taking process, the sustainable environmental preservation, the protection of life and health and the increase of living quality.	The location of the site in three counties and nearby the city of Craiova requires the elaboration of a judicious plan of territorial arrangement, based on which the general urbanism plan of the afferent settlements could be periodically updated; in its turn, this set of documents would enable the elaboration of more detailed territorial plans. The elaboration of the territorial arrangement plan requires the harmonization of all present and future interests within this very heterogeneous space, in which the part of the forest fund (34 percent) and of the forest (33 percent) cannot decrease, just as in the case of other land cover categories that focus natural habitats protected through Romanian and Community laws. Thus, the pollution, the urbanization and other effects of the eco-destructive human intervention can be reconciled with the major requirements of sustainable development and of biodiversity preservation.

3.	ROSCI0173 Pădurea Stârmina (123 ha) – Mehedinți County		The value of this reserve is offered by the compact surfaces with butcher's broom (*Ruscus aculeatus*) and by the mix of different broad-leaved species. The landscape importance is not high, but the area located near the Small Danube is interesting.	The uncontrolled grazing prejudices the diversity of the elements within the grass cover.
4.	ROSCI0206 Porțile de Fier (124,293 ha) – Caraș-Severin, Mehedinți Counties	rivers, lakes (8), natural grasslands, steppe (2), pastures (10), other arable land (5), broad-leaved forests (69), transition forests (6)	The site is important for the preservation of the flora within the area of the Danube Defile (particularly the Danube *Cazane* and Moldova Veche Eyot), with nature reserves and vegetation bearing southern influences, the classic area of the plants *Tulipa hungarica* and *Campanula crassipies* (found on the list of the rare, respectively endangered species) and the Porțile de Fier - Gura Văii reserve, with the species *Prangos carinata* and *Dianthus serbicus*. The forest dominates the general landscape, the naturality index computed for *Porțile de Fier* site registering frequent values of 80 percent. On the site of the cleared thermophile forests there appeared thermophile shrubs, a secondary downy oak formation with a lot of hornbeam, manna ash and common lilac, to which there are to be added other sub-Mediterranean species. An important part of the mammals is given by the Microchiroptera, species of community interest, represented through the members of two families: Vespertilionidae (*Myotis bechsteinii, Myotis capacinii, Vespertilio murinus*) and Rhinolophidae (*Rhinolophus eurialis, Rhinolophus ferrumequinum, Rhinolophus blasii*). The carnivores are present both through large species (*Ursus arctos, Canis lupus, Lynx lynx*) and through small bodied ones (*Meles meles, Martes martes*). The herbivorous are best represented by *Cervus elaphus*, *Capreolus capreolus* and others. Of the 4,873 species recorded on the *Porțile de Fier* site, four gastropod species have special status (*Theodoxus traversalis, Anisus vorticulus, Herilla dacica, Helix pomatia*). The Insecta Class has five representatives with particular status, one in the Coleoptera order (*Lucanus cervus L.)* and the others in the Lepidoptera order (*Eriogaster catax L., Lycaena dispar rutilus Wernb., Parnassius mnemosyne wagneri Bryk, Kirinia roxelana Cr*.). The fauna of the site consists of 5,205 taxa, of which 4,873 are invertebrata and 332 vertebrata. Among the latter, high presence is to be noticed in the case of the Aves class (205 representatives), followed by the Pisces class (63 representatives), while the Amfibia class has a poorer representation (only 12 taxa). Among these species recorded in the *Porțile de Fier* site, the amphibian *Pelobates syriacus* and the reptiles *Testudo hermanni, Ablepharus kitaibelii, Lacerta praticola, L. muralis, L. taurica, L. viridis, Coluber jugularis* and *Vipera ammodytes* are strictly protected east-Mediterranean, respectively Mediterranean elements.	The small delta of the Nera represents, along with the Danube Delta, one of the youngest Romanian lands, which is in permanent development and, thus, it represents one of the most fragile ecosystems of the country. The balance can be rapidly disturbed through the direct action of certain factors, such as: the burning of vegetation, the high, prolonged water levels in relation with the floods, the invasive plant species; the indirect effects of other factors are also important: the pollution of the watercourses that cross the area, the increase of the sailing on the lower course of the river etc.

Source: Processing after the Order of the Ministry of Environment and Sustainable Development No. 1.964/2007 (Ordinul Ministrului Mediului şi Dezvoltării Durabile nr. 1.964/2007)

The major part of the presented *Natura 2000* sites do not have legally constituted administrative structures or an approved management plan. The exceptions are represented by *ROSPA0026 Cursul Dunării - Baziaş - Porţile de Fier*, for which the responsible is The Administration of the Porţile de Fier Nature Park (it has also realised the management plan) and *ROSCI0173 Pădurea Stârmina*, which is the responsibility of the Drobeta Turnu-Severin Forest Office, through the Şimian Forest Ward.

The delimitation of the sites on the basis of the topographical maps, scale 1:50,000, without including aerial photographs, underlined the requirement to re-digitize them on detailed maps or plans, with the use of the orthophotos, which would ensure the correlation with the present elements of the natural or man-induced environment and with the ownership situation, especially since compensatory payments are expected.

A very important aspect concerning the *Natura 2000* protected areas, but also those otherwise declared in the local or national legislation refers to their actual protection situation. Thus, in most of the theoretically protected sites within the Danube Floodplain the preservation and the protection are not real, enforced by law, but, when it is the case, it is rather a self-protection determined, among others, by the poor state of the infrastructure, which discourage the access. On the other hand, it is to be noticed the overwhelming lack of information of the local communities concerning the existence, the role, and sustainable capitalization possibilities of these protected areas.

Taking into account the principles on which *the Network* is organised, as well as the specific of the sites within the study sector of the Danube Floodplain, there can be concluded that *Natura 2000* represents a source of opportunities for the region:

- the development of an environmental-friendly tourism, of the agritourism based on tradition, local practices and ecological products;
- the continuance of the activities, in the case of the fish ponds, with the observance of the protection measures for the water bird species;
- the leisure activities near the fish ponds could be an option to increase the income, especially since financial support is offered through the *Fishing Operational Programme* for the sustainable management of the fisheries;
- there can be accessed European funds for the improvement of the infrastructure (guesthouses, access roads, observatories, information panels/points etc.).

2.3. Action projects for the environmental preservation and the sustainable development of the Danubian region

On January 21st, 2010, the European Parliament passed the resolution concerning *The European Strategy for the Danube Region*. Following the model of the *Baltic Sea Strategy*, this plan will have to promote the inter-regional cooperation, with the aim of developing the transport and energy infrastructure, as well as stimulating the economic growth and the sustainable social development. Related to the environmental protection, the resolution requires strategic and

impact assessments concerning the environment, including evaluations of the effects on the entire fluvial ecosystem; these actions must be a condition for all infrastructure projects in the transportation and energy domains.

The financing of the projects concerning the preservation/protection of the environmental components or the improvement of the living conditions within the predominantly rural space of the Danube floodplain relies of various sources. Only two of these financial instruments that play an important part in the sustainable development of the region will be mentioned. Firstly, there must be mentioned the financing originating in two EU funds – The European Fund for Regional Development and The Cohesion Fund (CF), the money being distributed on environmental sectors in the framework of *The Environmental Sectorial Operational Programme*. The second financial instrument is supplied through the European Agricultural Fund for Rural Development, which can be accessed after the passing of the *National Programme for Rural Development (2007 - 2013)*. In order to ensure the sustainable development of the rural spaces within the Danube Floodplain it is necessary to follow a limited number of fundamental objectives concerning the competitiveness of the agricultural and silvicultural activities, the land use and environmental management, as well as the quality of living and the diversification of the economic activities. The floodplain space can benefit from the measures regarded by the 2nd Pylon, which could support the farmers affected by the restrictions appeared as consequence of the legal appearance of the protected areas or *Natura 2000* sites. In this respect, there follows the compensation of the losses required by the conformation to the environmental standards imposed by the present legislation and this action may play a part in the sustainable development of the space on focus.

At the level of *the research projects with practical use in the Danube Floodplain*, during the last years and especially after the historical floods occurred in the spring of 2006, there existed certain significant demarches for the assessment of the environment of the Romanian Danube Floodplain and for the elaboration of proposals in the view of the capitalisation and protection of the natural and human capital hold by the region. In this framework, there is to be mentioned the study entitled *Redimensionarea ecologică şi economică în sectorul românesc al luncii Dunării*, realised by the National Institute for Research and Development Danube Delta, Tulcea in order to assist the Romanian Government in the process of strategic long-term planning for meeting the objectives imposed by the *Water Directive* and in the actual implementation of the requirements concerning the prevention, the protection and the diminution of the effects of floods. The study mentions that *the biological diversity, the functionality and the naturality of the ecosystems within the Lower Danube Floodplain represent a result of their evolution in time and of the succession of different "civilisations" that disturbed the balance of the initial environmental components* and that special attention must be paid to *the social management* of the environment in the Danube Floodplain (raising the awareness of the local communities and participatory activities that would involve them).

At the level of the floodplain sector on which the analysis of the environmental elements in the framework of sustainable development was particularised, there must be mentioned the project dedicated to ROSPA0010 Bistreț – *The management of a Natura 2000 site – Elaboration of preservation measures for the Special Protection Area Bistreț*, which developed in the framework of the Programme *NatuRegio. Nature Conservation and Regional Development in South – East Europe*. The project was proposed by the Romanian Ministry of Environment and it was implemented with the help of the Oltenia Museum (Nature Sciences Section), the University of Craiova (Geography Department) and the Dolj County Agency for Environmental Protection. The project aimed the assessment of the protected bird's populations within the site, of their habitats and ecological needs, as well as the impact of the human activities and of the risk phenomena on the avifauna. Besides the elaboration of the preservation measures for the bird species, which also take into account the particularities and needs of the human communities living near the site, the project proposed the expansion of the protected area and the inclusion of the western basins that are very important for the bird diversity. A significant component of this project was the permanent collaboration with the local actors (authorities and population). This was materialised through actions that aimed at raising the awareness and at involving the rural inhabitants, such as it was the case in the schools from Bistreț and Cârna settlements (Photo. 1). Indirectly, the conservative purposes were followed through the realisation and distribution of folders, posters and the placing of two information panels (Photo. 2).

Photo 1. Raising the awareness through activities conducted in the framework of SPA Bistreț connected project

Photo 2. Information panel placed in the centre of Bistreț settlement

3. INSTEAD OF CONCLUSIONS: SWOT ANALYSIS OF THE ENVIRONMENT IN THE STUDY SECTOR, IN THE VIEW OF SUSTAINABLE DEVELOPMENT

Without pretending to exhaust the problems of the region, some of these issues, along with certain solutions implied by the sustainable development demarche within the Danube Floodplain, Drobeta Turnu-Severin – Bechet sector were synthesised in the SWOT analysis (Table no. 3); it was realised in accordance with the three large criteria that correspond to the environmental subsystems.

Table no. 3

SWOT analysis of the environment in the Danube Floodplain, Drobeta Turnu-Severin – Bechet sector, in the view of sustainable development

CRITERION	STRENGHTS	WEAKNESSES	OPPORTUNITIES	RISKS
1. THE ECOLOGICAL SUPPORT AND THE BIOTIC SUBSYSTEM	▪ The floodplain – terrace contact provides very good habitation conditions; ▪ The varied micro-relief offers different possibilities of sustainable use; ▪ The presence of the hydrographical units and the location of the floodplain lead to the appearance of a favourable topoclimate for habitation and for various economic activities; ▪ The presence of mineral water (Ghighera); ▪ The Danube is an important transportation line; ▪ The relatively high soil fertility, in natural conditions; ▪ The specific and planted forests hold complex functions; ▪ The existence of complex and important habitats, which can be simultaneously preserved and valorised; ▪ Very high number of birds, many of which are rare or endangered at national or European level.	▪ The presence of the surfaces characterised by soils affected by gleyzation and salinization; ▪ The sand reactivation on certain deforested surfaces; ▪ In certain areas, the phreatic water hardness puts it at the potability limit; ▪ The neglecting of certain man-created relief forms (channels, dams, fisheries) and their degradation; ▪ The clogging of some basins, which is mostly noticed in the case of Bistreț Lake; ▪ The significant reduction of the fish and hunting fund; ▪ The degradation of certain ecosystems where the specific biocenoses were totally or partially destroyed and replaced with agro-ecosystems; ▪ Extended surfaces with randomly abandoned waste; ▪ The accentuation of drought.	▪ The possibility to use non-polluting energy forms: aeolian, energy, solar energy; ▪ The existence of extensive spaces available for afforestation, with all the benefits brought by the forest to the floodplain; ▪ Putting to good educative and tourist use the important natural museum represented by the preserved habitats and fauna elements specific to the Danube Floodplain; ▪ The valorisation of the soil conditions in certain areas for specific crops (apricots, peaches, grape-vine, peanuts etc.); ▪ The Danube offers opportunities for the development of the transportation sector.	▪ Flood occurrence; ▪ Downpours that alternate with long dry periods; ▪ Sometimes, very high temperatures during summer; ▪ Decrease of the bird diversity as a consequence of the changes occurred in the nutrition and nesting conditions; ▪ Continuation of the pollution with domestic waste in the absence of the specialized platforms or of a collecting system; ▪ The continuation of the illegal clearings would contribute to the appearance of soil erosion issues and to the flood risk increase; ▪ Drop of forest productivity as a consequence of climatic changes.
2. THE POPULATION, THE INFRASTRUCTURE AND THE SOCIAL-ECONOMIC FRAMEWORK	▪ 234,000 inhabitants, of which 130,000 live in urban settlements (Drobeta Turnu-Severin, Calafat, Bechet); ▪ The villages are diverse from the demographic viewpoint, the smallest one being Dunărea Mică (119 inhab.) and the larges one - Poiana Mare (11,149 inhab.); ▪ Availability of rural labor force; ▪ Overall homogeneity from the ethnic and religious viewpoints, with	▪ The accentuated demographic ageing at the level of most rural settlements is underlined by the high number of retired persons (sometimes surpassing the active population: Ghighera) and by the demographic decrease; ▪ Negative migratory balance in most of the villages; ▪ Low incomes of the population; ▪ The number of inhabitants that correspond to a doctor is high in the rural space (in many cases over 1,500	▪ The economic growth will lead to the improvement of the occupation degree and will attract the population in the area; ▪ The elderly persons can activate in certain sectors; ▪ Improvement of the energetic and hydraulic efficiency of the irrigation infrastructure through rehabilitation works; ▪ The diversification of the activities within the rural space can	▪ The continuation of internal and international migrations; ▪ The accentuation of the demographical ageing; ▪ Low professional mobility; ▪ Unwillingness to sign insurances; ▪ Poor capacity of EU funds absorption; ▪ The increase of the energy cost and the low hydraulic efficiency of the infrastructure

CRITERION	STRENGHTS	WEAKNESSES	OPPORTUNITIES	RISKS
	certain exceptions; ▪ High ratio of the households connected to the electric network; ▪ Access to the bus routes; ▪ Relatively high access to radio, television and mobile phone network; ▪ Relatively small distance to important urban centers, such as Craiova; also, it is mostly covered by rehabilitated roads; ▪ There are family doctor's offices in all communes; ▪ More than half of all villages benefit from the presence of elementary schools; ▪ Extended surfaces that are favourable to agriculture; ▪ Beginning of the development of the legal framework for rural financing; ▪ The existence of certain traditional products and activities specific to the Danube Floodplain; ▪ The presence of three important port-towns and the realization of other connections across the Danube (a future one at Rast).	inhab./doctor); ▪ High unemployment rate; ▪ High values of the demographic and economic dependency index; ▪ Low level of superior qualifications in any sector of activity; ▪ Low productivity level, which leads to general reduced incomes; ▪ Too many plots of agricultural or forest land and the existence of a high number of subsistence exploitations; ▪ Agricultural productivity under the potential; ▪ The new land and especially forest owners have limited capacities of property management; ▪ Difficulties in imposing the legislation to the private forest owners, who conducted illegal clearings; ▪ The trade networks are not yet developed to meet the needs of small exploitations; ▪ Non-functional irrigation systems; ▪ Poor development of services in the rural space; ▪ Poor usage of the tourist resources because of the deficiencies registered at the level of the infrastructure; also, there is no guest-house in the rural space; ▪ The basic rural infrastructure is poorly developed (roads, water supply/treatment, sewerage, gas); ▪ Limited access to the basic services (facilities for children, elderly etc.) ▪ Very low technical endowment in agriculture; ▪ The access roads to the Danube are	be supported; ▪ Instruction and appointment of a new generation of exploitation managers; ▪ The professional training helps to improve the competencies of the farmers; ▪ The fusion of the land plots and the appearance of exploitations can be supported through well directed actions and measures; ▪ The introduction of social-economic advisory services; ▪ Support programmes for the founding groups of producers; ▪ The orientation towards tourist activities that would put to good use the natural and cultural specific of the Danube Floodplain; ▪ The return to certain activities that were well developed on certain floodplain sectors in the past (eg.: silk-worms breeding).	will lead to the augmentation of the irrigation costs; ▪ The climatic changes and the natural calamities; ▪ The foreign competition on the market, sometimes even for the ecological products;

CRITERION	STRENGHTS	WEAKNESSES	OPPORTUNITIES	RISKS
		often very difficult to use; ▪ Low number of specialized medical offices, dentistries, pharmacies; ▪ Existence of paradoxical situations when old mentalities are preserved along with the easy acceptance of non-values.		
3. THE ENVIRONMENTAL PROTECTION	▪ High level of biodiversity associated to the agricultural fields, including large semi-natural grasslands, which can be classified as agricultural terrain with high agricultural value; ▪ The existence of numerous foreground species and habitats associated to the agricultural fields, displaying importance at national and international level (eg.: endangered bird species); ▪ The low agricultural consumption of chemical products favour the biodiversity preservation and the maintenance of a good water quality; ▪ The maintenance of some forest surfaces, which contribute to limitation of the erosion and to the biodiversity preservation; ▪ More than half of the floodplain sector is included in protection areas of national or European importance; ▪ The existence of strong financial instruments for the environmental protection.	▪ The population is an important polluting agent, especially through the domestic waste abandoned on the soil or in the water, correlated with the lack of specific infrastructure for sewerage and domestic waste management in the rural space; ▪ The near presence of more important pollution sources (eg.: at Kozloduy); ▪ Illegal clearings; ▪ The traditional agricultural practices that are important for the biodiversity preservation require a high volume of physical work and do not guarantee the economic viability of the farm; ▪ Low degree of awareness concerning the importance of the environmental-friendly agricultural practices; ▪ Low degree of awareness concerning the agricultural practices that reduce the pollution and enable the soil preservation; ▪ The ecological agriculture sector almost does not exist and the internal market is very small; ▪ Low degree of population awareness concerning the existence and the value of protected areas within the floodplain sector; ▪ The lack of management plans and of administrative bodies in the case of most declared protected areas; ▪ The lack of effective, real protection in the declared sites.	▪ The implementation of *Natura 2000* payments according to the EU Directives; ▪ Potential of improvement of the biodiversity preservation by means of training activities and counselling services; ▪ Potential of stimulation of the local communities in order to raise the awareness concerning the need of biodiversity preservation; ▪ Potential of increasing the forest surfaces through afforestation; ▪ Potential of extending the protected areas within the framework of *Natura* 2000, following the re-evaluation projects; ▪ Opportunities of natural potential capitalization through sustainable tourism forms associated with an adequate site administration; ▪ Possibilities to improve the water quality through investment in the water infrastructure within the rural space; ▪ Potential of improving the natural resources management through training and counselling activities, focused on environmental protection; ▪ Potential of stimulating the local communities to raise the awareness concerning the climatic changes issue.	▪ Accidental pollutions; ▪ Soil and landscape degradation; ▪ Continuation of clearings over the regeneration limit; ▪ Accidental radiation emissions at Kozloduy; ▪ Some agricultural tendencies imply higher contribution of chemical substances (eg.: high consumption of pesticides); ▪ Microclimate unbalances, following the climatic changes; ▪ The impact of natural disasters on biodiversity; ▪ The increased occurrence rate of the phenomena associated to climatic changes (eg,: floods, high temperatures, drought); ▪ Difficulties in raising the awareness of the population concerning the activities that are permitted/forbidden in different types of protected areas; ▪ Difficulties connected to the compensatory payments.

REFERENCES

ANTIPA GR. (1910), *Regiunea inundabilă a Dunării, starea ei actuală şi mijloacele de a o pune în valoare*, Institutul de Arte Grafice *Carol Göhl*, Bucureşti;

BĂLTEANU D., URDEA I. – coord. (2003), *Cercetarea integrată a mediului şi dezvoltarea durabilă*, Simpozionul tinerilor cercetători, Bucureşti, 14 decembrie 2001, Ars Docendi, Bucureşti;

BERCA M. (2000), *Ecologie generală şi protecţia mediului*, Ed. CERES, Bucureşti;

DALE, V. H., BROWN S., HAEUBER R., HOBBS N. T., HUNTLY N., NAIMAN R. J., RIEBSAME W. E., TURNER M. G., VALONE T. (2000), *Ecological principles and guidelines for managing the use of land*, Ecological Applications 10(3), the Ecological Society of America;

DUMITRAŞCU MONICA (2006), *Modificări ale peisajului în Câmpia Olteniei*, Ed. Academiei Române, Bucureşti;

FREEMAN R. E., STANLEY E. H., TURNER M. G. (2003), *Analysis and conservation implications of landscape change in the floodplain of the Wisconsin River*, USA, Ecological Applications, 13(2), the Ecological Society of America;

GERGEL SARAH E., TURNER MONICA G., MILLER J. R., MELACK J. M., STANLEY EMILY H. (2002), *Landscape indicators of human impacts to riverine systems*, Aquatic Sciences 64, EAWAG, Dübendorf;

LAZĂR G. et al (2007), *Habitate forestiere de interes comunitar incluse în proiectul LIFE05 NAT/RO/000176: Habitate prioritare alpine, subalpine şi forestiere din România. Ameninţări potenţiale*, Ed. Universităţii Transilvania, Braşov;

MOHAN GH., ARDELEAN A. (1993), *Ecologie şi protecţia mediului,* Ed. SCAIUL, Bucureşti;

O'NEILL R. V., HUNSAKER C. T., JONES K. B., RIITTERS K. H., WICKHAM J. D., SCHWARTZ P. M., GOODMAN I. A., JACKSON B. L., BAILLARGEON W. S. (1997), *Monitoring environmental quality at the landscape scale*, BioScience Vol. 47, No. 8;

PĂTROESCU MARIA, GHINCEA MIOARA, CENAC-MEHEDINŢI MARTA, TOMA SIMONA, ROZYLOWICZ L. (2000), *Modificări antropice în coridorul fluvial al Dunării şi reflectarea lor în starea mediului*, in *Geographica Timisiensis,* VIII-IX, Timişoara;

PRIMACK B. R. et al (2002), *Conservarea diversităţii biologice*, Ed. Tehnică, Bucureşti;

ROŞU A., UNGUREANU IRINA (1977), *Geografia mediului înconjurător*, Ed. Didactică şi Pedagogică, Bucureşti;

SCHNEIDER E., DRĂGULESCU C. (2005), *Habitate şi situri de inters comunitar*, Ed. Universităţii *Lucian Blaga*, Sibiu;

TOMESCU VIORICA (1998), *Lunca Dunării – sectorul oltean*, Ed. Sitech, Craiova;

TURNER M. G., GARDNER R. H., O'NEILL R. V. (2001), Landscape Ecology in Theory and Practice, Springer-Verlag, New York;

VĂDINEANU A. (1998), *Dezvoltarea durabilă. Teorie şi practică*, Ed. Universităţii din Bucureşti;

VĂDINEANU A., NEGREI C., LISIEVICI P. – coord. (1999), *Dezvoltarea durabilă. Mecanisme şi instrumente*, Ed. Universităţii din Bucureşti;

*** (1969), *Geografia Văii Dunării Româneşti*, Ed. Academiei Române, Bucureşti;

*** (1983) *Geografia României*, vol. I, *Geografia fizică*, Ed, Academiei Române, Bucureşti;

*** *Legea Nr. 5/6 martie 2000* privind aprobarea *Planului de amenajare a teritoriului naţional - Secţiunea a III-a - Zone protejate* (M.O. Nr. 152/12.IV.2000);

*** (2005), *Geografia României*, volumul V, *Câmpia Română, Dunărea, Podişul Dobrogei, litoralul românesc al Mării Negre şi platforma continentală*, Ed. Academiei Române, Bucureşti;

*** *Hotărârea de Guvern 1284/2007 privind declararea ariilor de protecţie specială avifaunistică ca parte integrantă a Reţelei Natura 2000 în România* (M.O. Nr. 739/31.X.2007);

*** *Ordinul Ministrului Mediului şi Dezvoltării Durabile nr. 1.964/2007 privind instituirea regimului de arie naturală protejată a siturilor de importanţă comunitară, ca parte integrantă a reţelei ecologice europene Natura 2000 în România* (M.O. Nr. 98 bis/7.II.2008)*;*

*** (2008), *Redimensionarea ecologica si economica pe sectorul romanesc al Luncii Dunarii. Scenarii hidrologice în lunca Dunarii utilizand modelul hidraulic al Dunarii*, Ministerul Mediului si Dezvoltarii Durabile (în prezent Ministerul Mediului şi Pădurilor), Institutul National de Cercetare Dezvoltare Tulcea, Romania;

*** *Programul Operaţional Sectorial de MEDIU 2007 – 2013*, Ministerul Mediului şi Pădurilor (denumirea actuală);

*** *Programul Naţional de Dezvoltare Rurală 2007 – 2013*, Ministerul Agriculturii şi Dezvoltării Rurale;

*** *Strategia Naţională pentru Dezvoltare Durabilă a României*, Orizonturi 2013 – 2020 – 2030.