Annex

National strategy and Action plan for biodiversity conservation

2014 – 2020

LIST OF ABBREVIATIONS

AEWA African-Eurasian Migratory Water bird Agreement
AFM Administration of Environment Fund
AM Management Authority
ANAR "Romanian Waters" National Authority
ANCPI National Agency of Cadastre and Land Registration
ANCS National Authority for Scientific Research
ANV National Customs Authority
AP Natural protected areas
APL Local Public Administration
APM County Agency for Environmental Protection
AR Romanian Academy
ARACIP Romanian Agency for Quality Assurance in Pre-university Education
ARACIS Romanian Agency for Quality Assurance in Higher Education
ARPM Regional Environmental Protection Agency
ARBDD "Danube Delta" Biosphere Reserve Administration
RB Biosphere Reserve
CBD Convention on Biological Diversity
CCIR Romanian Chamber of Industry and Commerce
CE European Commission
CEPA Communication, Education and Public Awareness
CHM Clearing-House Mechanism (information mechanism)
CNCSIS National Council for Higher Education Scientific Research
CSNR National Strategic Reference Framework
EA Adequate Assessment
EIA Environmental Impact Assessment
ETP Potential Evapotranspiration
EUROBATS Agreement on conservation of European bats
FAO Food and Agriculture Organization
FC Cohesion Funds
FEADR European Agricultural Fund for Rural Development
FEDR European Fund for Rural Development
FM Environmental Fund
FSE European Social Fund
GEF Global Environmental Fund
GNM National Environmental Fund
ICAS Forest Research and Management Institute
IMO International Maritime Organization
INCDM "Grigore Antipa" National Maritime Research – Development Institute
INMH National Meteorology and Hydrology Institute
INS National Statistics Institute
IPCC International Committee for Climate Changes
IUCN International Unit for Conservation of Nature
LIFE Financial Environmental Instrument of the European Commission

MADR Ministry of Agriculture and Rural Development
MAE Ministry of External Affairs
MAI Ministry of Administration and Interior
MApN Ministry of National Defence
MC Ministry of Culture
MDRAP Ministry of Regional Development and Public Administration
ME Ministry of Economy
MEN Ministry of National Education
METT Analysis by the Management Effectiveness Tracking Tool
MFP Ministry of Public Finances
MM Ministry of Environment
MMGA Ministry of Environment and Water Management
MMSC Ministry of Environment and Climate Changes
MSI Ministry for Information Society
MT Ministry of Transportation
OI Intermediary Body
ONU United Nations Organization
OUG Government Emergency Ordinance
OMM Global Meteorology Organization
OMG Genetically Modified Organism
ONG Non-governmental Organization
PIB Gross Domestic Product
PFI Intact Forest Landscape
PN Natural or National Park
PND National Development Plan
PNDR National Programme for Rural Development
POR Regional Operational Programme
POP Fishing Operational Programme
POS DRU Sectorial Operational Programme for Human Resources Development
POS Mediu Sectorial Operational Programme Environment
POS Transport Sectorial Operational Programme Transport
PoWPA Programme of Work on Protected Areas of Convention of Biological Diversity
RAPPAM Rapid assessment and prioritization of protected area management
RBDD Danube Delta Biosphere Reserve
RNP National Forest Administration - Romsilva
SCI Community interest sites
SEA Strategic Environmental Assessment
SNPACB National strategy and Action plan for biodiversity conservation
SPA Special Protection Areas
UNDP/PNUD United Nation Development Program
UNCDD United Nations Convention to Combat Desertification
UNCED United Nation Conference for Environment and Development
UE European Union

Content

H. Support and promotion of knowledge, traditional practices and innovations
I. Scientific research development and promotion of technology transfer
J. Communication, education and public awareness

Chapter 5 – National action plan for biodiversity conservation

Chapter 6 – NBSAP implementation – responsible authorities, necessary financial resources and reporting indicators

Chapter 1

INTRODUCTION

1.1 BIODIVERSITY AND IMPORTANCE OF ITS CONSERVATION

The concept of biodiversity or biological diversity was defined for the first time in the context of adopting the new international environmental instrument, within UNCED Earth Summit from 1992 in Rio de Janeiro. This signifies life diversity on earth and involves four approach levels: diversity of ecosystems, species diversity, genetic diversity and ethno-cultural diversity.

From conceptual point of view, biodiversity has intrinsic value, being also associated to it the ecological, genetic, social, economic, scientific, educational, cultural, recreational and esthetical values.

Representing the primary condition of human civilization existence, biodiversity ensures the support system of life and socio-economic development. Stability, intra- and interspecific connections are found within natural and semi-natural ecosystems by which material, energetic and information exchanges are carried out, which ensure their productivity, adaptability and resilience. These interconnections are extremely complex, being difficult to estimate the importance of each species in the functioning of these systems and the potential consequences of reducing their numbers or disappearance, for ensuring long-term survival of ecological systems the main provider of resources on which the human development and welfare depend. Therefore, biodiversity conservation is essential for ensuring the survival of any life forms, including of humans.

The economic value of biodiversity becomes obvious through the direct use of its components: natural non-renewable resources – fossil fuels, minerals and other similar ones and renewable natural resources – species of plants and animals used as food or for the production of energy or for the extraction of substances, such as those used in the pharmaceutical or cosmetic industry. In the present, it cannot be said that all the species valences and the way in which they can be used or accessed in the future are known, thus the loss of any of them limits the opportunities of humankind development and efficient use of natural resources. It is equally important the role of biodiversity in ensuring the services provided by ecological systems, such as the regulation of pedoclimate conditions, water purification, reduction of effects of natural disasters and other similar ones.

The costs of biodiversity loss or degradation are very hard to establish but the studies carried out until now at global level show that these are substantial and increasing. In the first report of the project on economic assessment of ecosystems and biodiversity at international level and published in 2008, it is estimated that the annual loss of

ecosystem services is the equivalent of EUR 50 billion and that until 2050 the accumulated losses with respect to welfare will rise to 7% of GDP[1]. Although the direct value of biodiversity cannot be established, the economic value of goods and services provided by ecosystems was estimated between USD 16 – 54 trillion/year (Costanza *et al.*, 1997). The values were calculated taking into account the services provided by ecosystems: food production, raw materials, climate and air gas control, circuit of nutrients, of water, erosion control, soil formation and other similar ones.

The average value of services provided by ecosystems – USD 35 trillion/year is almost double than the gross domestic product at global level, estimated in the same study at USD 18 trillion/year.

Biodiversity plays an important role in the life of any society, being reflected in its culture and spirituality (folklore, art, architecture, literature, traditions and practices of using the lands and resources and other similar ones).

The esthetical value of biodiversity is a fundamental human necessity, the natural and cultural landscapes being the basis for the development of tourism and recreational sector.

From ethical point of view, each biodiversity has intrinsic inestimable value and human society has the obligation to ensure their conservation and sustainable use.

1.2 OBJECTIVES AND PRINCIPLES OF BIODIVERSITY CONSERVATION

In June 1992, within UNCED, a number of 153 states, including the European Union, signed CBD, which entered into force on December 29th 1993. At the beginning of 2010, CBD was ratified by 193 parties and it is nowadays the most important international instrument in the coordination of policies and strategies at global level on biodiversity conservation. Romania ratified CBD through Law no. 58/1994.

The three objectives of CBD are the following:

a) conservation of biological diversity
b) sustainable use of biological diversity components
c) correct and fair distribution of benefits resulting from the use of genetic resources.

Also, the Agenda 21, the Rio Declaration on Environment and Development, the Declaration of Forest Principles and the UN Framework-Convention on Climate Changes ratified through Law 24/1994 were adopted at the Earth Summit.

[1] COM (2009) 400

Within the Conference of the Parties at CBD, the principles underlying the biodiversity conservation and sustainable development of socio-economical system were also adopted, presented as follows:

1. **Principle of prevention**: biodiversity conservation is carried out efficiently if the effects of potential threats are eliminated or reduced;
2. **Principle of precaution:** the lack of complete scientific studies cannot be considered reason for accepting activities that can have negative significant impact on biodiversity;
3. **Polluter pays principle:** the person who causes biodiversity destruction must pay the costs for prevention, impact reduction or ecological reconstruction;
4. **Principle of public participation at decision-making and access to information and justice in the field of environment:** the public must have access to environmental information and the right to take part in the environmental decision-making process;
5. **Principle of good governing:** governing must have eight major characteristic – to be participative, measurable, transparent, responsible, effective and efficient, fair and according to legal norms;
6. **Principle of sectorial integration:** biodiversity conservation and sustainable use of its components must be taken into account in the process of decision-making and establishing sectorial policies;
7. **Principle of ecosystemic approach:** it is an integrated management strategy, based on the application of corresponding scientific methodologies, which take into account the structure and functions of ecosystems and their support capacity;
8. **Principle of ecological networks:** ecological connection corridors are established for ensuring the connectivity between the components of biodiversity, landscape and social structures;
9. **Principle of subsidiarity:** it regulates the exercise of power, the decisions being made at the lowest level (local, regional, national);
10. **Principle of compensation:** if there is a negative impact and in the absence of alternative solutions, compensatory measures are established for major public interest objectives.

1.3 POLICY AND STRATEGY OF THE EUROPEAN UNION IN THE FIELD OF BIODIVERSITY CONSERVATION

The European Union ratified CBD on December 21st 1993 and for the implementation of Convention provisions, it assumed the role of leader at international level, adopting a series of strategies and action plans aimed to contribute to the interruption of biodiversity loss until 2010 and after, according to the Communication of the European Commission to the Council, European Parliament, European Economic and Social Committee and Committee of Regions no. 864 final/16.12.2008. The strategic plan for CBD has the purpose of reducing the actual rate of biodiversity loss at global, regional and national level as a contribution to the reduction of poverty and in the benefit of all life forms on earth and it must be transposed accordingly at the level of member states. This responsibility was centred on the creation of the European ecological network

which includes a representative sample from all species and community interest natural habitats for their adequate protection and guaranteeing their long-term viability. This ecological network – called **Nature 2000** – opposes the actual tendency of fragmentation of natural habitats and it is based on the real fact that the development of socio-economic systems can be only carried out based on natural and semi-natural ecological systems. The legal obligations of member states in the field of nature protection are included in Directive no. 79/409/EEC of the Council from April 2nd 1979 on the conservation of wild birds, amended by Directive 2009/147/EEC (called "Birds" Directive for short) and Directive no. 92/43/EEC of the Council from May 21st 1992 on the conservation of natural habitats and wild flora and fauna species (called "Habitats" Directive for short).

Within the reunion on environment from March 2009, the Council requested the elaboration at EU level of a new perspective and new objective in matters of biodiversity, based on and contributing to the international debates related to the global perspective on biodiversity after 2010, as part of the updated strategy to be adopted until the end of 2010 for CBD implementation.

In January 2010, the document on the **Options for post-2010 perspective and objective in matters of biodiversity at EU level** was adopted through the Commission Communication to the European Parliament, Council, European Economic and Social Committee and Committee of Regions no. 4 final/19.01.2010. The analysis of EU strategy implementation on biodiversity conservation emphasized a series of positive results but also deficiencies.

One of the achievements is Nature 2000 network, which covers 17% of EU territory, being the vastest network of protected areas in the world. The ecosystemic approach underlies the Framework directive on water (Directive no. 2000/60/EC of the European Parliament and Council from October 23rd 2000 for establishing the framework of community policy in the field of water) and of the Framework directive on the strategy for the maritime environment (Directive no. 2008/56/EC of the European Parliament and Council from June 17th 2008 for the institution of the community action framework in policy on the maritime environment), which aims to achieve the good ecological state of ecosystems, taking into account the accumulated pressures. Other positive results derived and will continue to derive from the implementation of legislation focused on the reduction of certain pollutants and other legal texts in favour of biodiversity, from the efforts to better integrate the aspects related to biodiversity in other political areas, as well as the common policy in fishing after the reform from 2002 and by increasing the financial opportunities in favour of biodiversity, provided by different EU policies, including the Common Agricultural Policy (CAP).

One major deficiency was signalled at decisional level, the current policy not taking sufficiently into account the value of services provided by ecosystems, which cannot be supported only by conservation biodiversity measures. The high levels of species and habitat conservation is only one of essential components, but many services are carried

out outside natural protected areas. Trying to cover this deficiency, the Commission will complete the first set of maps of ecosystemic services and the European Environmental Agency (AEM) will complete the audit and assessment of services provided by ecosystems until the end of 2010.

Moreover, while the community regulations contribute to guaranteeing the reduction of effects which the infrastructure development and land management at EU level have on the environment, according to the principle of subsidiarity, by developing the "green infrastructure" and associated investments on EU territory outside Nature 2000 network.

In order to implement the EU strategy on biodiversity conservation, the Action plan was established, with the following priority objectives:
Objective 1. Maintenance of diversity of ecosystems, habitats and biomes inside protected areas
Objective 2. Maintenance of specific diversity by:
2.1 Reducing the decline, restoration and maintenance of conservation state of populations belonging to protected species
2.2 Improving the statute of endangered species.
Objective 3. Maintenance of genetic diversity by:
3.1 Genetic diversity conservation of culture plants, domestic animals, species with economic importance, as well as the maintenance of use traditions of local communities.
Objective 4. Reduction of pressures due to changing the destination of lands and which lead to the loss of natural and semi-natural habitats
Objective 5. Limitation of negative impact of invasive species
Objective 6. Halting unsustainable exploitations by:
6.1 Sustainable exploitation of biodiversity components used in natural condition or as derived products
6.2 Management of production areas according to the requirements for biodiversity conservation.
6.3 Prohibition at international level of trade with endangered flora and fauna species.
Objective 7. Reduction of pressures due to climate changes, pollution and soil erosion.
Objective 8. Maintenance of the capacity of ecosystems to provide ecological goods and services and to function as life support system by:
8.1 Maintaining the support capacity of ecosystems.
8.2 Halting the decline of biological resources, traditional knowledge of local communities, techniques and practices that allow the sustainable exploitation and food safety.
Objective 9. Assurance of correct and fair distribution of benefits resulted from the use of genetic resources.

The measures established for halting the biodiversity loss are found also in "The 7th Environmental action plan (2014-2020)" to be adopted this year and will contribute to

the achievement of Europe 2020 objectives of sustainable, intelligent and inclusion-favourable growth.

At European level, biodiversity conservation acquired a new dimension, the emphasis being lately laid more on the understanding and assessment of landscapes, as dynamic systems subject to natural and society transformations. The landscape is a part of the territory perceived as such by the population, the character of which is the result of action and interaction of natural and/or human factors. It directly influences the life quality, being an essential factor in achieving and illustrating social and personal welfare, contributing to the formation of cultures and to the consolidation of local identity. Consequently, the landscape is a decisive element of the European and national identity.

In order to directly contribute to the landscape conservation, the European Landscape Convention, ratified by Romania through Law no. 451/2002, was launched for signature in 2000. This outlines the importance of landscape conservation not only for the esthetical value but also for the quality of human and natural life. For this purpose, the concept of European landscape was enlarged through a series of advanced studies carried out by Landscape Europe organization which launched for debate the inclusive notion of *Euroscape 2020* and *Leisurescape 2020* as target for the European population in 2020, being discussed in the political agenda of EU governing.

1.4 ROMANIAN POLICY ON BIODIVERSITY CONSERVATION

The activity of biodiversity conservation in Romania has a relatively long history, developing according to the human preoccupations, the first rules aiming nature protection, being found in the old Romanian law starting with the 15th century**.** These evolve until the 19th century, providing the good conservation of natural resources, being a legislation which imposed a set of strict rules and measures. After signing the Treaty from Adrianople, in 1829, the trade is liberalized, the culture of cereals requested for export is favoured, determining the unprecedented deforestation of forests through the increase of agricultural areas and leading to the emphasized soil degradation.

The preoccupations aiming directly the nature protection are manifested especially with the 20th century. Between 1922 and 1928, an intense activity for nature protection is carried out, supported by important names from the world of biology, geology, geography and forestry. In 1930, the first ***Law for the protection of natural monuments*** was adopted, which marked the beginning of the new stage of nature protection in Romania. Based on this normative act, the first *Commission for the protection of natural monuments* was founded. Its activity had a scientific research nature materialized through the publication of many studies, notes or works which underlay the legal protection of valuable objectives as natural monuments: 15 protected species of plants and 16 species of animals and 36 natural reserves of approximately 15.000 ha, among which Retezat National Park founded in 1935. Subsequently, the

legal and institutional system continues its development until the end of the Second World War and it regresses in the communist period. After 1990, the activities of biodiversity conservation are continued and consolidated through the elaboration of new normative acts and the creation of adequate institutional structures.

The strategic reference documents which ensure both the horizontal promotion of biodiversity conservation and sustainable use of its components, as well as the financing of projects in this area, starting from the national and European policy, are the following:

1. **The Accession Treaty** of Romania to the European Union, signed on April 25th 2005, and the Protocol include the concrete commitments of Romania to transpose, implement and control the application of the entire environmental *community acquis* and provide some transition periods of the implementation of environmental obligations (until December 31st 2015 for the industrial plants falling under the incidence of Directive no. 96/61/CE of the Council from September 24th 1996 on the prevention and integrated control of pollution, until December 31st 2016 for the municipal waste deposits, until December 31st 2018 for the requirements on the residual urban water collection and treatment systems).

2. **National Development Plan 2007-2013** (PND) is the strategic planning and multiannual financial programming document which orients and stimulates the economic and social development of the country according to the Cohesion Policy principles of the European Union. The plan establishes as global objective the reduction as fast as possible of social and economic development differences between Romania and the other member states of the European Union and details the specific objectives of the process in 6 priority directions which directly and/or indirectly integrate the requirements of biodiversity conservation and short and medium term sustainable development:
    a) competitiveness increase and economy development based on knowledge must include one of the main sub-priorities, the improvement of energy efficiency and capitalization of energy renewable resources for the reduction of causes that lead to the climate changes and their effects;
    b) basic infrastructure compliance with the European standards which emphasizes the sustainable development of infrastructure and means of transport by reducing the environmental impact;
    c) maintenance and improvement of environment quality must be a priority which leads to the improvement of life standards based on ensuring the public utility services, especially concerning the water and waste management;
    d) improvement of sectorial and regional systems of environmental management;
    e) biodiversity conservation and ecological reconstruction;
    f) prevention of risks and intervention in case of natural disasters;

g) development of rural economy and productivity growth in agricultural, forestry and fishing sectors must be based on the rational use of the land, ecological rehabilitation of degraded lands, food safety, welfare of animals, aquaculture encouragement in coast areas;
h) reduction of development discrepancies between regions and inside them must take into account the improvement of administrative performance and local public infrastructure, protection of natural and cultural patrimony as part of integrated rural development, restoration of urban areas affected by industrial restructuring, consolidation of business environment and innovation promotion.

3. **National Strategic Reference Framework 2007-2013** (CSNR), approved by the European Commission on June 25th 2007, establishes the intervention priorities of EU Structural Instruments (European Fund for Rural Development - FEDR, European Social Fund - FSE and Cohesion Fund - FC) within the policy of economic and social cohesion and links the priorities of the National Development Plan 2007-2013 and those of EU established by the Community Strategic Guidelines on Cohesion 2007-2013 and the revised Lisbon Strategy. In order to achieve the strategic vision of CSNR, within the cohesion policy, EC allocated Romania for the period 2007-2013 the total amount of approximately Euro 19.67 billion, of which 19.21 billion for the Convergence objective (with national co-financing estimated at Euro 5.53 billion consisting in proportion of 73% of public sources and 27% of private sources) and Euro 0.46 billion for the European Territorial Cooperation objective.

4. **National Strategy for Sustainable Development of Romania – Horizons 2010 –2020-2030)** establishes the concrete objectives for the passage, in a reasonable and realistic period of time, to the development model that generates high added value, oriented to the continuous improvement of personal life quality, in harmony with the natural environment. The objectives formulated in the Strategy aim the maintenance, consolidation, extension and continuous adaptation of biodiversity structural configuration and functional capacity as basis for the maintenance and development of its support capacity towards the pressure of social development and economic growth and towards the predictable impact of climate changes. The main action directions for the appropriation and application of sustainable development principles are the following:
   a) Rational correlation of development objectives, including of investment programmes, with potential and capacity to support biodiversity;
   b) Accelerated modernization of educational, professional training and public health systems, taking into account the unfavourable demographic evolutions and their impact on the labour market;
   c) Use of the best available technologies from economic and ecologic point of view in the investment decisions from public funds and the stimulation of such decisions from the private sector; the firm introduction of eco-efficiency criteria in all production or services activities;

d) Anticipation of effects of climate changes and the elaboration of long term adaptation solutions and plans of inter-sectorial contingency measures, comprising portfolios of alternative solutions for crisis situations generated by natural or human phenomena;
e) Assurance of food security and safety by valorizing the comparative advantages of Romania concerning the development of agricultural production development, including of ecological products; the correlation of measures of quantitative and qualitative growth of agricultural production in order to provide food for people and animals with the increase requirements of bio-fuel production, without compromising the exigences on the maintenance and increase of soil fertility, biodiversity and environmental protection;
f) Necessity to identify additional financing sources, in conditions of sustainability, for running large-scale projects and programmes, especially in the areas of infrastructure, energy, environmental protection, food safety, education, health and social services;
g) Protection and exploitation of the national cultural and natural patrimony.

5. **National Strategy for Rural Development**, implemented in the period 2007-2013 based on the provisions of Regulation (EC) no. 1698/2005 of the Council from September 20th 2005 on the support for rural development granted from the European Agricultural Fund for Rural Development (FEADR), through the National Programme for Rural Development, provides consistent financial resources for supporting the introduction or continuation of applying agricultural methods compatible with the environment protection and improvement, its landscape and characteristics, natural resources, soil and genetic diversity. Approximately 26% of the total financial allocation of PNDR is dedicated to the measures of Axis II, the main priority of which is the biodiversity conservation in agricultural and forest areas.
6. **National Strategic Plan for Fisheries,** implemented in the period 2007-2013 through the Operational Programme for Fisheries, according to the provisions of Regulation (EC) no. 1198/2006 of the Council from July 27th 2006 on the European Fisheries Fund, by developing the general objective concerning "The development of competitiveness and sustainability of primary fishing sector", includes and allocated financial resources for the promotion of a sustainable aquaculture sector, as well as the maintenance of the sustainable level of fishing activity in national waters.

1.6 NATIONAL STRATEGY AND ACTION PLAN ON BIODIVERSITY CONSERVATION (SNPACB)

As signatory state of CBD, Romania has the obligation to apply the provisions of art. 6 which stipulates that the Parties must *"elaborate national strategies, plans and*

programmes of biological diversity conservation and sustainable use of its components or adapt the existing strategies, plans or programmes for this purpose".

Until now, two SNPACBs have been elaborated, first in 1996, two years after the ratification of CBD by Romania and the second in 2000, following the decision of accession to the European Union and takeover of community acquis.

The third SNPACB refers to the period 2014 – 2020 and it was carried out within UNDP/GEF project: "Support for the Conformity of the National Strategy and Action Plan with CBD for Biodiversity Conservation and achievement of Information Mechanism (Clearing-House Mechanism - CHM)". The content and mode of achievement were established taking into account the Decision VIII/8 from 2005 on the *Guidelines for* SNPACB *revision.*

The methodology used was based in detail on the actual situation for the assessment of the current biodiversity conservation state at national level, the identification of direct threats and causes that determine or can determine the loss of biodiversity, as well as the analysis of the way in which the legal and institutional system meets the requirements from this area. The obligations, threats and obstacles were prioritized and the strategic and operational objectives were identified. A set of actions was established for each operational objective and the implementation period, responsible authorities, estimated budget and financing sources, priority degree and performance indicators were established for each action. The budget of each action was estimated depending on its specificity, based on previous financial studies and assessments and which include personnel/consultancy, equipment, works execution and other similar costs. The prioritization of actions was established depending on the gravity of threats, vulnerability of biodiversity components and conformity obligation with the international and community requirements for biodiversity conservation.
The conceptual framework and action directions were established in the first stage and a group of experts who draw up the document on competence areas was selected. For coherence and identification as exact as possible of the existing situation and barriers, after the first analysis stage, the document was subject to public debate, being distributed to all stakeholders and presented within the work meeting with them.

The second stage consisted in outlining the Strategy and Action Plan, document also subject to public debate within the national work meeting at which the representatives of stakeholders participated.

After the analysis of received comments, the last form of SNPACB was drew up and transmitted to the central public authority for the environmental protection in order to accept and adopt the strategic document through the Government Decision.

The elaboration process was based on the participative mechanism, as revealed by the following figures:

a) 3 debates at national level: 1 – for the description phase of existing situation and the formulation of strategic action directions; the 2nd for the introduction of the first set of proposals on the National Action Plan; the 3rd concerning consolidate SNPACB document, as a whole. All of these events consisted in transmitting the project documents to almost 3.000 institutions from the project database, posting on UNDP, UEB and MMSC sites and organizing open work meetings, at the last of these being extended the area of public consultation by posting on CHM and other institutional sites but also by publishing in the press the notice about these and the invitation to express opinions.
b) Sessions/meetings of the Group of experts: one of two per month, in the periods of project initiation and national debate, up to three per month, in the last six months of final document elaboration. Moreover, even from the project initiation, the on-line work framework was created for current consultations and exchange of data and information between experts.
c) Total number of participants to public debate sessions: 48 at the first, 89 at the second and 210 at the third
d) Total number of interventions in public debate sessions: 128
e) Number of written contributions/observations/comments received: 16
f) Number of versions subject to public debate: 1
g) Total number of revised variants of successive versions: 6.

Chapter 2

ROMANIAN BIODIVERSITY

OVERVIEW

Romania is located in Central Europe, at equal distance both from the North Pole and Equator and between the Atlantic Ocean and Ural Mountains, in the hydrographic basin of the Danube and the Black Sea. With an area of 238.391 km^2 and a population of 21.584.365, according to the data provided by INS, it is considered a European country of average sizes and represents 6% of the total area of the European Union and 4% of its population.

The relatively balanced variety and proportions of the different land forms - 28% mountains, 42% hills and plateaus and 30% plains – are unique and rare characteristics in Europe, including at global level. The following bio-geographical regions established at European level are found on the Romanian territory: Continental, Alpine, Panonian, Pontic (Black Sea) and Stepic (present only in Romania). The Black Sea bio-region includes also the exclusive economic area, besides the seaside part and the Romanian territorial waters, according to the Framework Strategy for the Maritime Environment of the European Union (Directive 2008/56/CE). 54% of the Carpathian Mountain chain is found in Romania and 97.8% of the national hydrographic network is collected by the Danube River.

2.1. DIVERSITY OF ECOSYSTEMS AND HABITATS

The geographical position, physical, geographical and lithological complexity and the radial distribution of altitudinal gradients of land forms create the large diversity of mezzo-, microclimate and pedological conditions. This variability of substrate composition and structure and abiotic conditions determines the richness, distribution and representation level of types of natural ecosystems and habitats on the Romanian territory.

The natural and semi-natural ecosystems represent approximately 47% of the country area, 45% is represented by agricultural ecosystems, the rest of 8% being represented by constructions and infrastructure. The major categories of types of ecosystems analyzed are the following: forest ecosystems, ecosystems of grasslands, ecosystems of fresh water and brackish water, maritime and coastal ecosystems and underground ecosystems.

Forest ecosystems

From the total 3.869.455.000 ha covered with forests at global level, 1.035.344.000 ha are found in Europe and 6.448.000 of these are present in Romania. Between 1990-2008, the forest area of our country increased insignificantly, with approximately 30.000 ha, through the forestation carried out on the lands outside the forestry real

estate. From 2000 until 2004, the area of forests increased with almost 16.000 ha, following the forestation of lands not used in agriculture.

At national level, most of the forests are found in mountain and hill areas (89.1%); from these, around 53% are forests that fulfil protection functions, their structure being presented in fig. 2.1. More than 55 functional categories are grouped in 6 functional types according to the types of interventions that can be allowed in the exploitation of forests: in the functional type I (with special protection functions subject to the protection regime), any type of cutting is prohibited and in those from type II (with special protection functions subject to the special conservation regime) only mild interventions are allowed. In the types III and IV (in which the harvesting of main products is only allowed with special restrictions concerning the intervention mode), only cutting that allows natural regeneration is accepted. In types V and VI, the wood harvesting and forestry interventions can be carried out currently, complying with the requirements on sustainable management of forests.

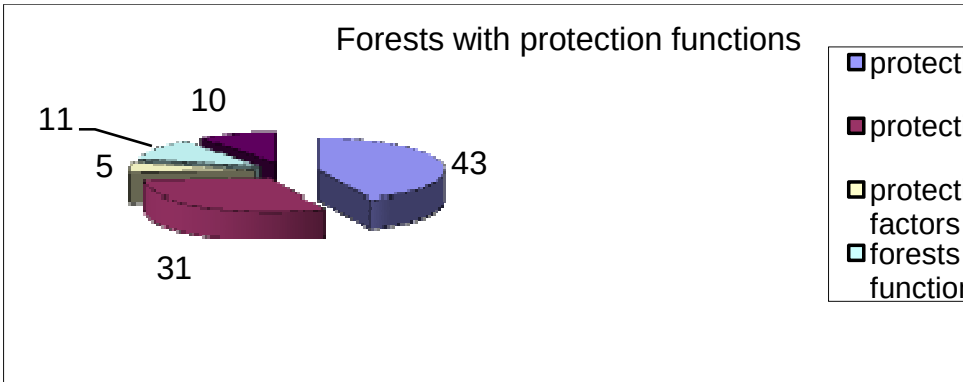

Figure 2.1. Distribution of types of forest with protection function

The coniferous forests represent 30.4% of the total area of forests and the deciduous ones 69.6%. Most forests are the beech ones (31.1%), followed by the spruce fir ones (22.9%), different species of oak (18.2%), fir tree (5%), pine (2.1%), other coniferous (0.9%) and other deciduous ones (0.5%), the rest of forests being made of mixed forests. Outside the national forestry real estate, 319.000 ha are covered with forest vegetation. 31% of the forests are included in the national network of natural protection areas.

A special particularity concerning the Romanian biodiversity is the existence of virgin forests. According to the study carried out by ICAS in 2005 within Pin Matra financing, their area was estimated to approximately 225.000 ha.

Another special element is the presence in the group of Retezat-Godeanu-Ţarcu mountains of the last intact forest landscape (PFI) from the area of the European temperate climate. According to the study carried out by ICAS in 2007, PFI area was estimated to 97.926 ha from which 18.046 ha are virgin forests.

Grasslands

From the total 10.542.000 km^2 of grasslands at global level, 715.000 km^2 are found in Europe and 17.486 km^2 in Romania (7.32% of the national territory). 2000 km^2 of grasslands were included in the national system of natural protected areas (11.43%).
The arid, semi-arid and dry-sub-humid areas defined according to UNCCD represent 30% of the national territory.
More than 74% of the grasslands are found in the hill and mountain areas, 4% of them being found in alpine and sub-alpine areas. The rest of 26% is found in the plain areas, predominantly in the steppe area.

Ecosystems of fresh and brackish water
The following categories of aquatic systems were identified in Romania:

a) permanent rivers – 55.535 km, representing 70 % of total water courses;
b) non-permanent rivers – 23.370 km, representing 30 % of total water courses;
c) natural lakes – a number of 117 with the area larger than 0.5 km^2, from which 52 % are found in the Danube Delta;
d) barrier lakes – a number of 255 with the area larger than 0.5 km^2;
e) transitional waters – 174 km (46 km river waters and 128 km maritime waters);

The network of rivers at the level of our country has radial form, 98% of rivers spring from the Carpathian Mountains and discharge directly or through other rivers in the Danube. The Danube, the second long river from Europe (2860 km), from which 1075 km on the Romanian territory, discharges into the Black Sea through 3 arms (Chilia, Sulina, Sfântu Gheorghe), which form a delta. As size, the Danube Delta is situated on the third place in Europe (after Volga and Kuban) and on the 22nd place at global level. Also, it is the widest area with compact reed in the world and more than 5.400 species of flora and fauna and 30 types of ecosystems put it on the 3rd place concerning the biological diversity at global level (after the Reef Barrier and Galapagos Archipelago). In the present, the Danube Delta has multiple protection statute, being declared biosphere reserve, Ramsar site, site of natural and cultural global patrimony, community interest site and special bird protection area.

Maritime and coastal ecosystems
The Romanian seaside, located exclusively in the Pontic bio-geographical region, has a length of 244 km, to which it is added the maritime part, from the Black Sea bio-region, comprising associations of coastal, sand dune and maritime ecosystems. The maritime part covers an area of approximately 5400 km^2, if we take into account only the territorial waters. 24.5% of this area has statute of natural protected area. In the coastal area, from the total length of 244 km of the Romanian seaside, approximately 68% is found in protected areas.

Underground ecosystems
In Romania, a number of 12.500 caves with an area of 4.400 km^2 were registered by "Emil Racoviţă" Speleology Institute until now, 134 of them being declared natural protected areas, which represent 1.07% of the total number. A significant contribution

to their discovery, exploitation, mapping and inventory belonged to the speleological organizations.
From these, Movile Cave stands out – the only ecosystem in the world which functions exclusively based on chemosynthesis and which has an impressive diversity of over 35 unique species.

Natural and semi-natural habitats
The European Union developed the classification system of European natural habitats, including those from Romania. The notion of "natural habitat", as defined in *Directive Habitats no. 92/43/EEC on conservation of natural habitats, wild flora and fauna*, refers to the terrestrial or aquatic areas distinguished by geographic, abiotic and biotic characteristics, totally natural or semi-natural, being mostly similar with the notion of ecosystem. The natural and semi-natural habitats found at national level characterize the aquatic, terrestrial and underground environment. These are aquatic habitats – maritime, coastal and fresh water habitats; terrestrial habitats – forest, grassland and brush habitat, peat land and swamps habitat, steppe and silvo-steppe habitat; underground habitats – cave habitat.

More classification systems of habitat types are accepted in Romania, without the existence of a unitary system. Following the studied carried out through CORINE Biotops programme, 783 types of habitats were identified in 261 areas from the entire territory of the country (tab. 2.1):

Table 2.1. Main types of habitats from Romania and their share

Main types of habitats	Number	%
Coastal habitats	13	5,0
Humid areas	89	34,1
Grasslands	196	75,1
Forests	206	78,9
Swamps	54	20,7
Rocky areas/sands	90	34,5
Agricultural	135	51,7

At the level of 2005-2006, through the work “Romanian habitats”, Doniţă and the collaborators tried to establish the similarities between these different classification systems. Thus, 21 sub-classes of habitats and 357 types of habitats present in our country have been established and described, large part of these having equivalents in the main classification systems used at European level:

a) 199 habitats have equivalent in the habitats from Nature 2000 classification system;
b) 213 habitats have equivalent in the habitats from Emerald classification system;
c) 170 habitats have equivalent in the habitats from Corine classification system;
d) 357 habitats have equivalent in the habitats from Palearctic classification system;
e) 263 habitats have equivalent in the habitats from EUNIS classification system.

The sub-classes and number of types of habitats present in Romania are presented in table 2.2.

Table 2.2. Sub-classes and types of habitats present in Romania

No.	Sub-class	No. of types of habitats present in Romania
1	Maritime communities	7
2	Sea arms and shores	1
3	Swamps, steppes, brushes and halophilic forests	33
4	Seaside sand dunes and beaches	11
5	Fresh dead waters	13
6	Saline and brackish dead waters	3
7	Brushes and grasslands with arbustive vegetation from the temperate area	33
8	Xeric calcicolous steppes and grasslands	21
9	Xeric silicone grasslands	3
10	Alpine and sub-alpine grasslands	19
11	Humid grasslands and tall grass communities (sub-alpine weeds)	16
12	Mesophilic grasslands	4
13	Temperate deciduous forests	65
14	Temperate coniferous forests	18
15	Meadow and swamp forests and brushes	23
16	Tall peat swamps (oligotroph swamps)	2
17	Water border vegetation	12
18	Swamps, peat lands, springs and rivers	23
19	Scree	15
20	Continental rocks and above-ground rocks	23
21	Chionophile vegetation	6
22	Continental sand dunes	5
23	Caves	1
24	Ruderal communities	6
	TOTAL	**357**

2.2 DIVERSITATY OF SPECIES

The diversity of natural ecosystems/habitats is completed by the remarkable diversity of species. 3795 species and sub-species of superior plants (623 cultivated species and 3136 spontaneous species) (Ciocârlan, 2000), 965 species of bryophytes (moss) (Ştefănuţ, 2008; Sabovljević & al., 2008), 8727 species of fungi (mushrooms), over 600 species of algae of which 35 marine ones, have been registered until now. 37% of the species of plants are found in grassland habitats and over 700 species of plants are

found in the maritime and coastal areas. 4% of the species of plants are endemic, 75% of these being found in the mountain area.

Concerning the fauna, 33.802 species of animals, from which 33085 invertebrates and 611 vertebrates, have been identified so far. From the vertebrates, 103 species of fish, 19 species of amphibians, 23 species of reptiles, 364 species of birds (from which 312 migratory species) and 102 species of mammals (the Red Book of Vertebrates from Romania) have been identified.

The presence of large carnivores in favourable state of conservation is representative for Romania, according to the data presented by the environmental authorities. Thus, the grey wolf population (*Canis lupus*) is estimated to 2.500 specimens, namely almost 40% of the population found on the territory of the European Union, the Eurasian lynx population *(Lynx lynx)* is estimated to 1.200 specimens and the Eurasian brown bear one (*Ursus arctos arctos*) to 6.000 specimens, namely over 60% of the European population. These three species of carnivores represent the symbol and indicator of the wilderness state of habitats. The maintenance in Romania of stable and viable populations of large carnivores can be a source for repopulation in other European areas in which these species are endangered.

From the group of insects, 227 species are adapted to the underground life, 97% of these being endemic. From the total number of fauna species at national level, more than 1000 species are considered endemic, but the geographical distribution of most of them is less known.

2.3 GENETIC DIVERSITY

The genetic diversity of species is extremely important for the assessment of the genetic erosion degree, being represented, depending on the case, by the genetic diversity of the natural populations, sub-species, types or hybrids, races and strains. Knowing the intra-specific genetic diversity is important for the identification of the evolutional, adaptive potential of different populations belonging to the same species in the conditions of climate changes. Also, it can contribute to the identification of origin centres of species. In case of ancestors of types and races, the maintenance of genetic diversity can be an essential factor in the selection of forms resistant to environmental changes.

The genetic diversity of micro-organisms includes the genetic diversity of strains of species belonging to viruses, archaebacteria, bacteria, fungi and other types of sub-microscopic organisms which come from natural habitats to which are added micro-organisms from public or private collections made of strains with autochthonous or allochton origin. Because the micro-organisms are maintained in collections, in isolation conditions, the collections of laboratories of public or private research of cultures of cells and vegetal and animal tissues can be also mentioned here.

The genetic diversity of species of plants is represented by the totality of wild species which have the natural habitat on the national territory (*in situ*) to which are added wild species maintained in collections (*ex situ*), as well as all types and hybrids belonging to species of plants improved and used today in agriculture.

The catalogue of plant varieties (types) cultivated on the Romanian territory was elaborated in 2008, which was adopted through the Order of the minister of agriculture and rural development no. 427/2008. According to this catalogue, the number of types of plants is 2118. 37 species of plants (5.9%) with human alimentation potential are cultivated nowadays in Romania, these being the selection basis (ancestors) for the autochthonous types.

Graminaceae (wheat, barley, oat, rye, sorghum), industrial oleaginous plants (sunflower, rape), soy, potato, grapevine and fruit trees (apple, plum) are currently very important for Romania from economic point of view.
The genetic diversity of species of animals is represented by the totality of species of wild animals found on the Romanian territory in specific habitats (*in situ*), along with wild animals maintained in collections (*ex situ*), as well as animals improved during the time. The genetic diversity of the Romanian livestock has significant importance, along with the wild species with sustainable use coming from fishing, hunting or capture activities. There isn't a centralized record in the present of all races of animals raised at national level; however there are clear records for different races of species with the largest share in human alimentation (porcine, ovine, bovine, horse and other similar ones). The adult female livestock is registered in the registration system and kept by the National Agency for Improvement and Reproduction in Animal Husbandry "Prof. Dr. G. K. Constantinescu", based on data transmitted by the associations of animals breeders and by ROMSILVA – National Forest Administration, the Directorate for Horse Breeding, Exploitation and Improvement.

Chapter 3

DIRECT THREATS ON THE ROMANIAN BIODIVERSITY

According to INS data, the main anthropic factors that caused the modification of ecological composition and structure, namely of productive and support capacity of the Romanian biodiversity in the last decades have been identified in the objectives of the socio-economic development strategies and in the means used for their implementation in the period 1950-1989. These generated unbalance and discontinuity which were corrected only partially, under the spontaneous impulse of market mechanisms, in the period 1990-2007:

a) Extension and intensification of agricultural production systems by transforming natural or semi-natural ecosystems in arable lands and their management for the use of intensive production technologies (the flood plains of main rivers and especially the Danube alluvial plain were dammed up and transformed in intensive agricultural ecosystems in proportion of 20-80%; a large part of the pastures with steppe vegetation and lands with excessive humidity were transformed in arable lands; the shelter belts and many forest parts from the plain area or river plains were cleared and other similar ones);
b) Fast industrialization through the development of production infrastructure in large units, mostly in the sectors of ferrous and non-ferrous metallurgy, chemical and petrochemical industry, machine manufacturing, caused the consumption increase of non-renewable sources (mineral and energetic) from autochthonous and external sources, massively contributing to the pollution of air, surface and underground waters and soil; the direct and indirect pollution caused by the defective management of depollution installations or even their absence within the production capacities from the large industry, including that of concrete, chemical fertilizers and pesticides, was added to it;
c) Uncontrolled exploitation of natural forests, having as consequence the occurrence of ecological unbalance in many mountain hydrographical basins;
d) Execution of ample hydro-technical works for the creation of water accumulations and the protection against floods;
e) Increase of electrical energy production capacity, including in large thermoelectric power plants, based on the consumption of inferior coal;
f) Urban development and population transfer from the rural environment, accompanied by the destruction of ecosystems from the urban areas (reduction of green areas, constructions on green areas, cutting of trees, destruction of nests and other similar ones) and insufficient measures for the adequate collection and treatment of wastes and used waters;
g) Development of transport infrastructure, with emphasis on the railway, fluvial, maritime one in the conditions of maintaining the fleet of means of transport, including motor vehicle ones, outdated from physical and moral points of view;
h) Extension of surface mining activities and extension of areas occupied by wastes without their greening;

i) Over-exploitation of renewable and non-renewable natural resources in order to supply the production processes from the economy;
j) Use of techniques for precious metal extraction with negative significant effects on the environment in general, human health and nature (e.g. use of cyanide in gold extraction);
k) Intentional or accidental introduction of allochton species in natural or agricultural ecosystems;
l) Elimination from human alimentation of species of plants (lentil, millet, chickpea and other similar ones) and the orientation of agricultural cultures to mono-culture, in extended fields in rotation.

In the extended transitional process to democratic governing and functional market economy, the political objectives and management forms belonging both to the old and new development cycle co-existed in different degrees: the state property and the private one, centralized and decentralized administration, intensive and subsistence agricultural production systems. Thus, in the present moment, the following threats are predominant:

3.1 Conversion of lands

The conversion of lands for the development of urban, industrial, agricultural, tourist or transport infrastructure is the main cause of biodiversity loss, leading to degradation, destruction and fragmentation of habitats and implicitly to decline of natural populations.

If in the past the main threat was the conversion of different types of habitats in agricultural lands for mono-cultures, including by the destruction of important areas of humid areas from the Danube Delta, the conversion of natural habitats remains in the present a direct threat, visible especially in the following cases:

a) Dewatering of humid grasslands and their conversion in arable lands;
b) Regularization of rivers and destruction of alluvial ecosystems, supported even with environmental funds;
c) Afforestation of grasslands with low productivity and steppe habitats, considered sometimes exaggeratedly by authorities as “degraded” lands;
d) Destruction of arbustive vegetation for extension of pastures or for tourism development;
e) Abandonment of grasslands and pastures, especially in high, hardly accessible areas, which will be invaded by forest vegetation.

3.2 Infrastructure development

Intensification of investments for the infrastructure development (motor vehicle, railway and fluvial transport, tourism, energy production and transport and other similar ones) without corresponding measures for the reduction/elimination of the impact on biodiversity can be considered an activity with impact on biodiversity, in the context of actual economic development.

A severe problem is that related to the construction of wind parks, which can affect the populations of migratory species (birds and bats), in case of inadequate location, due to the lack of detailed maps concerning the migration corridors of species and wind potential areas. A special case is Dobrogea, an area with high wind potential, which is in the same time crossed by the main migration routes of birds that roost in the Danube Delta or transit this area.

3.3 Extension and development of human settlements

In the present, it is considered that approximately 6.5% of the country area is designed for the construction of houses. The fragmentation of habitats occurs when there are large agglomerations of houses, but also in the case of isolated ones, due to the additional construction of access ways and utilities. The chaotic construction, without complying with the coherent and consistent urbanism strategy, leads to the ill-balanced use of areas designed for constructions and their extension to the detriment of natural ones.

The uncontrolled urban development, peri-urbanization and population transfer from the rural environment, accompanied by the destruction of ecosystems from urban areas (reduction of green areas, constructions on green areas, cutting of trees, destruction of nests and other similar ones) and insufficient measures for the adequate collection and treatment of wastes and used waters have considerable negative effects both on biodiversity and on life quality.

A very important pressure is exercised on biodiversity from the natural protected areas, from the coastal and mountain area with tourist potential, where constructions with seasonal destination are also developed besides the residential ones.

3.4 Hydro-technical works

The large capacity hydro-power plants from Porţile de Fier, the bottom sills and guide dams had a major negative impact on the species of migratory fish or which had the reproduction places upstream of these areas, reducing 50 times the numbers of sturgeons.

Danube impoundment: the shore dams lead to the destruction of reproductive areas for the species of fish such as the carp, this preferring low, transparent and high temperature waters, the result being the reduction with 10 times of its numbers.

In the present, there aren’t any development plans of large scale hydro-technical works, but there is still the tendency to solve problems related to floods by consolidating dams and creating new dams, to the detriment of maintaining and restoring the transition areas and prohibiting the development of human settlements in the areas with high flood risk.

The hydro-technical works carried out in the harbour premises caused the unloading of large quantities of sediments in sea waters, covering the sand or rock bottom, which

lead to the disappearance of entire benthal associations, habitats for valuable species from ecological and economic point of view.

3.5 Over-exploitation of natural resources

The forest management practiced nowadays is one based on the principle of sustainable use of resources. However, the uncontrolled exploitation of wood and illegal cutting represents a threat to biodiversity. These situations are more frequent in the recently retroceded forests and which are not administered in the present. The uncontrolled cutting fragments the habitats and leads to the soil erosion or landfalls.

Overgrazing has a significant negative impact on plant formations, causing the decrease of vegetal biomass and number of species with nutritional value. Because the livestock decreased considerably from 2004 and the poverty state of the population from the rural environment accentuated, overgrazing became an isolated problem.

From the most affected species of plants are the species with special protection statute that contain active principles and are used in cosmetics, those with pharmaceutical, food or decorative use, harvested and sold illegally.

Over-exploitation of hunting, economic or cultural interest species is mainly generated by the over-exploitation of population or poaching numbers.

The poaching of hunting interest species or those of economic interest ones appears in two distinct situations:

a) on one hand, it is caused by the poverty of local population from certain areas which uses these specimens for personal consumption and which does not have a significant effect on the conservation state of those species;
b) on the other hand, poaching is caused by the wish to hunt/capture/collect strictly protected species with high value on the black market. This situation generates significant negative effects on the conservation state of targeted species.

A special situation is represented by fish poaching along the Danube and from the Danube Delta. From the methods used, the most dangerous one is the electric fishing, which, besides the fact that it destroys a significant number of young specimens, it causes the sterility of mature specimens that survive.

In the Black Sea, the intensive fishing practiced in 1960 lead to the reduction of stocks of large migratory fish. Moreover, it caused the perturbation of maritime ecosystems, especially due to the use of bottom trawl, which had adverse functional effects on the live maritime resources and their specific habitats, by disturbing the sediments and organisms that populate the bottom of the sea. Although such practices are prohibited in the present, the illegal fishing is still a problem, affecting both the fish populations and benthal communities.

Approximately 7% of cavities are subject to degradation due to inadequate tourism and pollution generated by households from the rural environment. In the last 15 years, more and more cavities are irreversibly degraded following the illegal activities practiced by the treasure hunters and those who sell fossils. The resulted impact following the forest exploitation and agriculture in karstic areas was not yet assessed. The tendency of mentioned phenomena is increasing, although most habitats are located in protected areas.

3.6 Inadequate exploitation of non-renewable resources

The exploitation means of ballast and sand from the beds of internal rivers determine the degradation of aquatic habitats and destroy humid areas, affecting the species that live in these areas.

The exploitation of mineral resources affects biodiversity either by total destruction of habitats following uncovering or by extension of wastes and mud-setting ponds. In case of quarries, the rock extraction is carried out in open exploitations, these requiring uncovering.

The fossil fuels (coal) are exploited underground or at surface, requiring uncovering in case of surface exploitations and cause the pollution of surface waters used for flotation, in both situations. The mine waters formed in abandoned galleries, most of the times acid and loaded with heavy metals, reach the surface waters affecting their biocenosis.

In case of oil exploitations, accidental pollutions with oil can occur, which affect the vegetal carpet and fauna on medium and long term.

The exploitation of thermal waters, either for the use in district heating systems or for therapeutic purpose, can affect the biocenosis of collecting rivers at discharge due to the temperature differences.

3.7 Invasive species

The invasive species can cause major losses of biodiversity, being able to lead in some cases to the elimination of native species that occupy the same ecological niche. When the species that disappear have economic interest, the loss of biodiversity is also accompanied by substantial economic losses.

The intentional introduction, from economic reasons, of allochton species has a significant negative impact. The most known case is that of the Chinese carp that eliminated native populations. The impact is greater as the cyprinides represent 85% of the national fish patrimony. The intentional introduction of exotic fish species for personal aquariums can be a risk if these reach the internal waters.

Besides the intentional introductions, the invasive species can reach the Romanian internal waters on natural migration ways, favoured by changes of habitats due both to human interventions and climate changes. A real danger is *Amorpha fructicosa*, a

species which invaded the floodable areas from the Danube Delta, replacing the autochthonous species.

Because the water is a very good environment for the dispersion of seeds, the water courses and humid areas are very vulnerable to the penetration of invasive species.

The over-exploitation of fish resources from the Black Sea and the penetration of new species produced the profound modification of associations of pre-existing organisms. In some cases, the modifications produced were reflected in the economic area – the increased reduction of exploitable fish stocks, reducing practically to zero the fish industry from some sectors of the Black Sea. In the present, only 5 species of fish can be exploited from industrial point of view in the Black Sea compared to 26 at the beginning of 1980.

From the invasive maritime species, 3 are considered to have major impact. The sea walnut *Mnemiopsis leidyi* produced serious and direct disturbances in the pelagial ecosystem, even in the benthal one, the fish populations (especially the anchovy ones) suffering a real collapse in the periods of explosive development of the sea walnut, due to the fact that it feeds with their larvae and juveniles, but that this immigrant is a strong competitor for the food of planctonophagous fish. The veined rapa welk *Rapana venosa* caused the collapse of populations of autochthonous oysters and the soft-shell clams *Mya arenaria* of the biota from the sandy bottom from the North-Western part of the Black Sea. Besides the fact that the association of bivalve *Lentidium* considered the most productive from the Black Sea was extremely affected, the penetration of the North-American bivalve had other unfavourable effects: the size of valves and mode of calcium crystallization determine the alteration of beach quality from the Northern part of the Romanian seaside on long term.

3.8 Climate changes

From the data of the Global Meteorology Organization (OMM), the average globe temperature increased in the period 1901 – 2000 with 0.6^0C. For Romania, according to ANM – Bucharest, this increase is 0.3^0C, higher in the Southern and Eastern regions (0.8^0C) and lower in intra-Carpathian regions (0.1^0C). The climate warming is more pronounced after 1961 and especially after 2000 (2003, 2005) when the frequency of tropical days (maximum daily temperature > 30^0C) increased alarmingly and the winter days (maximum daily temperature < 0^0C) decreased substantially. As a result, more areas from our country have a high risk of drought and desertification, especially those where the annual average temperature exceeds 10^0C; the amount of annual precipitation is below 350 – 550 mm; the precipitation in April – October are below 200 – 350 mm and the reserve of soil water 0 – 100 cm on March 31st 31 is lower than 950 –1500 cubic meters/ha.

According to the United Nations Convention to Combat Desertification (UNCDD), the aridity index (annual quantity of precipitation/potential evapotranspiration – ETP) for arid areas, deserts is 0.05 and for the dry sub-humid areas is 0.65, threshold over which

a territory is considered to be almost normal. According to this convention, ETP for steppe and silvo-steppe is 400 – 900 mm and for the mountain area 300 mm of water.

In the fourth report (2007) of the International Committee for Climate Changes (IPCC) for the period 2020 – 2030, compared to 2000, it is estimated in an optimistic variant the global increase of the average temperature with 0.5^0C and in a more pessimistic variant with 1.5^0C and in the period 2030 – 2100, the increase in the two variants is between 2.0^0C and 5.0^0C, which is extremely high. If we took the level of 2070 with an increase of only 3^0C compared to the current level, then 68 % of the Romanian territory located below 500 m altitude will be subject to aridity and desertification, namely an area more than double than that of the current mountain area.

Through the increase of the air average temperature with only 3^0C until 2070, according to prognoses, over 30 % of the country territory will be affected by desertification and approximately 38% by increased aridity, which will include all our plains, up to 85 % of the hill area and almost 20 % of the pre-mountain and low mountain area;

The prognosis of global warming with 3^0C in our country will create major disturbances in the altitudinal distribution of vegetation layers from the Carpathians, in the sense of increasing the upper limit of the spruce fir with 600 m and the gradual disappearance of sub-alpine (juniper tree) and alpine layers. The maximum productivity of natural forests and grasslands located in the present at the level of 1000 – 1200 m will turn to 1600 – 1800 m altitude after the global warming.

3.9 Pollution

Due to the constant decline of the industrial sector after 1989 and to the harmonization of the internal regulations with the community ones concerning pollution control, pollution became a more and more reduced threat, manifesting itself punctually, close to some industrial areas which are in progress of conforming to the European environmental standards. Currently, 358 significant punctiform water pollution sources and 255 areas vulnerable to pollution with nitrates from agricultural sources were identified.

A special mention has to be made on rivers which spring from or cross mining areas and which, naturally, have waters full of heavy metals or mineral salts.

Accidental pollutions are relatively numerous, especially on the Danube and in the Black Sea due to the uncontrolled discharges of ships and/or naval accidents.

The contribution of the significant pollution sources discharges out of the total of accounted punctiform sources discharges is approximately 80%. The diffuse pollution sources are represented especially by chemical fertilizers used in agriculture, the pesticides used for fighting against pests and the human agglomerations in the rural and urban environment, considering the small percentages of the population connection to the sewage network and to the treatment stations (34.9% in 2005).

Most of the underground water drains in the karst areas with localities are biologically and chemically polluted. The main affected karst areas are the Apuseni Mountains and the Banat Mountains. The pollution is caused by the discharge of untreated waste water from localities, the illegal deposits of animal and domestic solid wastes.

According to the performed inventories, during 1992 – 1998, approximately 5,000 ha were affected by the pollution with zoo-technical wastes. As a result of livestock decrease, the quantities of pollutants in the zoo-technical sector have also decreased and the transition from breeding animals in complexes to breeding animals in households has reduced, to some extent, the concentration of residues in certain points and the dissipation of the residues on wider areas, but with a more reduced load. From the preliminary data of the last inventory of the polluted lands has resulted that only an area of 961 ha is affected by zoo-technical results.

The increase of the domestic and industrial waste volume raises special problems, by occupying important land areas, as well as a result of the problems which they raise for human and environmental health. The operating tailing ponds can affect the surrounding lands, if the retention dams break, by contamination with heavy metals, with cyanides from flotation, with other excess elements (as it happened, in the precedent years, at Baia Mare). The same effect is caused by the tailing ponds in conservation (e.g. at Bălan Mine – Fagul Cetăţii pond, in Harghita County, where pasturage is carried out under conditions of soil pollution with heavy metals).

It is appreciated that the pollution with wastes and inorganic residues affects 844 ha, out of which 360 ha are excessively affected. The largest areas affected in this manner are found in counties with mining activities, with ferrous metallurgy and with non – ferrous metallurgy, such as those in Dolj – 150 ha, Galaţi – 177 ha, Maramureş – 103 ha, Timiş – 106 ha and similar.

Around some industrial sources, such as the non – ferrous metallurgy units (Romplumb Firiza S.A., Phoenix Baia Mare, Sometra Copşa Mică, Galaţi, Hunedoara Steel Mills and similar), atmospheric pollution with particulate matter and gaseous pollutants is generated, the effects of some of these sources being felt even after the activity is stopped (Ampellum Zlatna S.A. case). Also, important areas are affected by the emissions around fertilizers, pesticides production facilities, oil refining facilities, such as the case of Bacău County, where 104,755 ha of agricultural lands are low-moderately affected, as well as the case of binding agents and asbestos-cement production facilities. in case of non – ferrous metallurgy (Baia Mare, Copşa Mică, Zlatna), 198,624 ha were affected, up to different levels, by the contents of heavy metals and sulphur dioxide emission, causing diseases to people and animals in the surrounding areas, on a 20 – 30 km radius. The soils suffer from acidification, which determines their emaciation of nutritive elements, they are destructured, inclination processes start (erosion and landslides), vegetation dries and similar.

Air pollution with substances generating acid rains (SO_2, Nox, O_3, CO_2 and similar), such is the case of chemical fertilizers production facilities, thermal power stations and similar, affects the air quality, especially in the case of non – ferrous metallurgy; they contribute to the acidification of soils up to different levels, determining the elutriation of bases from the soil in depth and the drastic reduction of the nutritive elements content, especially of calcium and mobile phosphorus.

Another type of pollution with particulate matter is the one generated by the binding agents and asbestos-cement production facilities which, besides air contamination, covers the plants with powders containing calcium, which, in the presence of water, forms calcium hydroxide, determining the derangement of the foliar apparatus.

The ashes blown from the pits of the coal-fired thermal power stations pollute the air, the ashes decant on the soils, "enriching" them with alkaline and alkaline earth metals, that can end up in the ground water, if these ahs pits are located on lands with low depth of phreatic aquifers.

According to the preliminary data produced by ANPM, 566 ha in total are affected by the pollution with radioactive matter, out of which 66 ha are excessively affected. This type of pollution is manifested in Arad, Bacău, Braşov, Harghita, Suceava counties.

Major consequences on biodiversity are found in a series of qualitative and quantitative significant modifications in the operating structure of ecosystems. From the perspective of the principles and objectives of conservation and sustainable use of biodiversity, the main relevant consequences are:

a) The action of an active process of biological biodiversity erosion, which is expressed by the disappearance of some species.
b) Fragmentation of the habitat of multiple species and the interruption of the longitudinal connectivity (by watercourses barrier) and lateral connectivity (by the embankment of the floodable areas, blocking or drastic limitation of migration routes of the fish species and of the access to the proper breeding or feeding places).
c) Limitation or elimination of some habitats or ecosystems from the transition areas (forest curtains, trees alignment, wet areas from the structure of great agricultural exploitations or great lotic systems) with deep negative effects on the biological diversity and on the functions of control of the diffuse pollution, soil erosion, ground leaks and flood wave evolution, biological control of the pest populations for agricultural crops, reload of the underground water bodies or reserves.
d) Ample modification, sometimes beyond the critical threshold, of the structural configuration of the hydrographic basins and the watercourses, associated with the significant reduction of the water systems capacity to absorb the pressure of the anthropic factors operating in the hydrographic basin and with the increase of their vulnerability and that of the socio-economical systems depending on them. Many hydrographic basins were streamed.

e) Excessive simplification of the structure and multifunctional capacity of the ecological formations dominated or made exclusively from intensive agricultural ecosystems and the increase of their dependency level towards the commercial energetic and material inputs.
f) Destructuration and reduction of the productive capacity of the biodiversity components in the agricultural sectors.

A special attention must be granted to the impact on the landscape, at the level of each of its 3 components: cultural elements (settlements, infrastructure, buildings, human activities), biodiversity, geomorphological structure (relief, geological and hydrological characteristics). The human interventions, with negative impact on the landscape, depending on the severity, are the following:

a) **Destruction** – significant losses at the level of the 3 landscape components. They are caused mainly by intensive urban developments, inadequate for local environment and architecture, change of the lands function, deforestations, radical transformation of the traditional tissues of the localities (thickening, demolitions, change of functions)

b) **Degradation** – strong transformations of the components, which do not change the unitary character. They are caused by: deterioration of the biodiversity (planning of green urban areas with allochthonous species, neglect and abandonment of public area in favour of road traffic), cultural losses (transformations of the building elements by waivers from the legislation in force, unsustainable intensive urbanism, with no strategic planning, suburban neighbourhoods with no identity, infrastructure and integration in the city organism, abandonment of traditions), pollution (wastes accumulation, caused by wastes accumulation, air, waters and lands pollution)

c) **Aggressions** – punctual actions with major impact on all components. They are caused by the economic and touristic activities, such as quarries, gravel plants, forest exploitations, ski slopes and similar – which are carried out in unsustainable manner and are causing landforms modification, wastes accumulation, ecosystem unbalances, lack of continuity as regards the land-use planning.

All the structural modifications generated during a long time, first of all as a result of the anthropic pressure increase and diversification and which are reflected in the current configuration of the ecological structure of the natural capital of Romania, have lead to the reduction of its productive and support capacity for the requirements for resources and services from the national socio-economical system. Therefore, the Romanian territory vulnerability towards the geomorphological, hydrological and climatic hazards has increased.

The bio-productive capacity of the Romanian biodiversity, in its current structure, expressed as a global productive area per individual (kg x ha/individual) is estimated at a level of 2.17 kg x ha/individual, representing a little over half of the estimated potential of 3.5 – 4 kg x ha/individual. At this moment, the bio-productive capacity is

exceeded by the socio-economical system print, evaluated for 2004 at 2.45 kg x ha/individual and for 2006 at 2.7 kg x ha/individual.

Chapter 4

NATIONAL STRATEGY FOR BIODIVERSITY CONSERVATION

4.1. OVERVIEW

Biodiversity represents an intrinsic value of the terrestrial life which has to be taken into consideration in any future development project.

The national strategy for the conservation of biological diversity is not just a simple response action of a signing Party, as a result of the obligations undertaken according to art. 6 of CBD. This focuses, in a harmonised manner, the general objectives of conservation and sustainable use of the biological diversity provided also by other international environmental instruments. At the same time, they ensure the integration of the national policies at regional and global level. In other words, SNPACB is an essential reference point for the sustainable development of our country.

The Romanian biodiversity, represented by the variety of ecosystems, species and genes, represents the national natural capital, being an integral part of the sustainable development, by the fact that it provides goods and services, such as food, carbon sequestration and redistribution of marine and ground water, which are the basis of economic prosperity, social welfare and life quality. The human activities are evaluated in terms of direct or indirect impact on the biological components diversity, in order to apply adequate measures to minimize the negative effects, reconstruct, rehabilitate and recovery the affected ecosystems. Research, education, business environment and civil society are involved, together with the local authorities and communities, for the promotion, conservation and sustainable use of biological diversity.

Reaching the established strategic objectives will contribute to the consolidation of the socio-economical viability of Romania on long term. The new financial mechanisms – designed to protect and to bring economic advantages to the current and future generations, they are developed in agreement with new innovative solutions which are working, on one hand, for the conservation of the biological diversity and sustainable use and, on the other hand, for maintaining and improving the socio-economical stability.

Currently, the following key concepts on biodiversity conservation were internationally adopted and undertaken at community and national level:

1. **Sustainable development. Protection and conservation of biodiversity are closely related to the satisfaction of the economic and social needs of people.** This approach underlies the triple purpose of CBD: conservation of biodiversity, sustainable use of its components and even share of the benefits resulted from the exploitation of genetic resources.

2. **Ecosystemic approach.** Biodiversity must be looked at in its entire complexity, including all essential processes and functions of the ecosystems, the interactions between organisms and their life environment and the ethno-cultural diversity. From this perspective, the most efficient way to promote the conservation, sustainable and even use of the biodiversity resources is that of their integrated management.
3. **Biodiversity prioritisation. Biodiversity must be integrated in all sectoral policies** – planning the natural resources exploitation, forests exploitation, planning the agricultural and rural development. The Convention can contribute to all chapters of Agenda 21, especially those referring to the conservation integration within the development actions.

Besides the effect generated on the way of thinking and approach biodiversity, the CBD generated also the development of some major action themes:

a. **Public awareness.** The Convention encouraged a better understanding of the importance of biodiversity from a socio-economic point of view: the ensured goods and services, the connection between the biodiversity losses and the global issues threatening the existence of mankind.
b. **Strategies for biodiversity conservation and action plans:** by the action plans, the priorities were identified and the adequate policies of sustainable development were established.
c. **Related themes and programs.** The Convention promoted working programs on biodiversity in agriculture, diversity of arid areas, diversity of forests, inland and marine waters, invasive species, ecosystemic approach, bio-indicators, global taxonomic initiative, sustainable tourism.
d. **International cooperation.** Cooperation programs with the Ramsar Convention were launched concerning the wetlands, with the UN Convention on fighting against desertification, with the UNEP, FAO, IUCN programs.

As arising from the internationally established policies, biodiversity conservation is not carried out in an abstract context, but it is closely related to the development processes of the human socio-economic systems. The inability to solve the socio-economic development issues makes it impossible to apply some strictly conservative measures, making them almost completely useless. This is why any type of action aiming the conservation of biodiversity must be integrated in a strategic context on medium and long term, underlying all administrative decisions. Due to the fact that the term of biodiversity, in its wider sense, includes also the ethno-cultural diversity, man being a species which has the right and obligation to integrate itself in the ecological systems it dominates or which it depends on, the strategies and policies in the area of biodiversity conservation are built by involving all interested parties, but correctly informed and aware.

By the SNPACB, Romania aims, on medium term, 2014-2020, the following general action directions:

Action direction 1: Stopping the decline of biological diversity represented by the genetic resources, species, ecosystems and landscape and recovery of the degraded systems until 2020.
Action direction 2: Integration of the policies on biodiversity conservation in all sectoral policies until 2020.
Action direction 3: Promoting the traditional innovative methods, practices and knowledge and the clean technologies as support measures for the biodiversity conservation as support of sustainable development until 2020.
Action direction 4: Improving the communication and education in the field of biodiversity until 2020.

In order to meet the challenges on biodiversity conservation and sustainable use of its components, following the analysis of the general context on national level and of the threats towards biodiversity, in order to ensure the "in-situ" and "ex-situ" conservation and in order to evenly share the benefits of using the genetic resources, the following 10 strategic objectives were set:

A. Development of the general legal and institutional framework and assurance of the financial resources
B. Assurance of coherence and efficient management of the national network of natural protected areas
C. Assurance of a favourable conservation status for the protected wild species
D. Sustainable use of the biological diversity components
E. Ex-situ conservation
F. Control of invasive species
G. Access to genetic resources and even share of the benefits arising from their use
H. Support and promotion of knowledge, innovation and traditional practices
I. Development of scientific research and promotion of the technology transfer
J. Public communication, education and awareness

For each strategic objective, following the analysis of the situation at the current moment, a set of operational objectives (presented below) and an action plan (presented in chapter 5) were established.

4.2. STRATEGIC OBJECTIVES

A. DEVELOPMENT OF THE GENERAL LEGAL AND INSTITUTIONAL FRAMEWORK AND ASSURANCE OF THE FINANCIAL RESOURCES

Current legislative framework

The Romanian legislation is based on the **Constitution**, which is the fundamental law, with the highest legal power, being a source also for the environmental law. As correlative obligations of the laws related to environmental protection, the Constitution provides the state obligation to ensure the exploitation of natural resources in accordance with the national interest, recovery and conservation of the environment and maintenance of the ecological balance.

The Convention on Biological Diversity, ratified by the ***Law no. 58/1994,*** starts from the recognition of the intrinsic value of the biological diversity on all four approach levels (ecological systems diversity, species and taxonomic hierarchy diversity, genetic diversity of species and ethno-cultural diversity of human species populations), as well as of its economic, genetic, social, scientific, educational, cultural, recreational and aesthetic values. Being a framework convention, the CBD sets only the general measures of conservation and sustainable use, for the implementation of these provisions being necessary to draft national strategies, plans or programmes or to adapt the existing ones, next to the integration of biological diversity conservation and sustainable use in the relevant sectoral or inter-sectoral policies and programmes.

In the area of biodiversity conservation and the sustainable use of its components, the legislative framework is consolidated, but there are still gaps at the level of the secondary legislation and some inadvertencies, irregularities and gaps in the sectoral legislation. These deficiencies, which are to be presented for each subarea, are mainly due to the fact that the Strategies and Action Plans for the biodiversity conservation developed so far were not undertaken by the political factors, not being adopted by normative acts, therefore not having the legal power necessary for enforcement.

The basic regulation in the field of biodiversity conservation is the *Government Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna, approved with amendments and supplements by Law no. 49/2011, as further amended,* which provides the total transposition of the community legislation in the field, represented by *Directive no. 79/409/EEC of the Council on the conservation of wild birds* amended by Directive no. 2009/147/EEC (referred to as "Birds" Directive) and the *Directive no. 92/43/EEC of the Council on the conservation of natural habitats and of wild flora and fauna* (referred to as "Habitats" Directive). The *Government Emergency Ordinance no. 195/2005 on the environmental protection, approved with amendments and supplements by Law no. 265/2006, as further amended and supplemented* is added to it.

At general level, the main issue related to the existing legislative framework is its very frequent amendment, mainly due to the fact that the adoption process was always a fast one, the time provided for discussions being insignificant and the interested parties were generally not informed and made aware of the importance and need for national biodiversity conservation. The emergency amendments caused the situation in which, currently, a series of sanctions are omitted for the non – compliance with some legal provisions already established.

Operational objectives for the improvement of the existing general legislative framework

1. Adoption of the National Strategy and Action Plan for Biodiversity Conservation *[*SNPACB]* through a normative act, assuring it legal power;
2. Consolidation of the existing legal framework.

General institutional framework

The Ministry of Environment and Climate Change (MMSC) – is the central public authority in the field of environmental protection and forests management and has coordination, regulation, monitoring and control responsibilities. Its structure, as well as the responsibilities of the other authorities in the field of biodiversity conservation is synthesized in chapter 6.

The existing institutional framework is a relatively new one, its build starting in the ’90s, once with the establishment of the central public authority for environmental protection. It was progressively developed in the last 20 years and is yet to be final. The general development line had an ascending direction, aiming the responsibilities clarification, avoidance of conflicts of jurisdiction, clear differentiation of the central structures with a major role in coordination and in setting the policies, strategies and legislation from those responsible with implementation and control, as well as the decentralization of the decision making process. The changes of structures and responsibilities were quite frequent and not always constructive or justified. The institutional instability and the very small wages in the system have also generated a pronounced instability of the staff at all levels of the environmental structures – central, regional and local. Therefore, permanently in the field of biodiversity conservation, the human resource was insufficient and the number of assigned jobs was undersized. The lack of expertise in this field is felt especially at the level of the Environment Fund Administration and at the Management Authority (including the Intermediary Bodies) of Sectoral Operational Programme Environment.

Operational objectives for strengthening the institutional framework

1. Establishing clear mandates of the institutional structures, avoiding the conflicts of jurisdiction and interests;
2. Providing the necessary staff and increasing the level of its training;
3. Stimulation of the staff in order to ensure the activity continuity within the environmental structures.

Financial resources

The Romanian territory has a large number of biogeographical regions and a large variety of natural habitats and wild species of community interest, which are mostly in a favourable conservation state. Nevertheless, the *biodiversity conservation* indicator for Romania has the lowest value as compared to the other member states, namely 3.88. One of the main reasons we are on the last place at this chapter is the way financing was treated for this field. Biodiversity conservation was based on disparate financings from external funds, with no efficiency of the use of these funds through a coherent coordination at central level, with no special allocations from the state budget and with no efforts to develop internal financial instruments, complementary to the external sources.

Concrete figures available are those provided by the National Institute of Statistics. The fact that the stakes were on external funds arises from the evolution on phases of the expenses carried out through the central public authority for environmental protection,

the phases corresponding precisely to the years when important amounts entered in Romania through external financing programmes –LIFE programme of the European Commission to which Romania is part of since 1998, PHARE programme (with a spectacular increase of accessing funds in 2006 in order to meet the admission requirements) and the GEF/World Bank grants.
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According to the data presented by the National Institute of Statistics, in 2010, the total expenses for environmental protection at national level were 9 286 892 000, representing 1.8 % of the GDP. Among them, the expenses for the protection of natural resources and biodiversity conservation represented only 125 834 000. Compared to Romania, the other European countries provide important budgets for biodiversity conservation. Therefore, in the United Kingdom, state comparable with Romania if we look at the area, but on which territory there are only two biogeographical regions and a much lower density of natural habitats and wild species of community interest, during 2000 – 2007, the expenses of the public sector for biodiversity conservation have increased with 76%, from 197.9 million pounds in 2000 to 408 million pounds in 2007. During the same period, the GDP has increased with 36%.

In order to build the Nature 2000 Network, Romania has allocated from budgetary funds the amount of approximately 800,000 Euro. For the period 2003-2006, the average estimated costs for the project Phare 2002 Technical Assistance for the "Assessment of the Costs for Implementing the Environmental European Directives", were comprised between 16.72 million Euro for the scenario with 5% territory covered by Nature 2000 sites and 28.92 million Euro for the scenario with 10%. Therefore, the amounts allocated in reality are 36 times smaller than those estimated as being necessary for a good implementation of the Nature 2000 Network in Romania according to the scenario with 10%, although our country suggested in 2007 approximately 18% of the state territory to be part of this European Network of Natural Protected Areas and, in 2012, the total area occupied by the European Network Nature 2000 is 22.68 % out of the national territory.

After the admission of Romania in the European Union, the Post-Accession Funds became available, out of which, for biodiversity conservation activities, are used mainly the funds coming from ERDF through SOP Environment – Priority axis 4 and from EAFRD through the NRDP. Other operational programmes which can be used for infrastructure projects for biodiversity conservation are ROP (e.g. construction of touristic infrastructure), POP (for promoting a sustainable aquaculture programme, as well as the maintenance of the sustainable level of fishing in inland waters) and SOP Transport (e.g. construction of catwalks, footbridges, tunnels and similar which allow fauna to cross them). Also, the SOP Human Resources Development is available, which can be used for developing professional training and improvement programmes in the field of biodiversity conservation. Other financing sources of the EU which can be used for biodiversity conservation activities are those allocated for the European Territorial Cooperation Programmes within the cross-border, transnational and interregional cooperation. Also, the EU Strategy for the Danube Region provides the cooperation

framework for the different policies in progress in strategic development fields and which can be used in the field of biodiversity conservation.

After admission, although in the first years the rate of accessing the funds allocated by the SOP Environment – Priority axis 4 was very low, currently the situation has been substantially improved. Therefore, from the allocation of 763,371,814 lei for the period 2007-2014, until the present moment the value of the approved projects goes up to the amount of 804,439,570 lei. The activities financed by this programme are the following:

a) Drafting/review of the management plans, strategies and measures for the natural protected areas and other related activities (activities preliminary to the concrete measures of investment or conservation)
b) Investment in infrastructure for public use, oriented towards the protection and management of environment in the natural protected areas
c) Activities for maintaining or improvement of the conservation status of species and habitats
d) Consulting, awareness and information activities

The main measures of NRDP addressed to the recovery and protection of biodiversity on the agricultural lands are:

a) Measure 211, support for underprivileged mountain area, by which the aim is to ensure in that respective area the continuous use of approx. 2,520,000 ha of agricultural lands. Out of the 607 million Euro allocated for measure 211 for the period 2007-2013, until the end of 2012 payments were made to the beneficiaries amounting approx. 412 million Euro, covering an area of approx. 1.4 million ha.
b) Measure 212, support for underprivileged areas – others than the mountain area, which aims to contribute to the continuous use of approx. 1,795,000 ha of agricultural lands. Out of the 493 million Euro allocated for measure 212 for the period 2007-2013, until the end of 2012 payments were made to the beneficiaries amounting approx. 212 million Euro.
c) Measure 214, agro-environment payments, was created in order to encourage the farmers to serve the society as a whole, by introducing or continuing the use of the agricultural production methods compatible with the environmental protection. The payments for this measure are conditions by the compliance with some minimum requirements (GAEC, SMR and relevant national legislation), as well as of some specific requirements of extensive use of the lands based on reduction of inputs.
    a. Among the operational objectives of this measure are the following:
    b. Protection of approx. 1,450,000 ha of meadows with high natural value;
    c. Maintaining the biodiversity by using the traditional agricultural practices on approx. 375,000 ha of agricultural lands;
    d. Applying an adequate management on approx. 173,000 ha of meadows important for the protection of the bird species *Crex crex, Lanius minor* and *Falco vespertinus*;

e. Encouraging the use of green cultures on approx. 700,000 ha in order to protect the soil and water resources;
f. Ensuring the protection of natural resources by encouraging the ecological agriculture practices on approx. 80,000 ha of agricultural lands;
g. Applying an adequate management on approx. 25,000 ha of meadows important for butterflies (Maculinea sp.);
h. Applying an adequate management for the protection of approx. 200,000 ha of arable lands important as feeding areas for red-breasted goose (Branta ruficollis)

Out of the 996 million Euro allocated for measure 212 for the period 2007-2013, until the end of 2012 payments were made to the beneficiaries amounting approx. 790 million Euro, covering an area of approx. 1.7 million ha.

d) Measure 221, the first forestation of agricultural lands, which aims to create forest areas on agricultural lands, which can contribute to the increase of local biodiversity by creating adequate areas for the development of insect, bird and mammal populations.

Also, except the expenses with a direct impact in the field of biodiversity conservation, there are also expenses corresponding to Axes 1, 3 or 4 from the NRDP which are financing actions with an indirect positive impact on the environment.
The highest rate of request for the financial allocations within the Operational Programme for Fishing 2007-2013 was registered for the measures designed for the aquatic environment (Measure 2.1.4). Approximately 52 beneficiaries took advantage of the 16.1 million Euro paid so far.

One of the most important financial instruments for environment and especially for the biodiversity conservation is the LIFE+ Programme of the European Commission. Unfortunately, although Romania has a vast experience in accessing these funds, during the last years the absorption rate for the LIFE+ component Nature and Biodiversity decreased from 100% to 30%. This situation is due mainly to the fact that the projects financed through this programme have to be, in general, of over 1 million Euro and the potential beneficiaries for such projects, where the results enter in the public patrimony of the state, cannot cover from their own sources the co-financing of 50% (in exceptional cases being accepted only 25% - for natural habitats and wild species with priority).

Another financing source is the Environment Fund. However, currently the value of the financings through this fund for projects of biodiversity conservation and natural protected areas management is small (e.g.: the budget for expenses approved for 2009 was 12,559,000 Ron, namely approximately 2.9 million Euro). Although the allocations of the Environment Fund for biodiversity conservation projects do not have a high value, the accession degree of these funds is very low. The reasons for this are the heavy procedure for accessing these funds, the much too restrictive requirements which are making these funds be hard to access by NGOs, rules and requirements specific for investment projects, not for those of conservation and management of the natural protected areas.

After the admission, the large companies and corporations in Romania became more careful with the environmental issues, including here also the aspects concerning the biodiversity conservation, developing and financing projects of corporate social responsibility. Yearly, investments of a few million Euros are made in such projects, which may become in the future an important financing source for the biodiversity conservation projects.

Banks have become also receptive to financing opportunities as loan or guarantee for those who access European funds. However, for the biodiversity conservation projects, the opportunity is currently quite low, due to the fact that most applicants are state institutions or NGOs with low financial possibilities.

The most important financing sources for biodiversity conservation will remain in the future the European Funds, LIFE + programme and the Environment Fund. Nevertheless, the capacity to absorb these funds must be improved by reviewing the accessing criteria, which proved to be inefficient so far. At the same time, Romania has to strengthen the financing capacity of some existing financial instruments (Environment Fund) and to continue to focus on developing new financial and economic instruments in order to reach the CBD objectives: subsidies and donations, compensation payments, financial mechanism "debt-for-nature swap", application of the principle "user pays", fiduciary funds for conservation, rights of use, taxes and other royalties corresponding to the protected areas and similar.

For the next financial programming 2014-2020, biodiversity conservation must be strengthened mainly by adopting and implementing the management plans and the measures for the conservation of species and natural habitats of community interest, together with adequate measures of sustainable socio-economical development of local communities in the natural protected areas, by promoting and supporting the natural and cultural capital, the traditional and current activities and practices favourable to the sustainable use of natural resources and lands in these areas. These activities have to be accompanied by direct measures contributing to the conservation, recovery and monitoring of marine ecosystems and coastal area, development of green infrastructure, but also by activities of population information, education and awareness on the importance of biodiversity conservation and of sustainable use of its components in the process of society development.

Operational objectives for the assurance of the adequate financial resources

1. Establishment of a separate budgetary line for biodiversity conservation at the level of the central public authority for environmental protection;
2. Increasing the efficiency of the operation of SOP Environment and Environment Fund;
3. Development of some efficient and additional financial mechanisms and instruments for biodiversity conservation;
4. Monitoring the use of public funds designed for biodiversity.

B. ASSURANCE OF COHERENCE AND EFFICIENT MANAGEMENT OF THE NATIONAL NETWORK OF NATURAL PROTECTED AREAS

Structure and representativeness

In order to ensure the "in situ" special protection and conservation measures for the assets from the natural patrimony, a differentiated protection, conservation and use regime was established, according to the following categories of natural protected areas (according to the Statistical Yearbook 2008):

a) Of national interest, assigned based on IUCN criteria:
   1. Scientific reservations – 79, occupying an area of 100,574 ha;
   2. National parks – 13, occupying an area of 315,857 ha;
   3. Monuments of nature – 190, occupying an area of 18,220 ha;
   4. Natural reservations – 671, occupying an area of 136,537 ha;
   5. Natural parks – 14, occupying an area of 737,428 ha;

b) of community interest or Nature 2000 sites: sites of community importance, special conservation areas, special protection areas , assigned according to the community obligations:
   1. special protection areas – 148, occupying an area of 3,554,235 ha;
   2. sites of community importance – 383, occupying an area of 3,995,252 ha, accepted by the EC and which are to be assigned as special conservation areas.

c) Of international interest:
   1. Biosphere reservations, assigned based on the criteria established by the MAB/UNESCO Committee – 3, occupying an area of 664,446 ha: Danube Delta (1991), Retezat (1979), Pietrosul Rodnei (1979);
   2. Wetlands of international importance, assigned based on the criteria established by the Secretariat of Ramsar Convention – 12, occupying an area of 923,597 ha: Danube Delta (1991), Small Island of Brăila (2001), Mureş Floodplain (2006), Dumbrăviţa Fishing Complex (2006), Techirghiol Lake (2006), Iron Gates Natural Park (2011), Comana Natural Park (2011), Tinovul Poiana Stampei (2011), Olt-Danube Confluence (2012), Bistreţ Lake (2012), Iezer-Călăraşi Lake (2012) and Suhaia Lake (2012).
   3. Sites of the world natural and cultural patrimony, assigned based on the criteria established by the Paris Convention – 1: Danube Delta (1991)

The area of the natural protected areas on national interest, in relation to the country area, is 7% (1,663,360 ha) and the total area of Nature 2000 sites, in relation to the country area, is 22.68% (5,406,000 ha).

The sites of community importance suggested by Romania were selected based on the national evaluation of their relative importance for each natural habitat, such as those in appendix no. 2 and for each species in appendix no. 3 of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. For their approval by the EC, the biogeographical workshops were held in June 2008, where the sites suggested by Romania and Bulgaria for each biogeographical region were analysed.

The conclusions of these workshops revealed the fact that there are some insufficiencies in assigning the sites from the continental and alpine regions. Therefore, for a total number of 80 species and types of natural habitats, Romania was asked to assign new sites of community importance, until September 2009. These assigning deficiencies were caused by the lack of financial resources necessary to carry out a comprehensive national survey to establish the inventory and distribution of the natural habitats and of the habitats of wild species of community interest. As a result of these conclusions, a survey was carried out during 2009-2011, based on which the network of sites of community importance was extended by assigning new sites or extending some existing sites. At the same time, based on the results of this survey, the extension of the network of special protection areas was substantiated, as a result of the continuous assignment obligation of Romania as EU Member State.
Another deficiency is, currently, the lack of national system of monitoring the conservation state of the wild species and natural habitats of community interest, system which must underlie the reports which Romania will submit to the EC on the implementation of community provisions in the field.

As regards the virgin forests, currently, only 75% of them were included in the natural protected areas and only 18% are in the strict protection areas, where they are exempted from any human intervention. 10% of the area of Intact Forest Landscapes has no protection status and only a small part is located in strict or full protection areas, where they are exempted from any human intervention.

In order to ensure the ecological coherence of the network of natural protected areas of national and community interest, the ecological corridors and landscapes must be identified, assigned and their adequate management has to be established, as areas of major importance for the wild fauna and flora. These areas are those which, due to the linear and continuous structure, such as rivers with their banks, or due to the refuge functions, such as the forest curtains, natural brush woods, natural vegetation on the marginal lands of agricultural crops, along the roads and railways, small areas of forest or wetlands, are essential for the migration and dispersion of wild species ant to ensure the connectivity (and, implicitly, the genes flow) between populations belonging to the same species.

The natural protected areas and the ecological corridors must be mandatorily highlighted by the National Agency of Cadastre and Land Registration in the national, regional and local plans for land management and urbanism, in the cadastral plans and in the land registers. Up to this moment, three ecological corridors were established for large carnivores, between Piatra Craiului National Park and Bucegi Natural Park. They were included in the Territory Management Plan of Braşov County, but they were not approved according to the provisions of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*.

Management of the natural protected areas

The management of the natural protected areas is carried out differently, depending on the category they are classified in. The measures provided in the management plans of the natural protected areas are drafted so that they take into consideration the economic, social and cultural exigencies, as well as the regional and local particularities of the area, with priority for the objectives which lead to the establishment on the natural protected area.

The biosphere reservations, national parks, natural parks and, if necessary, the geo-parks, sites of community importance, special conservation areas and the special protection areas are managed by specially established management structures, with legal personality.

Scientific reservations, natural reservation, monuments of nature and, if necessary, the geo-parks, sites of community importance, special conservation areas and the special protection areas which do not need or do not have specially established management structures are managed by taking into custody.

A special situation is the Danube Delta Biosphere Reservation, which has a special management established by Law no. 82/1993 *on the establishment of "Danube Delta" Biosphere Reservation, as further amended and supplemented,* which is under the direct control of the central public authority for environmental protection.

In 2008, Romania had 370 natural protected areas assigned in custody. Among them, 3 are Nature 2000 sites (SPAs). In 2009, due to the institutional blockage generated by the non-operation caused by jobs blockage and then the dissolution of the National Agency for Natural Protected Areas, the process of assignment for management and in custody was blocked, being restarted only in January 2010, after the reorganisation of the central public authority for environmental protection.

Natural protected areas management is hindered by the very frequent changes of the legislative framework (at least every year) and by some lacks in the management/custody contracts, such as the very short duration of the contract (5 years for custody and 10 years for management) and the lack of support from the environmental authorities. The management process is currently hindered by the fact that the plans/projects/activities in the natural protected areas, others than Nature 2000 sites, no longer have to be approved by their managers/custodians.

Also, according to the provisions of art. 6 paragraph (2) of the “Habitats” Directive, member states have to take adequate measures in order to avoid the deterioration of the natural habitats and of species habitats, as well as the species disturbance for the areas where they were assigned, to the extent in which such disturbances are susceptible of having a significant negative effect. These measures imply, among others, the evaluation of the impact of activities/plans/projects located in the perimeter of the respective area, as well as on the outside and which can affect the conservation state of

the wild species and natural habitats which are the objects of assigning the Nature 2000 sites. Currently, by amending the provisions of art. 28 paragraph (1) of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*, for the sites of community importance and for the special conservation areas, the activities outside them, but which can have a significant negative impact on the conservation objects within them, are no longer prohibited.

Also, there are no standard formats approved in order to establish the mandatory contents of a management plan for various categories of natural protected areas, only recommendation, which determines management deficiencies. And also due to this reason, most suggested management plans did not include the financial assessment of the activities, no internal norms were provided for stimulating the income increase and diversifying the income sources, nor systems to monitor the efficiency of the management plans.

According to the legal provisions in force, for the lands in the natural protected areas, held as private property or leased, the owners or lessees must receive compensations for complying with the restrictive measures established by the management plan of the natural protected area. Currently, these compensations were established only for some land categories. For the areas in the growing stock, there are already established methods to calculate and grant compensations for the lands included in the T1 and T2 functional types. The total area of the growing stock in the natural and national parks is 660,000 ha, out of which approx. 160,000 ha are in the full protection areas and over 50,000 ha of them are in the private property of natural and legal persons. The compensations value, established according to the calculation methodology in the Government Decision no. 861/2009 is approx. 16,000,000 lei/year. There are still 30,000 ha of forest in the private property of natural and legal persons included in the T2 functional type, for which there are also restrictions of wood mass exploitation. For these areas, the compensations value is estimated at 6,900,000 lei/year. If the lands would be bought by the state, the necessary amount would be 150,000,000 euro.

For Nature 2000 sites, the NRDP set the funds designed for compensation payments (Measure 213 for agricultural lands and Measure 224 for forest lands) in the amount of 100 million Euro for 2007-2013, but they are yet to be used due to the lack of management plans/conservation measures for Nature 2000 sites, which have not been drafted and/or approved so far. This situation is the result of the fact that Nature 2000 sites were assigned only in 2007, they started to be taken into custody/management in 2010 and the process of drafting a management plan takes at least 1 year, therefore these plans could not have been adopted before 2012. Nevertheless, Measure 214 provided packs containing a set of general management requirements, applicable in areas of high environmental value and/or which overlap with areas being assigned protection areas (of national interest or Nature 2000). Therefore, compensations were provided for the users of agricultural lands located in most protection areas assigned in Romania.

Also POP has allocated in measure 2.1.4 and has paid to fishing exploitations located in NATURE 2000 sites, consistent compensation amounts for the losses caused by the implementation of some special environmental measures, as well as for the production losses caused especially by ichtiofagous birds, but also for the losses caused by the transition from the traditional to the organic aquaculture.

Within the project Phare 2002 Technical Assistance for the "Assessment of the Costs for Implementing the Environmental European Directives", the average cost for the management of Nature 2000 sites was estimated at 80 Euro/ha/year, meaning an estimated necessary of 342,000,000 Euro/year for the entire country. This is an estimation based on conservative assumptions related to the protection areas and includes only the ongoing management costs – land procurement costs, compensation costs or the habitats recovery costs are excluded.

An important contribution for the biodiversity conservation belongs to the National Forest Administration, Romsilva, administrator of 23 natural and national parks. The quantum of the funds allocated and drawn by this institution rises up to some millions of Euro each year. Therefore, from 5.7 million RON (1.6 million Euro) allocated in 2005, the amount reached 9.1 million RON (2.7 million Euro) allocated in 2007. At the same time, it managed to double also the quantum of the financings drawn from other sources, from 3.4 million RON (0.94 million Euro) in 2005 to 6.4 million RON (2 million Euro) in 2007. All park administrations of the National Forest Administration recently received the legal status which allows them to negotiate and obtain financing directly from sources outside the National Forest Administration. The basic incomes of the National Forest Administration are significantly reduced, as a result of the decrease of the state forests area, by the programme of land retrocession. For this reason and because of the financial crisis, in 2009 the administrations of the National Forest Administration were obligated to reduce their conservation, management and staff expenses.

The security and control activities in the natural protected areas are provided by the own staff of the managers and custodians. In addition, according to provisions of art. 19 letter l) of Law no. 550/2004 on the organisation and functioning of the Romanian Gendarmerie, it takes part, together with other authorised institutions, to the surveillance, control and provision of protection and conservation of the natural fishing and hunting fund, forestry fund and environmental protection. Currently there are 62 working points of the Romanian Gendarmerie, formations of Mountain Gendarmerie, most part of which are acting in the natural protected areas. During 2009, the collaboration with the natural protected administrations was carried out based on a framework protocol concluded between the Ministry of Administration and Interior and the Ministry of Agriculture, Forests and Rural Development and on the local protocols concluded between the Romanian Gendarmerie and part of the Administrations of the natural and national parks. According to the provisions of Law no. 218/2002 *on the organisation and functioning of the Romanian Police, as further amended and*

supplemented, but also based on other incident regulations, the Romanian Police is the specialized institution of the state exerting attributions on prevention and discovery of offences, including those detrimental to the national growing stock, fishing and hunting fund, as well as on finding and sanctioning the contraventions against the forestry, fishing and hunting regime. For this purpose, the jurisdiction in the forestry and fishing area belongs to the Service for the Protection of the Forestry and Fishing Fund within the Directorate of Public Order of the General Inspectorate of the Romanian Police. Also, within each County Police Inspectorate, specialized structures were established (offices, compartments or lines of work) which carry out activities of prevention and fight against illegal trees cutting and fish poaching, committed in the territorial jurisdiction area and coordinate the activity of the public order policemen having attributions in these areas in each county.

The economic analyses on the funds necessary to provide the management of the natural protected areas have estimated these costs between 8 euro/ha (necessary to apply a basic, minimal management) and 12 euro/ha (necessary to apply an optimum, efficient management). Although art. 30 of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended,* provides the obligation to allocate financial resources for the management of the natural protected areas, the lack of a separated budgetary line for biodiversity conservation makes it impossible to apply this legal provision. The financial provisions also occur due to the underassessment of the allocations initially established by management contracts and to the delays in funds allocation by the manager, because of contractual provisions by which these amounts can be reassessed and/or updated and the delays sanctioned. Also, no mechanisms were created to establish and collect the taxes and rates necessary to improve the efficiency of the natural protected areas management.

Due to the lack of an adequate financing, it is impossible to attract such sufficient and motivated human resource; there is also no interest for specializing in the field of natural protected areas management, especially in relation to the financial and legal field.

From the legislative point of view, the regulations on the territory management and patrimony protection were not harmonized with those concerning the regime of natural protected areas, there are no provisions concerning the responsibility of waste management in these areas and there are no regulations allowing the renaturation, with priority, of the ecological systems.

Operational objectives for the assurance of the financial resources necessary for an efficient management of the natural protected areas network

1. Draft and application of the technical norms and methodologies for the assurance of the financing of the natural protected areas management;
2. Development and application of the norms and methodologies necessary to allocate compensation payments;

3. Creation of a complementary financial system in order to supplement the budget of the natural protected areas (taxes, rates, norms allowing for the incomes generated by the natural protected areas to be used for applying the management measures and not to be transferred to the state budget and similar);
4. Improving the financing mechanisms for biodiversity conservation.

Operational objectives for the assurance of a legal and institutional framework adequate to an efficient management of the natural protected areas network

1. Creation and development of some adequate institutional structures providing the management coordination for the entire natural protected areas network;
2. Improvement of the legal and regulation framework necessary to ensure the biodiversity conservation in the natural protected areas;
3. Assurance of management structures adequate for all natural protected areas;
4. Setting and adopting a framework content of the Management Plans for all categories of natural protected areas;
5. Draft and approval of the management plans for the natural protected areas;
6. Draft of the guidelines for the management of Nature 2000 sites;
7. Strengthening the institutional capacity at the level of environmental authorities and managers/custodians and development of some programmes to increase the professional training of staff in these structures.

Operational objectives for the assurance of an efficient management of the natural protected areas network

1. Setting an adequate network of natural protected areas, including the ecological corridors;
2. Assuring the adequate measures for the “in situ” biodiversity conservation;
3. Setting, harmonising and implementing the monitoring system for the conservation status of the natural habitats and wild species.

C. ASSURANCE OF A FAVOURABLE CONSERVATION STATUS FOR THE PROTECTED WILD SPECIES

Considering the lack of unity within the Romanian academic community on the contents of the national red lists on plants and invertebrates, it was not possible to draft a normative act adopting such lists. For this reason, in the analysis to be carried out hereafter for the red lists, the authors and years will be mentioned and a comparison will be made with the appendices in the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended, containing the official lists and where both community conserved species (Habitats Directive) and national conserved species can be found. The red lists of the various authors, which are not adopted by normative acts, are used only by researchers in some research surveys. During the EIA, SEA and EA procedures are considered only the lists of species presented in the appendices to the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended.

At national level, the status of the protected wild species is the following:

Fungi

During the last years, as a response to the worldwide initiatives on biodiversity, Romania manifested as well an increase of the interest for the evaluation of the fungi natural habitats importance. Out of the 8727 species of fungi, the Red List of macro-fungi in Romania mentions 179 (2%), in agreement with the criteria and recommendations of IUCN in 2001.

Bryophytes

Currently, the list of bryophytes in Romania includes approximately 965 species (Ştefănuţ, 2008; Sabovljević & al., 2008), out of which, the Red Book of Bryophytes in Europe (1995) mentions 17 hepatic species and 91 filicatae species. Among them, 1 hepatic species and 6 filicatae species have a problematic presence in Romania (they were initially reported and, subsequently, unconfirmed), 5 hepatic species and 27 filicatae species are new for Romania (reported in the last 8 years) or are missing from the list of endangered bryophytes in Romania (ECCB 1995), but are included in „*Bryophyta* – Muşchii din Flora României" (Dihoru 1994). The *Orthotrichum scanicum* Gronvall species was included in the International Red List of Bryophytes in 2000, as a vulnerable species (Ştefănuţ S., 2004).

The main legal instrument for the bryophytes conservation is Law no. 13/1993 for the adoption of Bern Convention. 10 endangered bryophytes in Romania are included here. 8 species are included in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended.*

Vascular plants

Out of the total number of vascular plants at national level, 46 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 47 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 34 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended.*

According to the evaluations in the Red Book of Vascular Plants in Romania, (Dihoru and Negrean, 2009), the ratio between the total number of taxons in the Romanian flora and those threatened by disappearance and between the various categories of the latter is displayed in table no. 4.2:

Table no. 4.2: Conservation status of the vascular plants in Romania

Species and	**Threatened**							

subspecies of the Romanian flora	species and subspecies	CR	VU	EN	LR	DD	EX	NE
3795	548	240	157	100	37	7	5	2
100 %	14,5 %	43,7 %	28,8 %	18,2 %	6,7 %	1,3 %	0,9 %	0,4 %

CR – critically endangered
VU – vulnerable
EN – endangered
LR – lower risk
DD – data deficient
EX – extinct
NE – not evaluated

VERTEBRATES

Mammals: 28 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 49 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 7 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. 74% are mentioned in the Red Book of Vertebrates in Romania, 61% are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993. 29% are provided in NATURE 2000. In accordance with the criteria set by IUCN, out of the 57 protected species, 6.94% are critically endangered (CR), 37.5% endangered (E), 54.17% vulnerable (V) and 1.39% extinct (EX).

Birds: all species have a special protection regime, according to art. 33 of the *Government Emergency Ordinance no. 57/2007*, approved with amendments and supplements by Law no. 49/2011. 18% are present in the Red Book of Vertebrates in Romania, 62.75% are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 32.5% are provided in NATURE 2000. In accordance with the criteria set by IUCN, out of the 72 species in the Red Book of Vertebrates in Romania (2005), 5.55% are extinct, 27.78% are critically endangered, 25% are endangered, 51.39% vulnerable and 4.17% threatened (NT).

Reptiles: 82.61% out of the 23 species present in Romania are in Red Book of Vertebrates in Romania, 100% are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993. 6 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the*

special protection areas, 18 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection* and 5 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. In accordance with the criteria set by IUCN, out of the 19 protected species in Romania, 15.90% are critically endangered, 42.10% are endangered, 31.58% are vulnerable and 10.53% threatened.

Amphibians: 7 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 11 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection* and 6 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. 84.21% are mentioned in the Red Book of Vertebrates in Romania (2005), 100% are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 26.31% are provided in NATURE 2000. In accordance with the criteria set by IUCN, out of the 19 protected species in Romania, 17.65% are endangered, 52.94% vulnerable and 24.41% are threatened.

Fish (freshwater): 25 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 2 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection* and, 11 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. 38.83% are mentioned in the Red Book of Vertebrates in Romania (2005), 33.98% are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 21.36% in NATURE 2000. In accordance with the criteria set by IUCN, out of the 30 protected species, 3.33% are extinct, 33.33% are critically endangered, 36.67% are endangered and 60% vulnerable.

INVERTEBRATES

Crustaceans: 1 is provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas* and in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection* of the *Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended*. 1 is provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 1 in NATURE 2000.

Coleopterans: 20 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas* and in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 7 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended. 6 species are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 13 species in NATURE 2000.

Lepidoptera: 20 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 27 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 61 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended. 9 species are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993 and 19 in NATURE 2000.

Odonata: 5 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas* and in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection* of the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended. 6 species are provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993.

Orthoptera: 7 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 8 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 13 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended. 1 species is provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993.

Molluscs: 8 are provided in *Appendix no. 3 on the plant and animal species which conservation needs the assignment of special conservation areas and the special protection areas*, 6 are provided in *Appendix no. 4A on the plant and animal species of community interest which need a strict protection*, 16 are provided in *Appendix no. 4B on the plant and animal species of national interest which need a strict protection* of the

Government Emergency Ordinance no. 57/2007 approved with amendments and supplements by Law no. 49/2011, as further amended and 7 species in NATURE 2000.

Hirudinea: 1 species provided in the appendices to the Bern Convention on the conservation of wildlife and natural habitats in Europe, which Romania adhered to by Law no. 13/1993.

Until now it was made the **Red Book of Vertebrates of Romania (2005)** and the **Red Book of Vascular Plants of Romania (2009)**. Also, the **Red List of species of macrophytes, invertebrates, fish and mammals of the Black Sea,** status indicator for the biodiversity in the Romanian marine sector, was updated in 2009 by the National Institute for Marine Research and Development „Grigore Antipa" based on the results obtained in the last 5 years. This includes 223 species: 19 macrophytes and higher plants (8.5%), 58 invertebrates (26%), 142 fish (63.7%) and 4 mammals (1.8%), which IUCN categorization it is shown in table no. 4.3.

Table no. 4.3: Species status found in the Black Sea

Group of marine species	**Status according to IUCN categories v.3.1, 2001 and v.3.0, 2003**								
	RE	**CR**	**EN**	**VU**	**NT**	**LC**	**DD**	**NA**	**Total**
Macrophytes	1	3	7	3	0	2	3	0	**19**
Invertebrates	6	12	6	8	1	11	12	2	**58**
Fish	0	0	2	4	27	32	77	0	**142**
Mammals	0	0	3	0	0	1	0	0	**4**
Total	**7**	**15**	**18**	**15**	**28**	**46**	**92**	**2**	**223**
%	**4%**	**7%**	**9%**	**7%**	**14%**	**13%**	**45%**	**1%**	

Where:
RE – regionally extinct
CR - critically endangered
EN – endangered
VU – vulnerable
NT – near threatened
LC – least concerned
DD – data deficient
NA – not applicable (for species that are not in their natural range)
Among the marine species included in the red list, the species protected by national legislation (Government Emergency Ordinance no. 57/2007, approved with amendments or additions by Law no. 49/2011, as amended) are the three species of dolphins, all sturgeon species, five species of mackerel and three species of gobies, i.e. about 20 species.
In the absence of specific regulations and the institutional framework suitable for ensuring a favourable conservation status of strictly protected species of community and national interest outside the protected natural areas, their conservation is currently made only in protected natural areas, outside them the application of legal provisions

which establish general measures of protection is quite difficult. This causes the lack of Action Plans for the conservation of protected species. Of all species protected until today PACSP were conducted only for large carnivores (bear, wolf, lynx), species of dolphins in the Black Sea and the Dalmatian pelican.

Migration corridors for strictly protected species are still insufficiently identified and delineated.

Also, there were not taken over yet the amendments of appendices to the Conservation of African-Eurasian Migratory Water vbirds Agreement (AEWA), ratified by Law no. 89/2000 and to the Agreement on the Conservation of Bats in Europe (EUROBATS), to which Romania adhered by Law no. 90/2000.

Operational objectives for ensuring a favourable conservation status for protected species

1. Developing, updating and adopting the National Lists and Red Books of flora and fauna;
2. Adopting the specific regulations and the institutional framework suitable for ensuring a favourable conservation status of strictly protected species of community interest and those of national interest outside the protected natural areas;
3. Improving the institutional and administrative control for the control of collection/ capture activities, purchase and sale of protected species;
4. Identifying and defining species migration corridors;
5. Establishing, adopting and implementing the Action Plans for the Conservation of Protected Species;
6. Ratification of the amendments to annexes AEWA and EUROBATS.

D. SUSTAINABLE USE OF BIOLOGICAL DIVERSITY COMPONENTS

If the development of economic systems in the past century had as support the idea that the environment is not a limiting factor of development, major importance having just the financial capital, the problems created by the drastic reduction of increasingly visible resources and effects of the impact of human activities on the environment and quality of life caused a change of thinking in economic policy. At present the natural capital together with the financial and human one must constitute the pillars of any development.

Sustainable use of biodiversity components presupposes the ecosystem approach of the integrated management of resources and the integration of biodiversity conservation priorities in sector policies and strategies. Until date, these goals are not found in a coherent and unified form in sectoral policies, the main reason being the lack of a monetary value given to services offered by natural ecosystems, services which are now considered public goods with no market value. Therefore, as shown by interim

conclusions of a study carried out internationally[2], it is essential to assess correctly the value of natural resources, renewable and non-renewable, and of services offered by the normal functioning of ecological systems and integration of costs of conservation and restoration of biodiversity in the assessment of policies cost and sector strategies.

Operational objectives for ensuring the integration of biodiversity conservation priorities in sector policies and strategies

1. Proper assessment of strategies, policies, plans and programs impact on species and habitats for which the protected natural areas of community interest were declared;
2. Increase of participation of interested factors in proper assessment procedures of impact;
3. Internalization of biodiversity value in cost/ benefit analysis related to investment projects;
4. Establishing eco-labelling schemes based on life cycle analysis of products for the production, distribution, use or storage may affect biodiversity;
5. Integrating the concept of biodiversity in strategic environmental assessment mechanisms and environmental impact analyzes;
6. Identifying and introducing incentives for sustainable use of biodiversity components and removing those who have negative impact
7. Increase of importance of ecological functions of land, including riparian areas and those with alluvial vegetation, to combat erosion processes and to maintain ecosystem functions.

D1. SPATIAL PLANNING

The development of Romania was done by sudden and radical changes either because of the desire for integration and rehabilitation of the "delay" towards Europe, either because of political regimes. The imbalances resulted were alternated quickly (forced communist industrialization, brutal urbanization of rural environment, intensive cooperative agriculture, privatization by total destruction, European integration by abandoning the traditions and the like) causing damages, without allowing the sustainable regeneration of urban and rural systems.

Traditional assemblies that have developed and conserved practices, valuable ecosystems and landscapes have been disregarded by the communist state policy because of bourgeois connotations. Now, they are threatened by the economic interests of the new consumer society formed after the 90s, by phenomena of fragmentation, destruction and abandonment.

Values and rural landscapes are losing more and more functions, because of population migration to cities and the migration phenomenon. At the level of urban settlements, uniformity and collective housing imposed during the communist period is perpetuated, by not existing policies to encourage quality and to diversify housing types.

[2] TEEB – The Economics of Ecosystems and Biodiversity (The economic value of ecosystems and biodiversity)

Communities living traditionally represent a landmark of national culture and regional and European identity. Romania is one of the few European countries that kept living traditions according to the local spirit. These traditions refer to principles and techniques of vernacular architecture and agriculture in harmony with the environment, flora and fauna with little impact on biodiversity.

Traditional values are valid instruments, checked in time for the operation of a sustainable society. Accelerated transformation of ecosystems requires restoring these principles, the protection and conservation of values and natural and cultural landscapes.

This situation was generated by the following legislative and administrative shortcomings:

a) Failure to take into account the concept of landscape (natural and/or cultural) in the implementation and evaluation of spatial planning and development of infrastructure projects (transport, energy, production), in accordance with the provisions of the European Landscape Convention, ratified by Law no. 451/2002;
b) Weaknesses, incoherence and legislative exemptions, insufficient regulations and penalties for offenses concerning zoning, urban planning and protection of natural and cultural heritage;
c) Weak institutional framework, with conflicts of jurisdiction between several authorities which lead to the reduction of responsibilities and poor implementation of legislative provisions;
d) Serious imbalances in urban ecosystems caused by failure to take into account local biodiversity and excessive pollution;
e) Lack of a coherent policy for architecture, planning, urban planning and landscape, that takes into account both economic and social factors, but also environmental and cultural factors.

Operational objectives for ensuring the integrated management of spatial planning and urbanism

1. Developing and implementing urban landscaping policies and urbanism in support of biodiversity conservation. Special attention should be paid to ecological corridors, areas outside the protected natural areas but which have high levels of biodiversity, such as mountain areas, coastal areas and wetlands;
2. Inclusion of the landscape conservation as one of the main conditions of development projects financed through Structural and Cohesion Funds and national public funds as well;
3. Adoption of a coherent policy on spatial planning, urban planning and landscape.

D2. FOREST MANAGEMENT

In Romania forest management is carried out according to the principles of sustainable management established by the Forest Code - Law no. 46/2008, as amended and supplemented, as follows:

a) promoting practices that ensure sustainable forest management;
b) ensuring the integrity of forestry and permanence of forest;
c) increasing the surface of lands occupied by forests;
d) stable long-term forest policies;
e) ensuring the adequate level of legal, institutional and operational continuity in forest management;
f) the primordial forestry environmental objectives;
g) increasing the role of forestry in rural development;
h) promoting the fundamental natural forest type and ensuring forest biological diversity;
i) harmonizing the relations between forestry and other fields of activity;
j) supporting forest owners and stimulating their association;
k) preventing irreversible degradation of forests due to human activities and destabilizing environmental factors.

Forest management is made based on forest management plans developed under the technical rules with the compliance of the following principles:

a) the principle of timber harvests continuity;
b) the principle of functional effectiveness;
c) the principle of ensuring the conservation and improvement of biodiversity;
d) the economic principle.

After CBD ratification, were established a number of principles and criteria for the certification of forest products, in order to establish a sustainable management of forests. In Romania the certification process started in 2000, in the forests of Vânători Neamţ Natural Park. This process was part of the project entitled "Biodiversity Conservation Management" funded by GEF/ World Bank, the Romanian Government and RNP.
Replicating this process began in 2004 and there have been certified around 1 million hectares of forests owned by the state, administered by RNP. Also, 25 centres for woodworking have been certified.

The implementation of forest certification process will determine the consideration of environmental and social aspects in the process of sustainable forest management because it requires special conditions for the identification of components of forest biodiversity and measures for its conservation. Certified products are becoming increasingly competitive and demanded on the market, compared to non-certified ones. This is the main incentive and development factor of the certification process. Furthermore, the process must extend to private forests, too.

Out of the 2.097 hectares of forest that are not owned by the state, only 1500 hectares are managed by authorized forest districts. In accordance with the provisions of the Forest Code, all forest owners must have at least contracts with forest districts to ensure some basic services (security, marking the extracted trees, plantings and the like). On

the unmanaged surfaces, the volume of illegal logging is higher and the practiced management is not a sustainable one (types of cuts).

Currently, there are areas in the national forest, particularly under private ownership, operated and non-regenerated. Out of the total of 8.574 ha of plantings in 2007, 8.000 hectares were planted by the RNP and only 574 ha were planted in forests managed by private forest districts, by local authorities. According to official statistics (2007 Statistical Yearbook) the surface on which cuttings were executed in 2007 was about 4.458 hectares, but it has increased in recent years, especially in spruce stands (Fig.4.1).

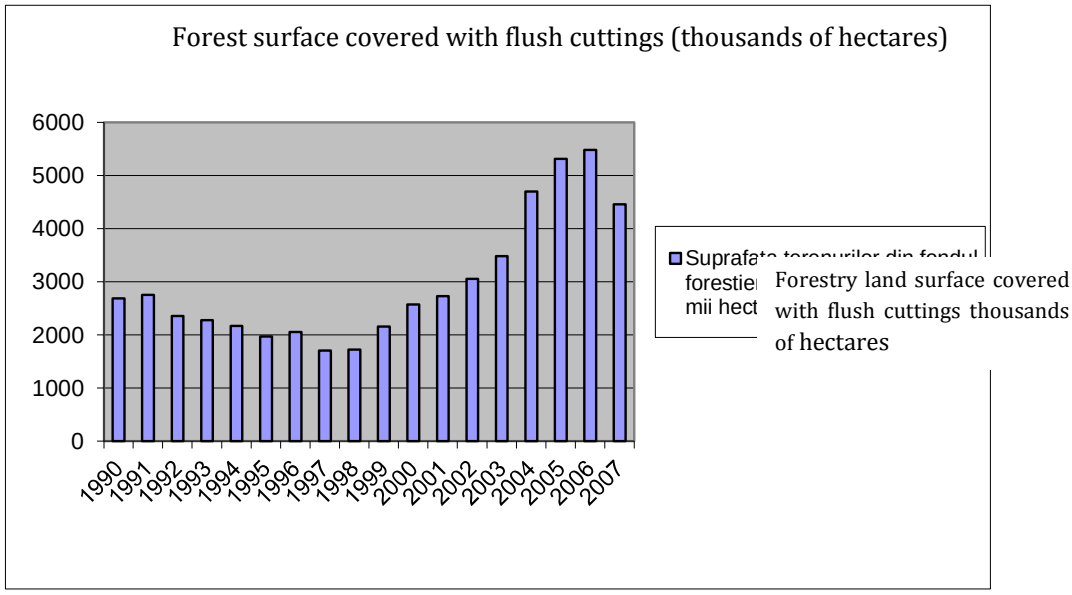

Figure 4.1. Forest surface covered with flush cuttings (hectares)

Legal flush cuttings represent less than 5.7% of the total cuts since 2009. The total area of sanitation cuts was 1.125.620 hectares, much higher than normal (84. 276 ha), in line with management plans. This is due to the subjectivity of forest managers.

The improper use manner of wood resources and illegal cuts

The process of restitution of forests in three stages had some negative effects on biodiversity and the environment. According to official statistics, after the first stage of restitution in 1991, out of 350.000 hectares of returned forests, about 30% were cut to flush (more than 100.000 hectares). And the next steps, in 2000 and 2005 had negative effects on forest ecosystems. The phenomenon began to decline with the improvement of the legislative framework, in 2005-2008, and by increasing the number of personnel at the Inspectorates of Forest Control.

According to official reports concerning the state of forests, in 2006 almost 700 hectares of forest were affected by the illegal cuttings in private forests, and in the forests owned by the state 64.000 cubic meters were cut illegally.

Forests are also valuable energetic resources. According to the study regarding the strategic approach of Romania on bio-fuels, in 2005 was harvested a volume of timber of 15671.103 cubic meters out of which 414.103 cubic meters resulted in technological losses and 869.103 cubic meters hard shell. This potential annual loss of approx. 8% of wood resulted of the primary processing can be used to produce second generation bio-fuels. Introducing perennial forestry crops for the production of second generation bio-fuels would reduce the life cycle of trees to 3-15 years. Woody species recommended for cultivation in this system according to these strategic lines as poplar and all willow types, giving a production of dry mass between 10-15 t/hectares/year (180-260 GJ/hectares/year).

The main causes of illegal logging:

a) The level of poverty of the local population

b) The transactions with woodland are not properly registered, and the new owners do not conclude management contracts with forest districts

c) More than 200.000 hectares are not managed by authorized structures

d) Insufficient inspectors

e) The lack of volume control of processed wood

f) The development of unauthorized woodworking small businesses

g) The lack of financial resources for the compensation or for the administrative activities support of private forest owners.

Operational objectives for ensuring the sustainable management of forests

1. Implementing of General guides for the conservation of forests at European level (Helsinki Conference – H2 Resolution) and the recommendations of the Forest Intergovernmental Forum (IPF);
2. Strengthening the institutional capacity of administration and control of wood mass exploitation activities;
3. Developing stimulation mechanisms of forest land owners for forest certification.

D3. EXPLOITATION OF WILD SPECIES WITH ECONOMIC VALUE

The exploitation of wild plants and animals pertaining to species whose removal from the nature and exploitation make the object of management measures, as well as of other species with the same protection regime, is made in compatible conditions by maintaining these species in a favourable conservation state, where appropriate, taking the following measures: the regulation of access in certain areas and/or certain periods; temporary and/or local interdiction of harvest and capture certain species; the regulation of periods, ways and manners of harvest/capture, according to the legal provisions in force; the establishment of an authorization system of harvest/capture of plants and wildlife in trade purposes, including the establishment of quotas; encouraging the harvest and growth in captivity of species of wild flora and fauna of economic interest in order to reduce the pressure on natural populations.

The activities of harvesting, capture and/ or acquisition of plants and wildlife, as well as parts and products thereof, are carried out under authorizations of harvesting /capturing

issued by county agencies for environmental protection through the specific procedure of the *Minister of environment and sustainable development order no. 410/2008 on approving the Procedure for authorizing the activities of harvesting, capturing and/or acquisition and/or marketing, on the national territory or to export of mine flowers, plant fossils and fossils of vertebrate and invertebrate animals, and the plants and animals of wildlife and their import, as amended and supplemented (it abolished the order of the minister of water and environmental protection no. 647/2001 on approving the Procedure for authorizing the activities of harvesting, capturing and / or acquisition and marketing on the domestic market or to export of plants and animals from wild flora and fauna, and their import, as amended).*

In Romania we have a great variety of flora and fauna, valuable economically and socially, being used in various sectors. In 2008, there were issued 1.136 authorisations (248 according to the *Ministerial Order no. 647/2001 on approving the Procedure for authorizing the activities of harvesting, capturing and/or acquisition and marketing on the domestic market or to export of plants and animals from wildlife, and their import and* 888 according to the *Ministerial Order no. 410/2008 approving the Procedure for authorizing the activities of harvesting, capturing and/or acquisition and/or marketing, on the national territory or to export, of mine flowers, plant fossils and fossils of vertebrate and invertebrate animals, and plants and animals from wildlife and their import, as amended and supplemented)* for activities of harvesting, capturing and/or acquisition and marketing on the domestic market of plants and animals from wildlife.

According to the *Ministerial Order no. 647/2001 on approving the Procedure for authorizing the activities of harvesting, capturing and/or acquisition and marketing on the domestic market or to export of plants and animals from wildlife and their import*, were issued a total of 248 authorisations (72 for flora and 176 for fauna), and according to the *Ministerial Order no. 410/2008 on approving the Procedure for authorizing the activities of harvesting, capturing and/or acquisition and/or marketing, on the national territory or to export of mine flowers, plant fossils and fossils of vertebrate and invertebrate animals, and plants and animals of wildlife and their import, as amended and supplemented*, were issued a total of 888 authorisations (435 for fauna and 453 for flora).

The collection and marketing of medicinal and aromatic plants are also subject to the specific regulations of Law on medicinal and aromatic plants no. 491/2003 republished.
In order to ensure sustainable use and maintain a favourable conservation status of populations of species of economic interest, under the national law, trade is also regulated (export, import into / from third countries and putting up for sale from Romania to other Member States) with non-CITES specimens of species (species not included in the Appendices of Regulation (EC) no. 407/2009 of the Commission of 14th May 2009 amending the Regulation (EC) no. 338/97 of the Council on the protection of wildlife fauna and flora by regulating the trade therein) harvested / captures in Romania. The competent authority, represented by the Ministry of Environment and

Climate Change, authorizes the performance of these activities through agreements of export/import or certificates of origin.

Fishing

In 2008, as in previous years, within the Romanian marine fishing the activity of industrial fishing, practiced by professional fishermen, was done in two ways: fishing with active gear, carried out by trawler coast ships at depths greater than 20 m and fishing with fixed gear, practiced along the coastline, in 28 fishery points, located between Sulina and Vama Veche, in shallow waters (3-11 m). It is added to it the small-scale coastal fishing as well.

Stock biomass, for the six main species of fish, was estimated at about 92.806 tonnes in 2008 (of which 60.000 tonnes for sprat), compared to 75.316 tonnes in 2004 - 2005 and only 15.350 tonnes in 2006 (when they were taken into consideration only the sprat and species of gobies).

In 2008, both for the eggs and the larvae of sprat, were recorded lower values in terms of the number estimated and in terms of middle densities, compared to the previous year, and the number of juvenile whiting was about 4 times lower compared to 2006. Anchovy continues to be the dominant species in the ichthyoplankton in the warm season of the year, both for eggs and larvae.

Commercial fishing in inland waters is conducted in natural water basins that constitute the national public domain: Danube, Danube Delta, Razim-Sinoie lacustrine complex, barrier lakes, and the like. By the end of 2005, the main species caught in inland waters were the following: crucian carp (47.44%), bream (14.37%), Danube shad (11.55%), carp (5.05%), roach (4.40%), catfish (2.50%), zander (2.82%), pike (2.60%). The production from inland waters was 4.042 tonnes and represented only 44.67% of the one obtained in 1995. However, in 2005 there was an increase of 24.18% of the production in inland waters towards the previous year.

The area planted for aquaculture was in 2005 of approx. 100.000 hectares out of which: 84.500 hectares are represented by fish farms, 15.500 hectares of nurseries and 25 hectares of farms for raising trout. The main fish species cultured are: common carp, East-Asian cyprinides (dogwood, grasshopper, bighead carp) crucian carp, perch, pike, catfish (representing 85% of the production and 15% is the production of salmonids (rainbow trout, brook trout and indigenous trout).

The production obtained from aquaculture in 2005 was 7.248 tonnes, representing a weight of 54.56% of the total fish production and 36.73% of the production in 1995. The production obtained in 2006 was 9.107 tonnes, and the production obtained in 2007 was 10.312 tonnes. Due to privatization and legal status of lands, the investment level has been reduced. Basin areas are large, which leads to high maintenance, operation and upgrading costs. At the moment there is no marine aquaculture in Romania. Only one private company is involved in the growth of mussels.

The development of aquaculture of fish species with economic value and high nutritional quality (sturgeon, trout and the like) has good development opportunities and should be encouraged instead of a simple increase in production of native species.

The main problem in regard to fisheries is the lack of a proper assessment of the conservation status of fish species, the existing data on stocks being contradictory.

Hunting

According to the *Law of hunting and protection of cinegetic fund no. 407/2006, as amended and supplemented*, fauna hunting is considered a renewable natural resource, public good of national and international interest, and hunting exercise is made in order to ensure the ecological balance, improvement of quality of hunting wildlife populations, scientific research, and for teaching or recreational-sports purpose.

The conservation of wildlife hunting, the administrator with the central public authority responsible for environmental protection and the manager limits in every hunting fund one or more tranquillity zones of cinegetic wildlife where the exercise of hunting is prohibited. The tranquillity area of cinegetic wildlife totals minimum 10% of the total area of each hunting fund. In ecological migration corridors or natural habitats of community interest, tranquillity areas are constituted wholly or partly, as appropriate, in their area. In national parks and full protection zones and strict protection of natural parks, hunting is prohibited.

Almost all the surface of Romania is divided in hunting funds (21.966.355 hectares). From a total of 2151 hunting funds, 306 are managed by RNP, out of which 8 hunting funds are for research. The reserves for the conservation of genetic resources have been designated for large carnivores (7), common deer (3), bison (2) and as wintering areas for birds (2). Most cinegetic funds are managed by hunting associations affiliated to the General Association of Hunters. Also, there are some cinegetic funds managed by associations of hunters non-associated to the AGV.

For the strictly protected species such as the brown bear, lynx, wolf and wildcat, herd assessment has started to become a participatory process. Also, it is observed in the assessment of herd of chamois of national and natural parks.

In the Report on the State of Forests of 2007 were identified some problems on the practice of hunting, such as:

- The procedures for issuing hunting permits, the hunting methods and the principles for selection of animals to be captured are not always respected;
- The methods of assessment of population herds is not always respected, catch quotas being over-assessed and leading to a decline of populations.

Breeders of hunting and hunting complexes

In Romania there are 18 hunting complexes where hunting interest species are kept for hunting. Some complexes owe different species or subspecies and alien varieties that can affect natural wild fauna if escaping into the wild. Beyond the issues of animal rights, largely, the existence of these pens may reduce the hunting pressure on wild species, many hunters preferring easier ways of hunting.

Operational objectives for sustainable exploitation of economic value species

1. Promoting sustainable use of economic value species;
2. Developing technical conservation techniques to ensure sustainable use of economic interest species;
3. Prohibiting aquaculture and breeding practices in captivity of hunting interest species that can affect the preservation state of wildlife and natural habitats.

D4. AGRICULTURE

With a total agricultural area of 14.590,9 thousand hectares (or 61.2% of the country's total surface) in 2011, Romania has important agricultural resources in Central and Eastern Europe. Most of the agricultural land is arable (64.1%) and pastures and hayfields also hold significant shares (22.5% and 10.7% respectively). Vineyards and orchards, including nurseries, represent the rest of 1.4% and 1.3% of the arable land of the country (*INS - Romanian Statistical Yearbook, 2012).*

According to the Environmental monitoring report of PNDR, the agricultural area of Romania decreased slightly from year to year. The transfer of land to the construction sector was the main cause of the reduction of agricultural surface in the last twenty years. The reduction of land, by their inclusion in urban areas is a phenomenon found in areas with higher productivity, while the change of use of the agricultural land in the forest one occurs mainly in deprived areas.

The restoration and redistribution of agricultural areas began in 1991, taking place in several successive stages. As a result, by 2005, 95.6% of the agricultural surface of the country was returned to the former owners or their heirs. However, property titles were issued without any proper verification of lands from a cadastral point of view and without registration in the Land Registry. The identification and demarcation of parcels returned were not always performed properly, thus making the subject of lots of litigations and disputes.

The lands owned by the state have currently a share of only 0.6% of the total arable land (442.7 thousands of hectares), 12.6% of the total grassland surface (413.7 thousands of hectares) and 0.3% of the total area of meadows (41.6 thousands of hectares) (*INS, 2012*).

In 2010, out of the total 3.859.043 agricultural holdings, 3.724.332 were using an agricultural area of 13.306.128.33 hectares. The average utilized agricultural area of agricultural holdings in Romania is 3.45 hectares, while an agricultural holding that used the agricultural area is 3.57 hectares, which places it well below the average size

of a European agricultural holding. (*INS - Romanian Statistical Yearbook, 2012*). This low average masks the difference between the agricultural holdings in terms of their size, standing out a bipolar distribution. Almost 29% of the utilized agricultural area (SAU) is operated by 3.403.922 (representing 92% of all agricultural holdings) small agricultural holdings, under 5 hectares, while a total of 298.193 agricultural holdings with dimensions between 5 and 50 hectares (representing 8% of total agricultural holdings) manages 19% of SAU, and only 22.244 agricultural holdings with dimensions exceeding 50 hectares (representing less than 1% of all agricultural holdings) manages 52% of SAU. The segment of average agricultural holdings, with areas ranging between 5 and 50 hectares, is low compared to other EU countries and it needs to be developed (*INS - General Agricultural Census, 2010*).

Most of the agricultural area of holdings with legal personality belongs to public administration, i.e. municipalities and communes (44.2%). The rest is divided between companies with majority private capital (35.81%), private agricultural units (15.44%), companies with majority state capital (1.25%), cooperatives (0.08%) and other types (3.2%) (*INS - Romanian Statistical Yearbook, 2006*). From 2006 to present this data set is missing from the Romanian Statistical Yearbook.

The performance in agriculture has been low and has become increasingly unstable. This is the result of a dual and 'obsolete' structure of agricultural holdings, the lack of markets to support the restructuration and modernization of the agriculture sector and the food industry that has not yet completed the process of restructuration and modernization. Areas planted with noble grape vine during 1998-2005 decreased by 16%. The yield of varieties of noble grape vine is only 30 hl of wine/hectare, well below the European average of 50 hl/hectare. The area planted with hybrid varieties in individual households also dropped by 20% over the same period. The area covered with orchards also followed a downward trend, falling by 15% during 1998-2005. On average, the area cultivated with vegetables exceeded 260.000 hectares during 2000-2005, registering a peak of 380.000 hectares in 2004. Despite the fluctuations caused by climatic factors, the overall trend of this area has been upward.
Since 2007, Romania implements the provisions of the Common Agricultural Policy (PAC), farmers of Romania benefiting from direct area payments (the scheme of single area payment - SAPS and the scheme of complementary national direct payments - PNDC), provided that the land is maintained in good agricultural and environmental conditions.
Organic farming is a dynamic sector in Romania which recorded an upward trend in recent years, both in the vegetable and livestock production sector.
At the end of 2012 nationwide were registered in the organic farming system approx. 26.000 operators.
In accordance with the provisions of the Government Decision no. 759/2010 *on granting specific aid for improving the quality of agricultural products in organic farming sector, as amended and supplemented*, MADR is providing financial support specific for the conversion period of operators holding registered holdings in the

ecological agriculture system, being in the conversion period, by granting additional annual payments per holding, in 2010-2013.

In PNDR has been included, since 2011 the package of organic farming (EC approved on 2nd May 2011).

Another measure aimed at promoting the products is the support of COM by funding 50% of the promotional programs value submitted by professional and inter-professional organizations in the sector, involving at least 20% of the actual cost of the shares, 30% of the value being provided by the state budget.
In order to promote Romanian organic products both on the European and international market, ME in collaboration with MADR through the National Export Strategy - organic products component, for the period 2010-2014, supports 50% of the costs of participation of economic operators at fairs and international exhibitions.

Livestock numbers fell drastically in some species during the transitional period. Abolishing or privatizing agricultural production cooperatives and state farms have resulted in the emergence of significant structural changes. By not being able to use the spaces and technical facilities in the former intensive production units, small farmers have relied on animal husbandry, mainly for their own consumption.

Cultivation of genetically modified higher plants
Only genetically modified higher plants authorized at EU level can be cultivated commercially. The community authorization procedure is based on the risk assessment on the environment and human and animal health and compliance with the labelling and traceability.

Currently, the following are authorized for cultivation in the EU,:

a) **MON810 genetically modified maize**, for protection against corn rootworm;

b) **'Amflora' genetically modified potato**, with an increased content of amylopectin in starch, authorized only for cultivation in view of exclusively industrial processing.

Currently, in Romania only MON 810 maize is cultivated.

The situation of cultivated areas, presented in Table no. 4.4 shows a significant reduction after 2009:

Table no.4.4

year	2007	2008	2009	2010	2011	2012
Surface, hectares	332,50	6130,44	3243,52	822,60	588,18	216,93

MON 810 cultivation license holder is obliged to monitor the crops of genetically modified higher plants, in order to identify possible adverse effects on biodiversity, and to report annually to the competent authority (ANPM) and COM.

Monitoring activities of genetically modified higher plant crops are required by the national authorities, and effective control measures.

In order to protect biodiversity, through the environmental protection framework law are prohibited any activities of production, cultivation, storage, processing, marketing of genetically modified living organisms, in protected natural areas.

Considering the provisions of the Governing Programme 2013-2016, respectively, supporting the organic farming and organic products, as a strategic development option for Romania, the following are required:
- maintaining and promoting the cultivation of native plant species and the use of best practices in ecological and conventional production systems, thus helping to maintain the natural balance and biodiversity conservation;
- applying measures to ensure the coexistence of genetically modified crops with the conventional and organic ones, and the use of best practices in used production systems.

In order to consolidate the sustainability of the agricultural sector ecologically speaking, and to harness the efforts of farmers, the European Commission by the new PAC 2014-2020 proposes that 30% of direct payments to be granted for the adoption of practices which allow the optimal use of natural resources. It is about practices that are environmentally effective and can be implemented in a simple way, such as: crop diversification, maintenance of permanent pastures, protection of environmental reservoirs and landscapes.

Romanian agriculture has huge potential that must be exploited on the principle of sustainable development, taking into account the application of biodiversity conservation measures. The main problems that hinder this process are the following:

a) The lack of incentives for the approval and promotion of indigenous varieties;
b) Insufficient stimulation to promote indigenous animal breeds;
c) The lack of some conservation programmes of autochthonous approved breeds and varieties;
d) The low interest of farmers for the production of crops with unused agricultural potential such as lentils, beans, millet, and the like, caused by the reduced demand on the market and the restricted consumption of the population for these plants.
e) The excessive fragmentation of agricultural lands.
f) The reduced average size of agricultural holdings existing in Romania compared to other Member States.
g) The lack of a general cadastre in agriculture;
h) The lack of a national strategy on bio-safety.

Operational objectives for ensuring the integrated management of agriculture

1. Maintaining and developing extensive agricultural practices and traditional methods of use of lands that ensure the conservation of semi-natural habitats:

a) Developing the standards for good agricultural practices
b) Promoting and ensuring the viability of species and varieties/breeds contributing to the conservation of ecosystems and wild species
c) Developing current agricultural and environment schemes

2. Reducing negative effects of intensive agricultural practices
3. Implementing the Addis Ababa Principles and the Guidelines on Sustainable Use.

D5. TOURISM

Tourism has been one of the most successful industries in growth after the Second World War, a significant growth registering in recent years the tourism in protected natural areas. Given the fact that environmental issues are becoming increasingly important on the public agenda (especially in countries of Europe and America that generate tourism), travel agencies are becoming increasingly sensitive both to the increased interest towards protected natural areas, and to the impact that tourists may have on them. World Resources Institute (*n.t. World Resources Institute*) reports that over the last decade tourism based on natural experiences increased from 20% to 30%. In addition, about 40% of the international tourism volume is towards the developing countries and with economies in transition, in which are located the vast majority of protected natural areas, as is the case in Romania. This is a surprising increase from the 3% registered in 1950. These new destinations are often considered to be "attractions of biodiversity" and although they cover only 2% of the entire surface of the Earth, they comprise more than half of the entire biodiversity of the planet. As the fragile ecosystems are choked by traffic (human or vehicle) and its associated pollutants, their main attraction point is threatened by destruction. Therefore, the challenge facing the tourism industry of Romania is to maintain the balance of answering the growing demand for natural protected areas and preserve their integrity.

Companies that promote an environmentally responsible tourism are recognizing more and more that they not only have a huge impact on the natural environment, but also on the social and economic development of communities. Many companies operating in the tourism industry play a proactive role in preserving cultural traditions. Many of them want to be responsible corporate citizens and countless hotels and resorts, large or small, have imposed practices to save energy/water sources or reduce pollution, being leaders in their communities. While these companies contribute to preserve the quality of new destinations and their prospective customers, they also strengthen its loyalty towards the brand and their own public image.

A remarkable number of 8 million people are employed directly by the EU's tourism sector, and tourism also has an important indirect impact on the number of jobs in services related to the industry. Some sources estimate that the number of jobs in tourism will grow by over 2.5 million over the next 10 years. Therefore tourism will be, over the coming years, an important opportunity for creating new jobs - especially in Romania. But the growth of the number of jobs is not the only beneficial impact of tourism. Tourism activities are also social factors, because tourism is not just an activity for the few privileged, but rather a widespread practice for the vast majority of EU citizens.

The main problems that tourism development can generate in protected natural areas and outside them:

a) landscapes destroyed because of the construction of new accommodation facilities
b) the erosion of intensely visited areas
c) the presence of tourists can make disappear the local customs, may change the value of land and labour, can cause the development of multinational companies detached from local issues
d) the transport to and from these areas can have a negative impact by the high consumption of fossil fuels and the release of CO2 and pollutants
e) the conversion of a tourist destination in an area totally dependent on this activity, if it is not kept a diversification of activities in the area
f) the use of inappropriate means of transport (ATVs) off-highway and within the protected natural areas.

Conventional tourism development considers culture and the natural environment as a resource for exploitation and exposed to depletion. Conventional tourism is a short-term industry, marketing being the solution of many problems. But marketing policies almost always aim to increase the number of visitors, without taking into account the responsibility for the natural environment. Sustainable tourism is a concept designed not to stop tourism, but to conduct it so as to ensure the conservation of natural and cultural environment, and to ensure long-term development of business. In order to find this balance between conservation and development, not only tourism activities planning is needed, but also integrating tourism in the sustainable development policy of the area as a whole.

Within the research project *"Creating a Romanian competitive agro-tourism offer on the domestic and international market by developing tourist and recreational conditions specific to natural conditions of rural areas (mountains, hills, plains, seashore, delta) and ethnographic areas"* made by the National Institute of Research and Development in Tourism in 2002, were identified 20 representative ethnographic areas for our country. In all these areas it is an important spiritual inheritance, represented by popular architectural values sustainable traditional methods and techniques of land and natural resources use, traditional crafts, folklore and ancestral customs, popular holidays, which should be the basis for the development of ecotourism.

Operational objectives for ensuring the integrated management of tourism

1. Including landscape elements and biodiversity conservation principles as major conditions for the development of tourism infrastructure;
2. Reconverting mass tourism of protected natural areas, including Nature 2000 sites, towards sustainable tourism and ecotourism.

D6. TRANSPORT, ENERGY AND EXPLOITATION OF NON-RENEWABLE RESOURCES

All these three sectors are generating significant negative impact over the environment, especially over biodiversity, but they represent basic sectors of the development of the socio-economic system. For this reason, the impact on biodiversity is assessed for each case, looking for the solutions to reduce it, according to the provisions of SEA, EIA and EA law in force.

In the field of transport, medium-term priorities set by the Government Programme 2009-2012 and other documents of public policies and institutional commitments (sectoral strategies, national development plans, development programs) including, in addition to the modernization and development of transport infrastructure (rail , road, sea, air) of European and national interest, with priority on the pan-European corridors of transport IV, VII and IX that cross Romania and the analysis at national/county/local level and taking the appropriate measures to mitigate the impact generated by the road transport on the natural environment.

The energy sector is an important source of pollution as a result of the extraction, processing and combustion of fossil fuels. From the burning of the fuel for energy production it results about 88% of the total national emissions of NOx, 90% of SO2 ones and 72% of the particulate matter quantity discharged into the atmosphere, in 2005.

It is known that all uses of fossil fuels produce CO2 emissions, which represents the main cause of global warming. To maintain the important role of fossil fuels in the energy mix, it must be found and implemented solutions that reduce the impact of their use. In this sense, the solution of capture and storage of CO_2 (CSC) will be applied properly to fossil fuels, too. Also, the present coal combustion technologies will be replaced by clean technology substantially mitigating the problems of local pollution and the phenomenon of acid rain, by significantly reducing the emissions of SO_2, NOx and dust generated by large combustion plants and thermal power plants.

In the Energy Strategy of Romania for 2007-2020 there have been established the specific measures to be adopted for environmental protection. Among them, the following are important for biodiversity conservation:

a) Making investments in environmental protection field;
b) Gradual internalisation of environmental costs in the price of energy;
c) The increased use of flexible mechanisms provided in the Kyoto Protocol and Directive 2003/87/EC of the European Parliament and of the Council of 13th October 2003 on establishing a system for greenhouse gas emission allowance trading within the Community and amending Directive 96/61/EC;
d) Acquisition by the Romanian State of all environmental damages produced by the coal sector until the date of granting the concession license.

The estimated value of investments required for environmental protection in the compliance period, 2008-2017, is about 1.750 million Euros.

In order to support electricity production from renewable energy resources it has been established a promotion mechanism based on green certificates, by which providers purchase certificates in obligatory quotas, in proportion to the volume of electricity sold to consumers. For Romania, the most convenient renewable resources (depending on the costs of use and resource volume) are: micro-hydroelectric plant, wind and biomass. A possible distribution on technologies, which together with large hydroelectric plants ensure the fulfilment of action lines established for 2010, 2015 and 2020, would be:
- small hydropower plants with 1.5 ... 1.7 TWh (about 600 MW plants);
- wind applications 1.3 ... 1.6 TWh (about 600 ... 700 MW);
- cogeneration groups using biomass, with 0.5 ... 1.0 TWh (about 150...300 MW).
The investment need for the period 2006-2015 for the use of renewable energy sources has been estimated to 1.800 million Euros.

Taking into account the quantities of fuel used annually and the obligations arising from the Government Decision no. 935/2011 on the promotion of bio-fuels and bio-liquids use, as amended and supplemented, it results a need of biodiesel and bio-ethanol of approx. 300.000 t for 2010. Romania's potential to provide feedstock for biodiesel or vegetable oil (sunflower, soybean, rape seed) is approx. 500-550 thousand tonnes/year, which enables a similar level of production of biodiesel. Thus, it should be secured the premises of the target of 10% of bio-fuels for 2020, calculated based on the energy content of all petrol and diesel types used in transport. In order to promote the use of bio-fuels and other renewable fuels, provisions were introduced in Law no. 571/2003 *regarding the Fiscal Code, as amended and supplemented* for the exemption from excise duty of energy products such as bio-fuels and other renewable fuels. These estimates have not taken into account the overexploitation and degradation of soil, as well as the impact of reduction of agricultural land for plants used in food.
For bio-fuels and bio-liquids, sustainability criteria were established by the legislative package “climate and energy”.

Operational objectives for ensuring the integrated management of transport, energy, non-renewable natural resources exploitation fields

1. Integrating with priority the biodiversity conservation in the establishment of policies and strategies in energy, transport and exploitation of non-renewable resources;
2. Analyzing at national/county/local level and establishing the measures imposed for the reduction of the impact generated by the road transport over the natural environment;
3. Applying the procedures of SEA, EIA and EA to the plans and projects of development of the transport, energy and non-renewable resources exploitation infrastructure.

E. EX-SITU CONSERVATION

The concept of *ex situ* conservation covers all genetic resources maintained outside their natural habitat and are represented by microorganisms, plants and animals. In the

context of objectives for 2020 and 2030 of the National Strategy of Sustainable Development, Romania gives a significant importance to *ex situ* sustainable collections, *ex situ* endangered resources recovery and *ex situ* conservation extension. Globally it is recognized that 20% of animal genetic resources are in danger of extinction with particularly serious impact on the accentuation of hunger and poverty. To this end the Global Strategy for the Conservation of Animals has established certain priorities according to which it is necessary that at national level be set conservation policies (priority no. 7), *ex situ* conservation programs (priority no. 9) and the development of technical standards for conservation (priority 11).

In the context of climate change effects and desertification manifestation in Romania, it is increasingly evident that it is extremely important that national genetic resources be protected by implementing feasible national programs of conservation. The improvement of species with economic importance must take into account the heritage of genetic resources held at this time so as the success of experiments be integrated to the pedoclimatic conditions specific to our country. In addition it is essential that the species threatened by climate change effects to benefit from real chances of survival through the implementation of national programs of *ex situ* conservation.

Microorganisms

Non-pathogenic or pathogenic strains of microorganisms are maintained by complying with the standards for use in isolation conditions in collections belonging to public and private institutions for various purposes: research and development, *on farm* and industry. Nationally, there is a real concern regarding the maintenance of microorganisms' collections either domestic or pertaining to sets of strains of microorganisms from ATCC international collections (American Type Culture Collection), BCCM (Belgian Co-ordinated Collections of Microorganisms), DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen) some of them being affiliated to a number of international organizations (e.g. World Federation of Culture Collections - WFCC).

An important role for *ex situ* conservation is presented by the collections of cell cultures and plant tissues as well as animal cell lines belonging to universities and research institutes which have not yet done an inventory.

Plant species

Ex situ conservation of wild or improved plant species, native or alien is achieved through collections of botanical gardens, gene banks, dendrological parks, origin stands and research institutions in the field.

Botanical gardens, dendrological parks and stands are the main forms of institutional organization housing, since the nineteenth century, important collections of wild and indigenous and non-indigenous improved plants. Moreover, there are superior organization forms thereof. The Association of Botanical Gardens in Romania (AGBR) was founded in 2000, it covers all major botanical gardens belonging to large universities in Romania, is affiliated to the European Association of Botanical Gardens

being represented by the Botanical Garden "Dimitrie Brândză" of Bucharest since 2007. Dendrological parks and botanical gardens housed in greenhouses affiliated to zoos or other types of private organization are not organized in associations of this type. Urban parks, by their recreational purpose, also feature in many cases favourable conditions to *ex situ* conservation. Bucharest Botanical Garden part of the network Planta Europea made contributions along with other botanical gardens in the country in developing the European Strategy for Plant Conservation 2008-2014, adopted by the Council of Europe in 2007.

Gene banks. *Ex situ* conservation for agriculture is achieved in Romania through Suceava Gene Bank holding genetic resources considered valuable for agriculture, through government programs and bilateral agreements concluded with various other countries for this purpose. By the Gene Bank of Suceava, Romania participates with the Romanian varieties and hybrids of crop plants, within the community projects for conservation of genetic resources. Before 1989, nationally, there was a number of institutions holding the material basis for the conservation of different indigenous breeds and varieties (at Mărăcineni for plum varieties, at Voineşti for apple varieties, at Constanţa for chicken breeds, at Fundulea for cereal varieties, at Braşov for potato varieties and the like) but, currently, almost 90% of them were eliminated, losing irremediably much of the native breeds and varieties.
In one unorganized form and only as a result of preserving the traditions in Romania, there is also the expressed will at the level of *on farm* conservation farmers, for products and services offered by them.

Varieties and improved hybrids
Regarding the government programs for the protection of species of agricultural interest we mention for crop plants the governmental program implemented by the network of the National Institute for Testing and Registration of Varieties (ISTIS) through which the terms of reference maintain in the national catalogue crop plants only for 10 years and for fruit trees just for 15 years. It is still impressive the continuous growth in recent years of the proportion of foreign origin varieties and hybrids grown in Romania. Also, there were hybrids and varieties of genetically modified plants. After 2000 were supported researches to improve the domestic varieties and hybrids by paying attention to cereal crops, potato (According to FAO-2009, Romania occupies the 20th place in the world for the production of potato), vines and fruit trees.

Animal species
Zoos, public aquariums and rehabilitation and/or care centres are designed to give important information on species conservation, public education, and/or scientific research. It is necessary that these permanent units to contribute to biodiversity conservation by adopting *ex-situ* conservation measures provided in art. 9 of *CBD*. The Convention states that "*ex-situ*" measures, preferably in the country of origin also have an important role. "*Ex-situ*" conservation means the conservation of components of biological diversity outside their natural habitats.

The objective of zoos is to protect the wildlife, to ensure the participation in research activities on the conservation of species, the promotion and development of a strategy on public education, the information sharing and awareness-raising activities of communities in connection with such permanent units.

The dispositions of conservation applicable to zoos according to *Directive 22/EC/99 on wild animals of* zoos are the following:

a) housing the animals in conditions to correspond to biological and conservation requirements of individual species, among others, by improvements specific to species brought to pens;
b) maintaining a high standard of animal husbandry with a preventive and curative program developed for veterinary and food care;
c) preventing the escape of animals in order to avoid possible ecological threats to indigenous species and preventing the intrusion of outside pests;
d) participating in research, conservation and education activities.

In 2013, nationally, was registered a number of 34 zoos and public aquariums, out of which:

- 23 zoos and public aquariums are authorized;
- 5 zoos and public aquariums are pending authorization;
- 6 zoos and public aquariums are not authorized.

Nationally are registered and authorized 2 rehabilitation centres of bears and 1 regional centre of treatment and care for wild animals:
- 1 bears reserve – "Liberty" of Zărneşti city, Braşov County,
- 1 bear reserve – orphaned bears rehabilitation centre, Suseni locality, Harghita County,
- 1 wild animals rehabilitation centre - Regional Centre of Treatment and Care for Wild Animals (CZITAS) of Petreşti locality, Vrancea County.
- 1 wild animals rehabilitation centre - •Daragus SRL Balvanyos Care and production centre, Covasna County.

At the moment there is not a National Programme for ex-situ conservation of wild species, varieties and breeds and there is not a database for ex situ conservation for all three major components of genetic diversity (microorganisms, animals, plants).

For wild species, Romania should urgently prioritize the endangered species list that needs alternative application of *ex situ* conservation measures and adopt accordingly the national plans of ex situ species conservation to ensure genetic diversity sustainability.

For agricultural biodiversity there is still no firm link between farmers and breeders at national level to avoid permanent loss of important genetic resources for agriculture, today maintained only due to the respect of traditions. Maintaining agricultural diversity should focus on developing a government program of *on farm ex situ* conservation – at the farm - in the context of maintaining the species, hybrids and breeds.

Operational objectives for the "*ex-situ*" conservation of biodiversity

1. Establishing a National program for ex-situ conservation of wild species, varieties and breeds;
2. Inventorying, collecting, preserving, evaluating, using and providing the breeders and scientific researches for the conservation and sustainable use of genetic resources, and even for further development of genetic diversity important economically speaking;
3. Resizing the objectives of founding and operating of zoos, by increasing the importance of their role in the wildlife conservation and education, towards the recreational role they have now.

F. CONTROL OF INVASIVE SPECIES

Alien species are species introduced/spread, accidentally or intentionally, in another geographical region, as a direct or indirect human activity, depriving naturally in a particular region, with a historical evolution known in an area of natural distribution, other than the area of interest, that may compete, dominate, can have a negative impact on native species, being able even to replace them.

To become invasive an alien species should naturalise, meaning that once entered on the national territory in natural ecosystems it manages to reproduce and by increasing the population flocks in competitive system can eliminate some vernacular species (native) and can produce different economic damages.
There is no danger of becoming invasive, the individuals who have acclimatized (have managed to survive under new conditions of biotope), but who are unable to reproduce naturally.
At the national level, there is not a clear evidence of the number of alien invasive species, the single centralization of data and information related to them being carried out in the European database the Inventory of Distribution of Invasive Species in Europe (Delivering Alien Invasive Species Inventories for Europe - DAISIE) by researchers voluntarily. According to data from the database the number of invasive species in different taxonomic groups is as follows: (18 species of fungi, 3 chromista, 2 species of bryophytes, 275 species of vascular plants, 7 species of spider, 2 arthropod species, 132 species of insects, 2 species of birds, 7 species of mammals and 1 species of reptiles). In 2006 it was drafted the list of the most invasive alien species threatening the biodiversity of Europe. It includes 165 species, most of which are vascular plants (39), fish (20), crustaceans (14) and molluscs (13). It is necessary to assess the number of species included in this list present in different ecosystems of Romania.

At the national level, were conducted a series of research programs among which we mention the *Monitoring System and Rapid Detection of Invasive Species* (CNCSIS 33379/2004 project) and the *Identification of invasive alien plants and potentially invasive alien plants in Romania and the impact assessment on natural and semi-natural habitats in order to initiate the measures of prevention and control* (CNCSIS 1107/33379/2004 Project). In 2007 in Romania there was a total of 435 plant species of

which 96 were deliberately introduced as ornamental species (Anastasiu & al., 2004). The number is underestimated because nationally, an exhaustive study was not done.

Although at European level, the Institute for European Environmental Policy (Institute for European Environmental Policy - IEEP) provides the technical support for the European Strategy regarding the invasive species, in the report drawn up in August 2009 Romania has not updated its data, and in the table linked to the information about the evolution of species with proven impact (on environment, social and economic) data is missing.

There is no national strategy for invasive species, and in terms of possession and trade of species with invasive traits, nationally speaking, there is no legal framework and policies to control the possession and sale.

In the report "Policy options for minimizing the negative impact of invasive species on the biodiversity of Europe and the EU" developed by IEEP in December 2008 it was reported that for the control and eradication there is a legislative framework, only that it is deficient (tab.4.5).

Table 4.5 The situation of SM regulations for the control of invasive species (2008)

Country	**Import/ export**	**Holding/trading**	**Introduction**	**Control/ eradication**	**IAS Strategy**
Romania	**yes**	**It does not exist**	**yes**	**yes**	**It does not exist.**

In Romania, with few exceptions the phenomenon of invasion of alien species was mostly ignored by the scientific community as a whole, as well as by the decision-making factors. The literature mentioned sporadically some new emerging species in the native biota, but these articles were not followed, only in few cases of extensive ecological studies showing how was accomplished the acclimatization and naturalization of these species.

Regarding alien species, the Romanian legislation is still at its beginning. There are, however the bases for the inclusion of this phenomenon in an appropriate legislative framework, bases created by the ratification of treaties or international agreements, but also by some internal regulations. In 2009 it was adopted the *Ministerial Order no. 979/2009 on the introduction of alien species, the interventions on invasive species and the reintroduction of native species provided in Annexes no. 4A and 4B* to the Government Emergency Ordinance no. 57/2007, *approved with amendments by Law no. 49/2011, as amended, on the national territory*.

Operational objectives for the control of invasive species

1. Preventing the intentional and unintentional introduction of alien species;

2. Rapid detection and identification of potential new invaders before entering the national territory;
3. Rapid response to the entrance of invasive alien species;
4. Management of naturalized species and the extension of their area in order to eradicate, limit and control them.

G. ACCESS TO GENETIC RESOURCES AND EQUITABLE SHARING OF BENEFITS ARISING FROM THEIR USE (ABS)

Currently, negotiations are conducted at international level within the ABS working group (access to genetic resources and equitable sharing of benefits) initiated in 2004 to adopt an international regime on this topic in full compliance with the provisions of Bonn Recommendations.

It is important to note that, in line with Bonn Recommendations, the access to genetic resources can be authorized only on the basis of an adequate knowledge of the legislation in force (fully informed agreement - prior informed consent PIC), complying with the mutual terms of the contract concluded (mutual agreed terms MAT) for sustainable use and equitable and balanced sharing of benefits arising from their use.

In the context of international negotiation it is still not very clear the link between the ABS and GFRA (Commission on Genetic Resources for Food and Agriculture) international regime, but it is expected that this should be clarified at Nagoya in Japan during COP10 of October 2010. The provisions of the following ABS international regimes may have a significant impact legally speaking, over the use and change of genetic resources under GFRA in the sense that it could radically change or could become more severe.

Currently, aspects concerning the following are discussed:

a) Instruments needed for ensuring the compliance,
b) Incorrect assigning of the origin of genetic resources and/or of traditional knowledge associated to it,
c) Acquisition of genetic resources,
d) Establishment of international standards for the access to genetic resources,
e) Development of the information change mechanism at international level through CHM of CBD,
f) Granting ABS certificates and bio-prospecting,
g) certification of use methods/practices of genetic resources,
h) Granting intellectual property rights for traditional knowledge associated to the access to genetic resources and
i) Development of mechanisms for the access in justice of genetic resources holders.

At the level of Parties to CBD it is recognised the fact that the ABS international regime should receive recognition for ensuring the compliance with the codes of conduct:

a) Code of Ethics of the International Society of Ethno-biology,

b) International Plant Exchange Network,
c) The principles of access to genetic resources and equitable sharing of benefits for botanical gardens,
d) Rules and provisions developed by various international organizations for plants, animals or microorganisms.

The institutional capacity for ABS should develop as a support for the local communities. A special attention is granted to the traditional knowledge associated to the access to genetic resources. They are in connection with the promotion of intellectual property rights, by complying with the national and international legislation in the field.

Operational objectives for ensuring the access to genetic resources and equitable sharing of benefits arising from their use

1. Developing the legal and institutional framework appropriate to the consistent implementation of the ABS international regime.

H. SUPPORTING AND PROMOTING TRADITIONAL KNOWLEDGE, INNOVATION AND PRACTICES

The debates related to the further development in the implementation of art. 8 j of the Convention (traditional knowledge) were initiated during COP3 of CBD. During COP6, the Bonn Guidelines on ABS were adopted and assessments on the intellectual property right within the context of implementing the ABS arrangements were made.

During 2009 the General Assembly of the World Intellectual Property Organization agreed that, within the International Committee on Intellectual Property and Genetic Resources, the Committee for Traditional Knowledge and Folklore should start the negotiations concerning the adoption of an international regime to be made available to the General Assembly until 2012. The Strategic Plan 2010-2017 on the implementation of the multiannual programme requires the elaboration and the adoption of a resolution on the ABS policy and regime for genetic resources used for food and agriculture.

Through the 1998 and 2002 Council Resolutions on indigenous peoples, the EU Member States established the general framework for their support. More recently, through the European consensus on the development of cooperation, it has been declared that the key principle for the protection of indigenous rights within the development of mutual cooperation is that of ensuring their full cooperation by providing full financial support for the compliance of previous agreement on the access to genetic resources.

Romania did not implement the provisions of art. 8 j per se. Although, certain legal aspects related to traditions and, in particular, related to traditional knowledge in terms of food are nowadays covered by certain normative acts elaborated by the Ministry of Agriculture and Rural Development and by National Sanitary Veterinary and Food Safety Authority. Unfortunately, these legal acts do not refer to the protection of the traditional knowledge that the local communities inherited from their ancestors, but it is

required to comply with the standards of Community legislation on food, without providing specific amendments on practising tradition and traditional knowledge.

We can emphasize the fact that the contemporary Romanian society preserved valuable knowledge and traditional practices that lie at the basis of the modern branches of biology, pharmacy, medicine, agriculture, animal husbandry, ethnology, physiology, ecology.
As a matter of fact, according to the provisions of the Convention on the Safeguarding of Intangible Cultural Heritage (Paris 2003), ratified by Romania through Law no. 410/2005, the intangible cultural heritage generates sustainability, since it is defined, among others, by knowledge and practices related to nature and universe and by techniques related to traditional crafts.

Operational objectives for ensuring the promotion of practices, innovation and traditional knowledge

1. Developing a coherent national policy on the protection of knowledge, practices and innovative traditional methods in connection with the access and use of genetic resources;
2. Developing the legal framework on the intellectual property rights required in order to promote knowledge, practices and innovative traditional methods.

I. DEVELOPMENT OF SCIENTIFIC RESEARCH AND PROMOTION OF TECHNOLOGY TRANSFER

Currently, the Romanian research is supported through National Plan for Research, Development and Innovation II for the period 2007-2013, according to Government Decision no. 475/2007 *on the approval of the National research plan – development and innovation II, for the period 2007-2013, subsequently amended and supplemented*, but it does not provide a special direction for the conservation of biodiversity. However, there are a number of projects developed within internal and external programmes, but they do not follow a specific strategic line.

In the National Strategy for Research, Development and Innovation II for the period 2007-2013, the conservation and reconstruction of biodiversity represents one of the priorities of public investments in research and development.

One of the priority areas of the National Strategy for Research, Development and Innovation II for the period 2007-2013 is the Environment as well. The objectives of this area relate to sustainability as a whole and specifically include the requirements related to the consolidation and conservation of biodiversity, as follows: “Creating clean product and process technologies to be implemented especially in transport and electricity production, as well as the economic and social mechanisms for their implementation; Creating new eco-efficient technologies for waste recovery, by using the life-cycle analysis of the products for the assessment of their impact upon the environment; Creating the scientific and technological support for the conservation, reconstruction and consolidation of biological and ecological biodiversity; Developing

the knowledge in terms of land use planning by highlighting the phenomena and the impact of different policies and by identifying the proper ways to do it."

The Romanian Strategy for Research, Development and Innovation is currently implemented thorough the National Strategy for Research, Development and Innovation for the period 2007-2013 (PN CDI II, 2007-2013), consisting of six specific programmes: Human Resources, Capacities, Ideas, Partnerships in the CDI priority areas, Innovation, Institutional performances. Within the framework of PN CDI II – The programme 4 partnerships, the objectives of the National Strategy for Sustainability are adopted in terms of CDI priority areas, including those related to the conservation of biodiversity, as follows:

a) Creating clean products, processes and technologies, as well as waste recovery
b) Scientific validity and development of technologies for the conservation, reconstruction and consolidation of biological and ecological diversity
c) Development of knowledge in the area of sustainable land use planning.

From the perspective of specific objectives, the Programme Partnerships supports the line of research "Ecological protection and reconstruction of critical areas and the conservation of protected areas" within the area Environment, with the following research themes:

1. Biological, geological and ecological diversity at local, regional and national level (characterize, identify the control and pressure factors, identify the functions of biological, geological and ecological diversity elements, social and economical assessment);
2. Systems for monitoring the dynamics of biological and ecological diversity from structural and functional point of view;
3. Eco-technologies for ecologic rehabilitation and reconstruction; remediation technologies for contaminated soils;
4. Scientific validity, projection and development of the network of protected areas Nature 2000 within the Romanian territory, as well as the adaptive management plans that provide the conservation of biological and ecological diversity;
5. Creating geo-referenced databases and metadata, mathematical patterns and the infrastructure of the decision cycle designed for the conservation, reconstruction and sustainable use of biological and ecological diversity elements;
6. Educating the population in terms of risk scenarios and courses of action;
7. Integrated security systems, both fixed and mobile, for the objectives of strategic importance.

At the same time, PN CDI II, by means of the Human Resources and Capacities programmes, supports the development of human resources and of the research infrastructure, including the one specific to the Environment area, at national, regional and pan-European level. Looking further, the period 2014-2020 is reserved for the execution of a major research infrastructure project resulting in the construction of the Interdisciplinary Research Centre of the Danube Delta and the Black Sea in the central area of the Danube Delta.

Romanian research is developed both in state and private structures, represented by research institutes and universities, but also by private companies and professional NGOs. The research institutes are under the coordination, under the control or under the authority of different ministries, the Romanian Academy or other structures.

Concerning the technology transfer and the cooperation between the public and private sector, in 2004, the European Commission launched the Environmental Technologies Action Plan – ETAP, as an instrument for stimulating the wide implementation of technological solutions for the protection of the environment. Within the ETAP context, "environmental technologies" refer to those technologies, products, services, utilities, management and organizational systems whose production or implementation/use requires the reduction of the negative impact upon the environment, compared to the relevant technological alternatives available on the market. The roadmap for the implementation of the Environmental Technologies Action Plan – ETAP Romania related to the period 2008 – 2009 has been approved by Government Decision no. 1568/2008. One of the three development guidelines of the action plan is represented by the technologies transfer from the research stage to availability on the market. A major component of the ETAP roadmap is also the cooperation research-industry in the environment area.

Concerning the current research programmes related to the conservation of biodiversity it is required to launch a CD Sectoral Plan in the environment area, coordinated by the central public authority for environment protection including objectives that are complementary to those of PN CDI II and that can provide support, through researches directed towards the settlement of stringent requirements in this area, including those related to:

a) Establishing a new National taxonomy programme;
b) Establishing the methods and techniques to mitigate the effects of climate change upon genetic resources;
c) Designing a database meant to inventory and integrate the results of the studies and researches conducted by using public funds in the area of biodiversity conservation;
d) Stimulating the cooperation research-industry in the environment area, according to the ETAP provisions.

Operational objectives for the development of scientific researches and for the promotion of technology transfer

1. Launching the CD Sectoral Plan in the environment area coordinated by the central public authority for the protection of the environment oriented towards solving the specific problems related to the protection and improvement of natural resources. The plan shall support all environmental researches related to the inventory of

biological diversity and to the mitigation of the effects that climate changes might have upon genetic resources;
2. Facilitating the exchange of information and data concerning the results in the area of biodiversity conservation, development of new technologies and their transfer towards the private area;
3. Developing the ETAP roadmap.

J. COMMUNICATION, EDUCATION AND PUBLIC AWARENESS

Article 13 of CBD encourages the Contracting parties to carry out information, education and public awareness activities. Until now, the two National Strategies for the Conservation of Biodiversity, the first one from 1996 and the second one from 2000 were not associated to a Communication strategy or even to an important chapter related to communication. Moreover, the National Capacity Self-Assessment For Global Environmental Management Report-PNUD *GEF*: ROM/03/G41/2004 Project, highlighted the fact that the interest is little and that the resources allocated are not enough for carrying out activities and programmes as regards communication for the conservation of biodiversity.

According to the most recent Eurobarometer (2009 – provisional data), Romania finds itself among the European countries that have mainly a "pro economical development" attitude although it affects the environment and only 2% perceive "environmental protection" as a priority.

Primarily, the CEPA activities carried out until now had a limited nature, since in most of the cases they were associated to external or internal financing projects concerning the conservation of biodiversity. These projects included communication components, public awareness and ecological education that had a greater impact at local level than at national level. Besides the CEPA activities of certain projects related to the conservation of biodiversity, there were also a number of initiatives, projects and programmes aiming at communication, public awareness for the conservation of biodiversity, especially in connection with the European ecological network Nature 2000. We mention some of the most important ones:

a) *Conservation of biodiversity in the Danube Delta*, financed by GEF/World Bank, which in 2000 contributed to the Public Awareness Strategy for the Danube Delta Biosphere Reserve
b) *Biodiversity conservation management*, financed by GEF/ World Bank, which in 2004 contributed to the public awareness national strategy on the conservation of biodiversity
c) Phare Twinning Projects 2004 for ARPM Sibiu and ARPM Timişoara aimed at nature protection and both agencies operated as Focal Points for the other regional and local agencies related to this area. The activities related to nature protection for Twining RO 2004/1B/ENI02 "Implementation and enforcement of the environmental Acquis focused on nature protection" (ARPM Sibiu) include:

a. The establishment of an information centre (Mechanism Clearing House) for Nature 2000 Network and for nature conservation;
b. The establishment of a Nature 2000 website as a tool for information and exchange of opinions;
c. The elaboration of information and educational guides for the identified Nature 2000 sites;

d) *By Phare 2006* were implemented 8 Phare Twinning regional projects whose main objective was to 'Strengthen the capacity of Regional Agencies for Environmental Protection (ARPM), of Local Agencies for Environmental Protection and of the National Environmental Guard (GNM) in implementing, monitoring and complying with the transposed environmental legislation'. One of the activities concerns the support for updating the data collection/stocks on environmental protection;
e) *UNEP GEF Project* "Developing the National Bio-security Framework for Romania" GFL 2716-02-4596. 1st April 2004 -31st October 2005 completed in February 2006 which analysed the national bio-security framework for Romania, resulting in the elaboration of Draft for the National Bio-security Framework, which analysed communication aspects and proposed certain strategic lines related to communication in the field.
f) *ANPM – Training programme*

In the summer of 2006, ANPM organized a series of seminars on different topics related to Nature 2000 by involving its 8 regional agencies. NATURA 2000 awareness trainings–ARPM, APM summer of 2006. Posters (6,231), booklets (3,460), leaflets (13,273), fliers (35,649) and other information material (2,240) were printed and distributed.

The information campaign was carried out under the following slogans: "Nature 2000 – A future with tradition" and "Nature, the legacy of our children". The main results are listed below, according to the internal assessment:

a) ARPM and APM organized public information campaigns at regional level including all Special Avifaunistic Protected Areas (SPAs) Sites of Community Importance (SCIs) validated by the online database
b) Participants were interested in the opportunities provided by NATURA 2000
c) Information was perceived as being positive and useful
d) Fears of the participants: restrictions related to agriculture, forests, fishing, development and lack of trust in applying countervailing measures
e) Emphasis on the need for communication between land owners and local authorities

The local awareness campaign was followed by a national awareness campaign under the auspices of the Ministry of Environment and Sustainability in 9 localities from within the country: Tulcea, Câmpulung Moldovenesc, Piatra Neamţ, Braşov, Târgu Mureș, Baia Mare, Cluj, Oradea, Reşiţa. These campaigns included a seminar, which hosted representatives of the local community and administrations, NGOs. At the same time, information material related to the Nature 2000 Network from the localities located near protected areas.

f) Phare 2004 "Implementing the NATURE 2000 Network in Romania"

The Project aiming at "Implementing the Nature 2000 Network in Romania" started in January 2007 and its main objective was represented by the establishment of a powerful institutional and organizational structure for the proper implementation of Nature 2000 Network in Romania. Public relations activities (PR) and awareness campaigns include:

a) Creating an awareness strategy.
b) Establishing the mechanisms for the participation of local and public information actors related to Nature 2000 network.

These relatively important activities were complemented by small scale activities carried out within numerous projects for the conservation of biodiversity by: environmental NGOs, the administrations of national and natural parks, the custodian of protected areas and the Territorial Agencies for Environmental Protection.

Regarding the mass media, no information campaigns concerning the conservation of biodiversity were carried out. Mass media materials related to the conservation of biodiversity are peripheral (very rare, only when celebrating special days and other similar situations), treated as an entertaining subject or accidentally linked to social, political or economical topics. In some cases the information revealed twists reality and affects the actions taken in order to preserve biodiversity (promoting the use of ATVs and high-speed crafts in natural protected areas, promoting the drainage of wet areas, embankment works and others of the kind).

There are a limited number of media institutions that show constant interest in environmental protection/conservation of biodiversity: TVR 2, Realitatea TV, Radio România Cultural, the daily papers Jurnalul Naţional and Adevărul. There are also several specialized publications that approach this subject on a regular basis, but whose audience is considerably smaller, such as: Green Report, National Geographic Romania, Geo Romania, Infomediu Europa. Interesting information can also be obtained by accessing online sources, such as: www.ngo.ro website or the Electronic discussions list „conservation of biodiversity".

Regarding the educational process there is no need for basic notions of biological diversity and importance of conservation to be introduced in the secondary education curriculum (primary, gymnasium and high school classes), considering that the decision to integrate biodiversity issues is subjective, non-compulsory and should belong to the teachers.

There is a constant concern for the correlation between professional training programmes at secondary and higher education level and the requirements of the labour market in terms of management for the conservation of natural capital, according to the Strategy of Lisbon, but this depends on the involvement and collaboration of all interested factors. Currently, the National Agency for Qualifications in Higher Education and Partnership with Economic and Social Environment (ACPART) is working on the National Qualifications Framework of Higher Education and its release

on the education and labour market together with all available tools, as well as on the National Registry of Higher Education Qualifications.

The main issues related to information and public awareness consist of:

a) Lack of human and financial resources for maintaining the communication portals and platforms (content editing and updating) created in different projects, after their completion
b) Lack of a focal point at the level of the central public authority for environmental protection meant to provide information management
c) No unitary approach of local information and public awareness campaigns
d) Use of unfeasible promises and of an overly ethnical language in the information and public awareness campaigns
e) Opposition of the local community to the prohibitions laid down by the authorities as a result of insufficient consultations and lack of perception in terms of the real advantages provided by the conservation of biodiversity.
f) Most journalists and editors approaching the field of biodiversity conservation lack the minimum level of knowledge required

Operational objectives for providing communication, education and public awareness related to the importance of biodiversity conservation

1. Developing the CEPA Strategy;
2. Developing the institutional capacity in the field of communication;
3. Aligning to the CBD provisions in the field of communication, education and awareness;
4. Aligning to the internal policies of professional training according to the Strategy of Lisbon.

Chapter 5

ACTION PLAN

The National Strategic Action Plan related to the conservation of Biodiversity in Romania includes the objectives the sub-objectives and the actions in relation to the institutions responsible, the type of priority and, in some cases, the estimated required budget, the financing sources and the performance indicators for that specific action. The overall matrix includes 10 objectives, 15 sub-objectives and a total of 170 actions.

The analysis of each action or an overall analysis by considering the mentioned budget of approximately 1.5 billion Euros, includes three types of actions:

a) 6 actions, in which case the required budget could not be assessed or estimated directly; this shall be carried out along with the application of measures by the institutions responsible;
b) 128 actions, without requiring a budget allocated directly, based on the application of those specific actions by the institutions or organizations mentioned above, as included in their current activity or by voluntary activity;
c) 45 actions whose budgets were estimated by considering different criteria, such as:
    1. estimations by considering the spatial unit (surfaces – hectares, length – kilometres)
    2. estimations by considering the time unit (year)
    3. estimations by considering the type of activity or targeted area (study, locality)
    4. budget required for the entire action and period; it should be noted that this category includes a wide variety of budgets, ranging from 150 million Euros/ action to 20 thousands Euros/ action (depending on the scale or the complexity degree of that specific measure).

The financial estimations advanced along with this strategy rely on:

a) the experience of similar previous actions from within the territory of the country or from abroad;
b) a preliminary calculation according to the specific technical and economical indicators.

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
A. DEVELOPING THE GENERAL LEGISLATIVE AND INSTITUTIONAL FRAMEWORK AND PROVIDING FINANCIAL RESOURCES							
A.1.	Establishing a separate budget allocation for the conservation of biodiversity at the level of the central public authority for environmental protection	MMSC	present – 2020	-	Own funds	Urgent	Achieved/ unachieved
A.2.	Improving the legal framework necessary to comply with all legal provisions concerning the conservation of biodiversity	MMSC	present - 2020	-	Own funds	High	Achieved/ Unachieved
A.3.	Strengthening the control on the implementation of the legal framework concerning the conservation of biodiversity	GNM, MAI	present-2020	-	Own funds	High	The number of contraventions and offences detected
A.4.	Integrating the considerations concerning the conservation of biodiversity in the regional and local policies, strategies and development plans	Authorities of the local public administration	present-2015	-	Own funds	Medium	No. of plans that integrated considerations related to the conservation of biodiversity
A.5.	Improving the implementation of Priority Axis 4 of POS Environment	MMSC	2014	-	Own funds	High	Achieved/ unachieved
A.6.	Revising the types of activities, applicants,	MMSC,	2014	-	Own funds	urgent	Achieved/

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	eligible expenses and financing mechanisms from the Financing guide of the Environmental Fund	AFM					unachieved
A.7.	Varying the income sources that feed the Environmental Fund according to the provisions of Government Ordinance no. 92/2003 on the Fiscal Procedure Code, republished, as subsequently amended and supplemented	MMSC, AFM	present – 2020	-	Own funds	High	% increase in income
A.8.	Assigning 20% of the Environmental Fund income for biodiversity conservation activities	MMSC, AFM	present – 2020	-	Own funds	High	% allocated
A.9.	Providing the co-financing of LIFE+ projects by the Environmental Fund	MMSC, AFM	present – 2020	-	Own funds	High	No. of co-financed projects
A.10.	Establishing the financial mechanisms required in order to increase the income from the state budget assigned for the conservation of biodiversity and for the management of the natural protected areas network	MMSC	2014	860	State budget	Medium	No. of establishing mechanisms
A.11.	Creating the institutional framework required for centralising the results of financed projects at the level of the	MMSC	2014	-	Own funds	low	Achieved/unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	environmental authorities						
A.12.	Large scale application of the results of successful projects financed by European funds designed for nature protection (e.g. Phare, LIFE, POS Environment and so on.)	MMSC	present-2020	-	Own funds	Medium	No. of conservation measures reapplied
A.13.	Conducting a study related to the contribution of natural protected areas to the national economy	MMSC	present-2015	2.150	Environmental Fund	Low	Achieved/unachieved
A.14.	Introducing a subdivision in the budget classification for the distinct highlighting of the partial co-financing of projects proposed by NGOs for biodiversity conservation activities	MMSC	present – 2020	4.300/ year	Environmental Fund	Low	No. of financed projects
A.15.	Elaborating and implementing the measures for the conservation of species and habitats of community interest in order to be co-financed and sent to the European Commission	MMSC	2014	4.300	State budget	High	Achieved/unachieved
A.16.	Elaborating a financing programme for the activities required in order to implement the EU Directives in the field of nature protection (from state budget resources, as well as from other resources)	MMSC	2014	860	State budget	High	Achieved/unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
A.17	Elaborating and adopting the regulations specific to the gene banks and collections of wild plants (seeds banks, botanic gardens, topgallant-mast, dendrological parks and so on.)	MMSC, MADR, MEN	2014	-	Own funds, state budget	Medium	Achieved/ unachieved
A.18	Creating and adopting the National programme for ex-situ conservation	MMSC, MADR, MEN	prezent-2016	-	Own funds, state budget	Low	Achieved/ unachieved
A.19.	Creating a counter expertise fund for the environmental authorities issuing regulatory acts based on the proper assessment procedure of the impact	MMSC	present - 2020	4.300/ year	Environmental fund	Medium	Nr. of conducted expertises
B. PROVIDING THE COHERENCE AND THE EFFICIENT MANAGEMENT OF THE NATIONAL NETWORK OF NATURAL PROTECTED AREAS							
B.1.	Improving the contractual terms of contracting out/taking into custody the natural protected areas	MMSC	2014	-	Own funds	Urgent	Achieved/unachieved
B.2.	Elaborating and adopting the framework content of the management plan for all types of natural protected areas	MMSC	2014	-	Own funds	high	Achieved/unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
B.3.	Providing, within the limit of the amount approved for this purpose on a yearly basis, the financing level from the state budget for the management of protected areas	MMSC	present-2020	60.200/ year	State budget	Urgent	Amount assigned on a yearly basis
B.4.	Elaborating and adopting the technical norms for the forestry buildings and for the forest management from within the natural protected areas	MMSC	2014	-	Own funds	Medium	Achieved/unachieved
B.5.	Establishing the regulations meant to allow the prioritisation of ecological systems renaturation	MMSC	2014	-	Own funds	Medium	Achieved/unachieved
B.6.	Establishing and adopting the regulations meant to unify the legislation on land use planning, urbanism and protection of cultural heritage with the legislation on natural protected areas	MMSC, MDRAP, MC	2014	-	Own funds	Urgent	Achieved/unachieved
B.7.	Approving the local urbanism regulations within the territory of natural protected areas	MMSC, MDRAP, MC	present - 2020	-	Own funds	Urgent	No. of approved regulations
B.8.	Assigning the administrators/custodians of all natural protected areas	MMSC	present - 2015	-	Own funds	urgent	No. of natural protected areas contacted out/taken into

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
							custody
B.9.	Establishing the legal procedures and the state purchasing of private lands included in the category of natural protected areas (approximately 50.000 hectares)	MMSC	present-2020	645.000	State budget, FM, LIFE+	Medium	hectares of private lands purchased by the state
B.10.	Assessing the natural habitats and wild species of community interest in order to finalize with the designation of Nature 2000 network in Romania	MMSC	2014	4.300	State budget	Urgent	CE approval of the Romanian Nature 2000 network
B.11.	Elaborating the distribution maps for natural habitats and wild species of conservative interest	MMSC	present - 2020	21.500	State budget, POS Environment, FM	Urgent	No. of natural habitats and wild species of community interest that required the elaboration of distribution maps
B.12.	Analyzing the coherence of the natural protected area and of ecological corridors as well	MMSC	2014-2020	21.500	POS Environment	Environment	Achieved/Unachieved
B.13.	Establishing and implementing the national monitoring system, according to the provisions of “Habitats” and “Birds”	MMSC	present – 2020	6.500-8.600 /year	State budget, POS	high	Adopted and implemented monitoring system

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	Directives				Environment, FM		
B.14.	Creating and implementing the monitoring systems of natural protected areas	MMSC, ANPM, Administrators/ custodians	present-2020	4.300/ year	State budget, FM, POS Environment	High	No. of protected areas that implement monitoring systems
B.15.	Establishing the conservation measures that lie at the basis of Nature 2000 compensation payments and calculating the amounts to be allocated in the form of Naturae2000 compensation payments based on the conservation measures established for each type of natural habitat and wild species of community interest	MMSC, MADR	2014	1.300	State budget	High	habitats for which conservation measures and compensation measures are established
B.16.	Paying compensation to land users complying with the restrictive conditions imposed by the site status that Nature 2000 has	MADR, APDRP, MMSC, administrators/custodians of Natura 2000 sites	2014 – 2020	430.000	State budget, FEADR	Mare	% paid to the land owners from the total amount

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
B.17.	Paying compensation to forest users complying with the restrictive conditions imposed by the site status that Nature 2000 has	MADR, APDRP, MMSC, administrators/custodians of Nature 2000 sites	2014 – 2020	70.000	State budget, FEADR	High	% paid to the owners from the total amount
B.18.	Paying compensation to forest owners for complying with the restrictive exploitation conditions in protection forests of national interest (T1, T2)	MMSC	2014-2020	21.500/ year	State budget, FEADR	High	% paid to the owners from the total amount
B.19.	Elaborating and adopting the management plans for natural protected areas	MMSC, administrators/custodians	present-2020	38.700	State budget, POS Environment, FM	Urgent	No. of management plans approved
B.20.	Updating the study on virgin forests, their analysis and their inclusion under the category of natural protected areas, preferably in strictly conservation areas	MMSC	2014	2.150	State budget	Medium	Surface of virgin forests included in the natural protected areas
B.21.	Revising the limits of the biosphere reserves Retezat and Pietrosul Rodnei	MMSC, RNP	2014	86	RNP, external	medium	Achieved/ Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
					funds		
B.22.	Designating new protected natural areas of international importance (Ramsar sites, biosphere reserves, sites of the natural and cultural world heritage)	MMSC, MC	present-2020	-	Own funds	Medium	No. of natural protected areas of international importance designated
B.23.	Harmonizing the management measures of cross-border protected areas with those of neighbouring countries	MMSC, administrators	present-2020	2.580	AP, POS Environment, cross-border programmes	Medium	No. of natural protected areas that require common management measures
B.24.	Training the personnel of administrators and custodians in order to apply an effective adaptive management of natural protected areas	MMSC, administrators/ custodians, NGOs	present-2020	2.150/ year	POS Environment, POS DRU	High	% trained personnel
B.25.	Developing the network of volunteers for monitoring biodiversity	Administrators/ custodians, NGO	present-2020	860/year	FM	Medium	No. of volunteers involved
B.26.	Assessing the effectiveness of natural protected areas management	MMSC, GNM,	present-2020	-	Own funds	medium	The results can be seen by using the

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
		ANPM					CHM
B.27.	Establishing the Commission of Speleology Heritage	MMSC NGO	2014	-	Own funds	Medium	Achieved/Unachieved
B.28.	Determining the cave classification rules in order to apply Government Emergency Ordinance no. 57/2007, approved with its amendments and supplements by Law no. 49/2011, as subsequently amended	MMSC CPS	2014	-	Own funds	Medium	Achieved/Unachieved
B.29.	Classifying all caves and determining their legal status, by reference to the law	MMSC, administrators/ custodians, CPS	Present - 2020	344/year	State budget, FM	Medium	No. of classified caves
B.30.	Providing the visiting infrastructure of certain caves for educational purposes in order to protect the ecosystems from the karstic area	administrators/ custodians, NGOs APLs	present-2020	19.350	POS Environment, Leader, POR	Medium	No. of improved/protected caves
B.31.	Providing a special protection regime for PFI	MMSC	present - 2015	215	FM	High	Achieved/Unachieved
C. PROVIDING A FAVOURABLE CONSERVATION STATUS FOR PROTECTED WILD SPECIES							

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
C.1.	Updating the appendixes of Government Emergency Ordinance no. 57/2007, approved with its amendments and supplements by Law no. 49/2011, as subsequently amended on species of national interest	MMSC	prezent-2020	-	Own funds	Medium	Achieved/Unachieved
C.2.	Elaborating and adopting the specific regulations meant to provide a favourable conservation status of strictly protected species of community interest and of national protected species located outside natural protected areas	MMSC, AR, MEN	2014 - 2018	860	State budget	High	No. of species that require regulations
C.3.	Elaborating and updating the national Red Lists and Books including wild species of flora and fauna	MMSC	present-2020	6.500	State budget	High	No. of elaborated/ updated lists
C.4.	Adopting the national Red Lists including wild species of flora and fauna by using a legal instrument	MMSC	present-2020	-	Own funds	High	No. of red lists adopted
C.5.	Determining the legal mechanisms by which the repatriation of confiscated species and their maintenance costs until the moment of repatriation shall be borne by the infringer/offender	MMSC, GNM	2014	-	Own funds	High	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
C.6.	Creating 5 special centres designed to take over the wild species that were confiscated, based on a feasibility study meant to establish their location and structure, complying at the same time with the number of jobs approved by the Ministry of the Environment and Climate Changes	MMSC, GNM, NGO	2014-2018	11.180	State budget, FM	high	No. of centres
C.7.	Designing and determining the mechanisms used by the environmental and customs authorities in order to identify the individuals of cropped/captured protected species, purchased and marketed or their parts, even if live or processed	MMSC, MEN, AR, ANV	2014	-	Own funds, state budget	Low	Achieved/Unachieved
C.8.	Implementing the mechanisms used by the environmental and customs authorities in order to identify the individuals of gathered/captured protected species, purchased and marketed or their parts, even if live or processed	MMSC, ANV	2014-2020	1.850/year	State budget	Low	No. of situations solved
C.9.	Analyzing the conservation status of strictly protected species and selecting the species that require the elaboration of the National Action Plans for Conservation	MMSC, AR	2014 - 2016	1.075	State budget	High	List of species that require the elaboration of Action Plans

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	(PNAC)						
C.10.	Elaborating PNACs for the priority species	MMSC, AR, NGOs	2016 – 2018	21.500	FM, external funds	High	No. of action plans
C.11.	Implementing PNACs for a number of 15 priority species	MMSC, Administrators/ custodians, NGOs, scientific institutions, universities and others of the kind.	2018 – 2020	non-estimated	State budget, FM	High	No. of implemented plans
C.12.	Elaborating the PNACs for medium priority species	MMSC, AR, NGOs	2018-2020	21.500	FM, external funds	Medium	No. of NSCAPs
C.13.	Ratifying AEWA amendments	MMSC, MAE	2014	-	Own funds	High	Achieved/Unachieved
C.14.	Ratifying EUROBATS amendments	MMSC, MAE	2014	-	Own funds	High	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
D. SUSTAINABLE USE OF BIODIVERSITY COMPONENTS							
D.1.	Assessing and determining the economical value of biodiversity components and of the services provided by ecosystems	MMSC	Present - 2018	4.300/ year	State budget, FM, external funds	Medium	Biodiversity components whose values were estimated
D.2.	Elaborating and adopting the methodologies meant to consider the biodiversity value in the cost/benefit analyses carried out through feasibility studies and business plans	MMSC	2014-2016	215	State budget, FM, external funds	High	No. of methodologies elaborated and approved
D.3.	Elaborating and adopting the eco-labelling schemes based on the analysis covering the life cycle of products whose production, distribution, use or storage might endanger biodiversity	MMSC	2014 - 2016	2.150/ year	State budget, FM, external funds	Medium	No. of eco-labelling schemes
D.4.	Determining the stimulants that contribute to the sustainable use of biodiversity components and excluding the ones that have a negative impact	MMSC	2014	215	State budget, FM, external funds	Medium	No. of useful stimulants, no. of excluded stimulants
D.5.	Establishing and adopting the National	MMSC	present -	3.440	State	High	Achieved/Unachie

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	Plan for restoration of wet and degraded areas		2016		budget, FM, external funds		ved
D1. LAND USE PLANNING							
D1.1.	Introducing provisions concerning the landscape and the natural heritage in the legislation in force	MMSC	2014	-	Own funds	High	Achieved/Unachieved
D1.2.	Updating appendix III of Law no. 5/2000 on land use planning, revising art. 7 by setting the time-limit and the sanctions	MMSC, MDRAP, MC	Present - 2016	23.000	Own funds	High	Achieved/Unachieved
D1.3.	Clarifying the responsibilities and the competences required in order to apply the sanctions in case the discipline in construction is not fulfilled	MMSC, MDRAP	2014	-	Own funds	High	Achieved/Unachieved
D1.4.	Elaborating the Landscapes identification and assessment guidelines	OAR	2014	1.300	FM, external funds, OAR	High	Achieved/unachieved
D1.5.	Inventorying and assessing cultural, natural and mixed landscapes from the territory of	MMSC, ME, MC	Present - 2015	6.450	OAR, POR 5.1	High	% of the country surface

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	Romania				Axis		inventoried and assessed
D1.6.	Classifying the natural, cultural and mixed landscapes of national importance	MMSC, MC, OAR	2014-2015	-	Own funds	medium	% of the total of inventoried landscapes
D1.7.	Elaborating the regulations required for the management of cultural, natural and mixed landscape	MMSC, MC, OAR	2015-2020	2.150	OAR, Own funds	Medium	No. of elaborated regulations
D1.8.	Developing the local policies concerning the landscape and its integration in other local sectoral policies	APMs, authorities of the local public administration, OAR branches	2015-2020	-	Own funds	Medium	No. of authorities belonging to the public administration that integrated the landscape policies in the territorial development
D1.9.	Establishing an assessment procedure of the impact that the projects financed by Structural and Cohesion Funds have upon the natural and cultural landscape and approve only the financing of projects that do not endanger the landscape	AMs POSs	2014	-	Own funds	High	No. of POSs that integrated the obligation regarding landscape conservation
D1.10	Action plans for the reconstruction and/or	MMSC,	2015-2020	-	Own funds	Medium	% of the surface

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
.	restoration of degraded and/or damaged landscapes	MDRAP, ME					of degraded/destroyed landscapes that required the elaboration of action plans
D1.11.	Studies in order to identify and assess species and their urban habitats	Authorities of the local public administration, NGOs, OAR, architecture and urbanism universities	prezent-2015	An average of 64,500/ locality	Local budgets, OAR stamp duty, financing sources for NGOs	Medium	No. of localities conducting such studies
D1.12.	Integrating the studies in PUGs	Authorities of the local public administration, OAR	2015-2020	-	Own funds	Low	No. of PUGs that integrated the studies
D1.13.	Tax mechanisms that encourage the use of the existing fund to the detriment of new	Authorities of the local	2014	-	Own funds	Medium	No. of established mechanisms

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	buildings	public administration					
D1.14.	Tax mechanisms (subsidies, tax exemptions) for greening the existent terrace roofs	Authorities of the local public administration	2014	-	Own funds	High	No. of established mechanisms
D1.15.	Revising Law no. 24/2007 *on the regulation and administration of green spaces from the built-up area of the localities, republished* for including the compulsoriness of creating new terrace roofs that need to be covered with grass and of redefining the notion of green space, in relation to the water cycle	MMSC	2014	-	Own funds	High	Achieved/Unachieved
D1.16.	Elaborating the standards for green spaces (plant species recommended for different types of uses – linings, green terraces, squares and others of the kind)	MMSC, architecture and horticulture universities and schools	2014	86	OAR	Medium	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
		ASAS					
D1.17.	Adopting the Strategy for Territorial Development in Romania and providing the coherence of land use planning policies, urbanism, local development and conservation of biodiversity	MDRAP, MMSC, MC, OAR	2014	-	Own funds	Urgent	Achieved/Unachieved
D1.18	Adopting the Architecture Policy of Romania and providing the coherence of land use planning policies, urbanism, local development and conservation of biodiversity	MDRAP, MMSC, MC, OAR	2014	-	Own funds	Urgent	Achieved/Unachieved
D2. FORESTS MANAGEMENT							
D2.1.	Including the aspects that prove to be relevant for the conservation of biodiversity in the technical regulations for the elaboration of forestry work plans	MMSC	2014	-	Own funds	Medium	Approved regulations
D2.2.	Strengthening the institutional capacity for carrying out control over the forests, complying with the number of jobs approved by the Ministry of Environment and Climate Changes	MMSC	Present - 2020	-	Own funds	High	No. of jobs created within ITRSV No. of equipments No. of trained

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
							personnel
D2.3.	Improving the legal and regulation framework and the correlation with the regulations concerning the conservation of biodiversity	MMSC	present - 2020	-	Own funds	Medium	Achieved/Unachieved
D2.4.	Improving the legal framework concerning the management of private forests and granting financial compensation	MMSC	2014	-	Own funds	High	Achieved/Unachieved
D2.5.	Economical assessment of the protection functions of forests	MMSC	2014	430	State budget	high	Achieved/Unachieved
D2.6.	Increasing the share of natural regeneration by applying the proper intensive treatments	MMSC	present-2020	-	Own funds	High	% natural regenerations
D2.7.	Identifying the exploited and non-regenerated forest lands	MMSC	present-2020	-	Own funds	High	% identified lands
D2.8.	Extending the surface of forests and other categories of forest vegetation, including degraded lands, located outside the forests	MMSC	prezent-2020	2.150.000	State budget, Environmental fund, FEADR	High	No. of extended hectares
D3. EXPLOITATION OF WILD SPECIES VALUED FROM ECONOMICAL POINT OF VIEW							
D3.1.	Assessing the positive impact versus the	MMSC,	2019-2020	430	State	High	No. of assessed

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	negative impact of agricultural practices and policies favourable for the conservation of biodiversity	MADR			budget		agricultural practices
D3.2.	Updating and adopting the existing regulations and the guidelines for including the best agricultural practices of sustainable use of agricultural biodiversity	MMSC, MADR, ASAS	2014	-	Own funds, state budget	High	No. of updated regulations and guidelines
D3.3.	Assessing the impact of stimulants/subsidies/current state aids upon the conservation of biodiversity in order to identify and exclude the one that does not fit	MMSC, MADR	2014	-	Own funds, state budget	high	Achieved/Unachieved
D3.4.	Developing new tax stimulants and mechanisms adequate for the conservation of agricultural biodiversity and forest biodiversity	MMSC, MADR	2014	-	Own funds, state budget	High	No. of tax stimulants and mechanisms developed
D3.5.	Assessing the capacity of different agricultural production systems to preserve agricultural biodiversity and to ensure the sustainable use of resources, under conditions of economic efficiency	MMSC, MADR, ASAS	2014	43/ study	State budget, FM, external funds	Medium	No. of assessed production systems
D3.6.	Investigating the use of agricultural diversity for the sustainable development	MMSC, MADR,	2014	1.300	State budget,	Low	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	of agricultural systems that contribute to the improvement of life standards, while it provides the improvement of the biodiversity status by preserving the most useful and vulnerable species				FM, external funds		
D3.7.	Assessing and characterizing the local breeds, hybrids and races in order to identify those that have a high adaptation potential in terms of climate changes	MADR, ASAS	2014	1.300	State budget, FM, external funds	Medium	No. of local breeds, hybrids and races with a high potential for adaptation to climate changes
D3.8.	Extending the agricultural, forest and pastoral systems in the areas where there is a risk of aridity	MMSC, MADR, MDRAP	present-2020	43 /hectares	State budget, Environmental fund, FEADR, LIFE+	High	The surface of elaborated agricultural, forest and pastoral systems
D3.9.	Elaborating national studies concerning the current degree of fragmentation of the crop in rotation, the causes and consequences of this fragmentation upon the non-use of the agricultural land	MADR, ANCPI	present - 2015	-	Own funds, state budget	High	Achieved/Unachieved
D3.10	Elaborating national studies concerning the	MADR,	present -	-	Own	High	Achieved/Unachie

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
.	land conversion, the types of lands that were replaced, the types of lands that replace the traditional ones	ANCPI	2015		funds, state budget		ved
D3.11.	Elaborating national studies concerning the impact of crops designed for biomass production in order to obtain bio-fuels, as well as electricity and heat upon biodiversity	MMSC	2014	-	Own funds	High	Achieved/Unachieved
D3.12.	Carrying out an inventory of autochthonous races and adopting this inventory by means of a regulatory act	MADR	2014	-	Own funds, state budget	high	Achieved/Unachieved
D3.13.	Creating mechanism meant to promote the homologation and use of autochthonous races and breeds	MADR	2014-2015		Own funds, state budget	High	Achieved/Unachieved
D3.14.	Elaborating a national strategy related to the testing, cropping and use of genetically modified organisms	MMSC, MADR	2016	860	Own funds, state budget	High	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
D4. AGRICULTURE							
D4.1.	Establishing and approving the technical regulations and standardised methodologies related to the assessment of wild species of economic interest located in their natural environment	MMSC	2014 - 2015	130	State budget	High	No. of technical regulations and standardised methodologies approved
D4.2.	Establishing and approving the techniques/methods used in order to crop/capture wild species of economic interest	MMSC	present - 2016	130	State budget	High	No. of species that required the approval of cropping/capturing techniques/method
D4.3.	Evaluating the conservation status of wild species of economic interest on a yearly basis	MMSC	Present - 2020	2.150/year	State budget	Medium	No. of species evaluated on a yearly basis
D4.4.	Updating the Fishing Management Programme	MADR, MMSC	2014	-	Own funds	Medium	Achieved/Unachieved
D4.5.	Strengthening the control of cropping/capturing activities and the marketing of economic value species	MMSC	Present - 2020	-	Own funds	High	No. of controls
D5. TOURISM							

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
D5.1.	Elaborating and adopting the Best Practices Guideline for the development of sustainable tourism	MMSC, ME	2014	860	Stare budget, FM, external funds	medium	Achieved/Unachieved
D5.2.	Including a special chapter on the sustainable conservation and exploitation of landscapes in the Master Tourism Master Plan 2007-2026 and the policies on tourism development	ME	2014	-	Own funds	Low	Achieved/Unachieved
D5.3.	Developing the financial mechanism for the contribution of the touristic sector to the conservation of biodiversity and landscapes	MMSC, ME	present-2015	-	Own funds	Mare	No. of elaborated financial mechanisms
D5.4.	Implementing the eco-labelling systems of accommodation services for tourists	MMSC, ME	present – 2015	-	Own funds	medium	No. of accommodation establishments and travel agents adopting the eco-labelling systems
D5.5.	Establishing and adopting tax facilities in case of economic agents involved in tourism that implement eco-labelling	MMSC, ME	present – 2015	-	Own funds	Medium	No. of adopted mechanisms

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	systems						
D6. TRANSPORT, ENERGY AND EXPLOITATION OF NON-RENEWABLE RESOURCES							
D6.1.	Developing the tax mechanisms for the contribution of energy and exploitation sector of non-renewable resources (others than fossil fuels) to the conservation of biodiversity and landscapes	MMSC, ME	2014	-	Own funds	High	No. of established tax mechanisms
D6.2.	Including the considerations related to the conservation of biodiversity in the technical regulations that provide the method of calculation for easement debit	MMSC	2014	-	Own funds	High	Achieved/Unachieved
D6.3.	Carrying out a national study in order to identify the areas where it is not allowed to develop wind parks, as a result of its major impact upon biodiversity	MMSC	present – 2015	4.300	State budget	urgent	Achieved/Unachieved
D6.4.	Carrying out a national study in order to identify the areas where it is not allowed to build hydropower plants, as a result of its major impact upon biodiversity	MMSC	present – 2015	4.300	State budget	High	Achieved/Unachieved
D6.5.	Evaluating the way in which the current road transport network fragments the	MMSC, MT	Present - 2016	4.300	Environmental fund	High	% of the length that the assessed

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	natural and wild species of conservative interest habitats and advances solution in order to reduce/exclude fragmentation (ecoducts, fauna bridges and others of the kind.)						road transport infrastructure has
D6.6.	Elaborating and adopting a regulation related to the use of off-road vehicles (cars, motorcycles, ATVs), aquatic (scooters, fast barges), on snow (snow mobile)	MMSC	2014	-	Own funds	Urgent	Achieved/Unachieved
D6.7.	Adopting specific regulations meant to consider the conservation of biodiversity under art. 55 and 56 of the Airline Code	MMSC, MT	2014	-	Own funds	High	Achieved/Unachieved
E. EX-SITU CONSERVATION							
E.1.	Evaluating the operating condition of gene banks, centres for holding wild animals captive and collections of wild plants (seeds banks, botanic gardens, topgallant-mast, dendrological parks and so on.)	MMSC, MADR, MEN	present-2015	-	Own funds, state budget	Low	Achieved/Unachieved
E.2.	Inventorying and assessing the conservation status of autochthonous local species, breeds, hybrids and races used in	MADR	Present - 2015	2.150	State budget	Medium	No. of inventoried and assessed species, hybrids

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	agriculture and industry						and races
E.3.	Establishing and adopting new standards in order to open and operate zoos, considering the fact that they play an important part in the conservation of wild species, as well as in education	MMSC, NGOs	2014	-	Own funds	High	Achieved/Unachieved
F. CONTROL OF INVASIVE SPECIES							
F.1.	Elaborating a national list of invasive species	MMSC, AR	2014	1.300	State budget, FM	High	Achieved/Unachieved
F.2.	Elaborating and filling in a registry and a database including allochthonous species	MMSC	2014	430 +	Own funds	Medium	No. of included species
F.3.	Elaborating and adopting the technical regulations related to the introduction and control of allochthonous species originating from bordering and/or exotic spreading areas	MMSC, MADR, GNM, AV	prezent-2015	-	Own funds	High	Achieved/Unachieved
F.4.	Providing that Romania ratifies the Convention on Ballast Water Management (BWM) and developing the subsequent implementation measures	MMSC, MT, MAE	2014	-	Own funds	High	Achieved/Unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
F.5.	Developing the administration mechanisms for the monitoring of allochthonous species introduced for economic purposes	MMSC, ME	Present - 2015	-	Own funds	Medium	Achieved/Unachieved
F.6.	Establishing a reporting mechanism and/or a supervision line for taxa or species used as pets with the highest invasive potential in order to indicate their accidental or deliberate access into the wilderness	MMSC	2016	-	Own funds	Medium	No. of species that required mechanisms
F.7.	Mandatory monitoring of ballast waters and of the fouling in case of ships that deballast or carry out hulling operations in harbours and of the sediments that can be found on the bottom of ballast tanks	MMSC	2014	-	Own funds	Medium	Achieved/Unachieved
F.8.	Developing databases accessible to the public including information related to the risk associated with the species placed on purpose for several reasons	MMSC, AR	2014 - 2016	.	Own funds, state budget	Medium	Achieved/Unachieved
F.9.	Strict monitoring of allochthonous species placed for aquaculture that can spread and naturalise within aquatic ecosystems	MMSC, MADR	Present - 2020	non-estimated	Administrators of aquatic resources	Medium	No. of monitored species and locations
F.10.	Elaborating management plans for access routes presenting the highest risk	MMSC	2014	2.150	Own funds,	High	No. of elaborated plans

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
					external funds		
F.11.	Implementing the plans for the management of access routes presenting the highest risk	MMSC	2015-2020	non-estimated	Own funds	High	No. of applied plans
F.12.	Assessing the risk that invasive species have upon autochthonous ones in order to identify and prioritize their management options	MMSC	2015-2017	260	Own funds, external funds	High	Achieved/Unachieved
F.13.	Elaborating the indicators for monitoring the impact upon invasive species	MMSC	2015-2017	86	Own funds, external funds	Medium	No. of established indicators
F.14.	Elaborating the methods/methodologies related to the limitation, control and eradication of invasive species	MMSC	2014-2016	430	Own funds, external funds	Medium	No. of elaborated methodologies
G. ACCESS TO GENETIC RESOURCES AND THE EQUITABLE SHARING OF THE BENEFITS RESULTING FROM THEIR USE (ABS)							
G.1.	Preparing the legal and institutional framework in order to apply the Protocol	MMSC, MADR,	2014	-	Own funds,	High	Achieved/unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	related to the ABS regime	MEN			state budget		
G.2.	Adopting and implementing Bonn Guidelines	MMSC, MADR, MEN	2014	-	Own funds, state budget	Low	Achieved/unachieved
G.3.	Developing the legal framework and the tax mechanisms required for the recognition of intellectual property rights concerning the access to genetic resources and the traditions of using genetic resources	MMSC, MADR, ME/OSIM	2014-2016	-	Own funds	High	Achieved/unachieved
G.4.	Establishing the indicators that provide the monitoring of ABS implementation	MMSC	2016	-	Own funds	medium	Achieved/unachieved
H. SUPPORTING AND PROMOTING TRADITIONAL PRACTICES, INNOVATION AND KNOWLEDGE							
H.1.	Adopting Koln guidelines	MMSC, MADR, MEN	2014	-	Own funds, state budget	Medium	Achieved/unachieved
H.2.	Inventorying the traditional practices related to the use of natural resources and	MMSC, MADR,	2014 - 2016	non-estimated	Own funds,	Medium	Achieved/unachieved

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	their assessment upon the conservation of biodiversity	GALs, Agricultural chambers, MC			state budget		
H.3	Elaborating regulations related to the right of intellectual property upon traditional knowledge and methods of using genetic resources	MMSC, MADR, OSIM	2016 – 2018	-	Own funds	Medium	Achieved/Unachieved
H.4.	Establishing several promotion mechanisms of using traditional practices that prove to be favourable for the sustainable use of natural resources	MMSC, MADR	2016-2018	-	Own funds	Medium	No. of established mechanisms
I. DEVELOPMENT OF SCIENTIFIC RESERACH AND PROMOTION OF TECHNOLOGY TRANSFER							
I.1.	Creating the National Taxonomy Programme	MEN	2014	-	State budget	High	Achieved/unachieved
I.2.	Elaborating a series of mechanisms meant to encourage researchers in becoming specialists in the taxonomy field	MEN, university, research institutes, museums,	2014	-	State budget, own funds	Urgent	No. of institutions that elaborated their own mechanisms
I.3.	Elaborating guides, field guidelines and	universities	Present -	1.300/	State	High	No. el elaborated

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	atlases for the species and natural habitats within the territory of Romania	, research institutes, museums, professional NGOs	2020	year	budget, funds designed for research		guides/ guidelines/atlases
I.4.	Integrating special programmes within the existent line of financing related to the conservation of biodiversity meant to support applied research establishing the methods and techniques to mitigate the effects of climate change upon genetic resources	MMSC, MEN	2014-2020	-	State budget, own funds	High	No. of established programmes
I.5.	Integrating the ecosystem approach in the National Strategy for Research, Development and Innovation	MMSC, MEN	2014	-	State budget, own funds	high	Achieved/unachieved
I.6.	Elaborating a database for integrating the results of the studies and researches conducted by using public funds in the field of biodiversity conservation	MEN, MMSC	2014	-	State budget	Low	Achieved/unachieved
I.7.	Elaborating a legislative instrument meant to provide tax deduction for economic agents applying the technological transfer for conservation and sustainable use of	MMSC, MEN, MADR, MT, ME	2014-2016	-	Own funds, state budget	Medium	No. of required technologies

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	biological diversity						
I.8.	Establishing the mechanisms meant to facilitate the transfer of new technologies for the conservation and sustainable use of biological diversity	MMSC, MEN, MADR, ASAS, MT, ME	2014-2016	-	Own funds, state budget	Medium	No. of established partnerships
I.9.	Establishing the mechanisms meant to facilitate the patenting of new technologies for the conservation and sustainable use of biological diversity	MMSC, MEN, MADR, ASAS, MT, ME	2014-2016	-	Own funds, state budget	Medium	No. of patents
I.10.	Establishing the mechanisms meant to facilitate the access to eco-innovation community funds related to the support of ETAP roadmap	MMSC, ME, MDRAP, MEN, ANCS, ANRMAP, AFM, INCDPM, INCD ECOIND, CCIR	2014	-	Own funds, state budget	medium	Value of amounts accessed
I.11.	Implementing the molecular techniques in	Universities	Present -	not	State	High	Nucleotidic

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	routine tests in order to characterise species that require conservation, invasive species and so on	, research institutes	2020	assessed	budget, funds designed for research		sequences (bar codes), publications
J. COMMUNICATION, EDUCATION AND PUBLIC AWARENESS							
J.1.	Establishing an internal communication strategy at the level of environmental authorities	MMSC	2014	215	State budget	High	Achieved/unachieved
J.2.	Designating focal points for the information management related to the conservation of biodiversity at the level of all responsible factors and establishing a functional communication network between the responsible factors and the conservation of biodiversity at the level of central and local public authorities	MMSC, MADR, MEN, MDRAP, MAI, MAE, MAN, MSI, ME, MFP, MT, MMFPS and subordinate	present - 2020	-	Own funds, state budget	high	No. of authorities that designate the focal points No. of consultations No. of decisions taken based on the exchange of information

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
		d units					
J.3.	Assessing the involvement of local communities in decision-making related to the management of natural protected areas	MMSC, administrators/custodians	present-2020	-	Own funds	Medium	No. of participants to public debates concerning the plans/projects from natural protected areas
J.4.	Establishing a system in order to stimulate the voluntary involvement meant to support biodiversity conservation activities	MMSC, administrators/ custodians, NGOs, mass-media	2014	-	Own funds	Medium	No. of initiatives No. of volunteers
J.5.	Developing the secondary education curriculum (primary, gymnasium and high school classes) in order to introduce basic notions related to biological diversity and the importance of its conservation	MEN	2014	-	State budget	low	No. of programmes including disciplines related to the conservation of biodiversity
J.6.	Developing and implementing professional training programmes at secondary education, higher education, postgraduate and training level related to the management for the conservation of	MEN, ARACIS	present – 2020	-	State budget, own funds	Medium	No. of training programmes developed

	Actions	Responsible institutions	Period	Budget (thousands lei)	Financing sources	Priority	Performance indicators
	natural capital						
J.7.	CHM Continuous maintain and updating of CBD CHM	MMSC	present – 2020	-	Own funds	High	Achieved/unachieved

Chapter 6

IMPLEMENTING THE NATIONAL STRATEGY AND THE ACTION PLAN FOR THE CONSERVATION OF BIODIVERSITY – RESPONSIBLE AUTHORITIES AND REQUIRED FINANCIAL RESOURCES, INDICATORS –

Responsible authorities

In order to achieve the SNPACB action directions it is required for the central public authority for environmental protection, as coordinator of the biodiversity conservation policy, to work with all other central and local interested factors, with the administrators/custodians of the natural protected areas, with the managers of natural resources, but also with the representatives of local communities, scientific communities, business environment and civil society.

The implementation of the Action Plan requires permanent monitoring for the assessment of the extent to which the performance indicators have been met. This attribution shall be taken over by the *Inter-ministerial Committee for the Coordination of the Integration of Environmental Protection into Sectoral Policies and Strategies at National Level*, created under Government Decision no. 750/2005 on the establishment of Permanent inter-ministerial councils, as subsequently amended and supplemented subordinated to the *Inter-ministerial council for agriculture, rural development and environment.*

The members of the inter-ministerial committee shall be represented at state secretary level authorised by the management of the institution where they work, while the coordination shall be provided by the minister of the environment and climate changes. Within this committee inter-ministerial technical working groups shall be determined. Their members shall include specialists assigned by each authority, according to their field of competence.

Financial resources

The estimative costs for the implementation of the Action Plan for the period 2014-2020 were assessed at the amount of 6.5 billion lei and shall be provided by the state budget and from other sources, such as the Environmental Fund, structural and cohesion funds, the LIFE+ Programme of the European Commission and other external funds. The costs shall be revised on a yearly basis by each responsible institution, according to the performance indicators and to the allocated budget.

Estimating the financial allocations in order to reach the 10 objectives of the Action Plan:

Objective	**Estimated value**	**Financing sources**	
		State budget	**External sources**

Objective	Estimated value	Financing sources	
		State budget	External sources
DEVELOPING THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK AND PROVIDING FINANCIAL RESOURCES	22,900,000	1,900,000	21,000,000
PROVIDING THE COHERENCE AND THE EFFICIENT MANAGEMENT OF THE NATIONAL NETWORK OF NATURAL PROTECTED AREAS	405,090,000	132,500,000	272,590,000
PROVIDING A FAVOURABLE CONSERVATION STATUS FOR WILD PROTECTED SPECIES	15,250,000*	2,650,000	12,600,000
SUSTAINABLE USE OF BIODIVERSITY COMPONENTS	505,720,000*	700,000	505,020,000
EX-SITU CONSERVATION	500,000	500,000	0
CONTROL OF INVASIVE SPECIES	1,230,000	550,000	680,000
ACCESS TO GENETIC RESOURCES AND THE EQUITABLE SHARING OF THE BENEFITS RESULTING FROM THEIR USE (ABS)	0	0	0
SUPPORTING AND PROMOTING TRADITIONAL PRACTICES, INNOVATION AND KNOWLEDGE	0	0	0
DEVELOPING SCIENTIFIC	27,000,000	27,000,000	0

Objective	Estimated value	Financing sources	
		State budget	External sources
RESEARCH AND PROMOTING THE TECHNOLOGY TRANSFER			
COMMUNICATION, EDUCATION AND PUBLIC AWARENESS	50,000*	50,000	0

***partial estimation, since some of the costs cannot be estimated yet**

Racial, sex and religious non-discrimination

The need for racial sex and religious discrimination is based on the long-standing experience of the experts involved in the promotion of biodiversity conservation policies showing that successful policies cannot neglect the social and economical organizations of the society. Actually, the recommendations support the achievement of CBD objectives by providing gender equality as well, being the first one of this kind attached to a multilateral environmental agreement.

According to the data provided by the 2nd PNUD Report on the Development Objectives of the Millennium in Romania, published in 2007, the much lower employment rate of women (53% compared to 64,7% in case of men) cannot be attributed to the lack of jobs or to certain employment inequalities, but rather to the fact that female population does not have the same participation behaviour on the labour market.

The report identifies the following obstacles and risks:

a) The feminisation of certain fields of activity and the fact that these are poorly paid most of the times;
b) The family responsibilities carried out by women only;
c) The role of main family carer (children and elderly or people with special needs) that only women undertake;
d) The small possibility of being provided with continuing training services;

The same report lists contributing factors such as the National Strategy for Equality of Chances between women and men for the period 2006-2009 and the General Action Plan for its implementation consisting of important public policies that contribute to the improvement of women employment: promoting the equal access to initial and continuing training for women and men, promoting the access of women and men to economical activities where their representation is quite low and promoting the principle of equal payment for equal work.

Indicators

For monitoring the implementation of the Action Plan, performance indicators were established for each activity (chapter 5).

At the same time, in order to assess the extent to which the lines of action set in chapter 4 have been met, the use of SEBI 2010 indicators (*Streamlining European 2010 Biodiversity Indicators*) is required. These indicators for biodiversity monitoring were adopted in 2004 at (the Message from Malahide[3]), while in 2005 they were also adopted at the level of the Council of the European Union by PBLDS (Pan European Biological and Landscape Diversity Strategy).

SEBI 2000 indicators fulfil the obligations undertaken from political point of view at national, community, regional or global level for the conservation of biodiversity and the sustainable use of its components, but they can also be used in order to assess the progress or in other fields (for e.g. agriculture, forestry, poverty reduction, health, commerce, sustainable development).

SEBI2010 indicators are divided into several groups and subgroups by considering the main strand of activity to be involved in the monitoring, assessment and reporting process and each class is described according to the reporting requirements of the member states and sent to the European Environment Agency. The categories of indicators to be monitored are the following:

1. Conservation status and the trend of biological diversity components	□ Trend concerning the conservation status of ecosystems and natural habitats □ Trend concerning the abundance and distribution of wild species □ National coverage of the natural protected areas network □ Improving the conservation status of endangered species □ Trend concerning the conservation status of genetic diversity for domestic animal species, crop plants and fishery resources of economic importance
2. Sustainable use	□ Surface of forests, arable land and aquatic ecosystems that require a sustainable management □ Proportion of derived products originating from sustainable exploited resources □ Ecological footprint and its corresponding concepts
3. Biodiversity threats	□ Accumulation of nitrogen □ Trend concerning invasive species
4. Ecosystems integrity (goods and services)	□ Marine trophic index □ Water quality of aquatic ecosystems – as drinking water source

[3] EU Council Conclusions of 28 June 2004 (10997/04)

	□ Trophic integrity of ecosystems □ Connectivity/fragmentation of ecosystems □ Anthropic incidence responsible for the degradation of ecosystems □ Health and the living standard of communities depending directly on the goods and services provided by ecosystems □ Biodiversity as food and medicine source
5. The use of traditional knowledge, innovation and practices	□ Indicators concerning the use of traditional knowledge, innovation and practices
6. Access to genetic resources and the equitable sharing of benefits	□ Indicators concerning the access to genetic resources and the equitable sharing of benefits
7. Technology transfer	□ Developing the official assistance as support of the Convention □ Indicators concerning technology transfer