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E DO ORDENAMENTO DO TERRITÓRIO

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Instituto da Conservação da Natureza e da Biodiversidade

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FOURTH NATIONAL REPORT

TO THE

CONVENTION ON BIOLOGICAL DIVERSITY

Index

Executive Summary **5**
Chapter I - Overview of Biodiversity Status, Trends and Threats **9**
1. General **9**
2. Status and trends of important biodiversity components **10**
Terrestrial biogeographical regions 10
Status of grassland, forest, heath and scrub, and peat land habitats 12
Status of grassland habitats 12
Status of forest habitats 13
Status of heath and scrub 13
Status of peat land habitats 14
Status of freshwater habitats 14
Species (other than birds) 15
Marine biogeographic regions 17
Status of marine species and habitats 17
Habitats 18
Species (except birds) 18
Conclusions 20
Red Lists and Books 21
Birds 22
Farmland bird indicator 22
High nature value farmland 22
Certified forest area 23
Future prospects (species assessed in Habitats Directive context) 23
Mediterranean Biogeographic Region 23
Atlantic Biogeographic Region 27
Marine Atlantic Biogeographical Region 30
Macaronesian Biogeographical Region 32
Marine Macaronesian Biogeographical Region 33
3. Main threats (and their drivers or causes) to important biodiversity components **34**
Mediterranean Biogeographical Region 34
Atlantic Biogeographical Region 35
Marine Atlantic Biogeographical Region 36
Macaronesian Biogeographical Region 37
Marine Macaronesic Biogeographical Region 38
Chapter II - Current Status of National Biodiversity Strategies and Action Plans **41**
1. A brief description of the NBSAP, identifying the main or priority activities **41**
2. Overview of progress in the implementation of priority activities of the ENCNB **43**
ENCNB Strategic Option 1 43
ENCNB Strategic Option 2 44
ENCNB Strategic Option 3 45
ENCNB Strategic Option 4 48
ENCNB Strategic Option 5 49
ENCNB Strategic Option 6 53
ENCNB Strategic Option 7 53
ENCNB Strategic Option 8 54
ENCNB Strategic Option 9 56
ENCNB Strategic Option 10 57
3. Specific information requested in COP 8 decisions **60**
VIII/21 (Marine and coastal – deep seabed) Para 3 60
Shark monitoring 60
VIII/22 (Marine and coastal – IMCAM) Para 5 61

VII/28 (Impact assessment) Para 5 63
4. Domestic funding dedicated to nature and biodiversity conservation 65
Chapter III - Sectoral and cross-sectoral integration or mainstreaming of biodiversity 69
Integration of conservation of nature and biodiversity by Sector 72
Land Use Planning 72
Environmental Impact Assessment and Strategic Environmental Assessment 73
Agriculture 74
Hunting / Forests / Fisheries / Tourism 76
Other policies and activities 77
Chapter IV - Conclusions: Progress towards 2010 Target and Implementation Strategic Plan 79
ENCNB Strategic Option 1 79
ENCNB Strategic Option 2 80
ENCNB Strategic Option 3 80
ENCNB Strategic Option 4 82
ENCNB Strategic Option 5 83
ENCNB Strategic Option 6 84
ENCNB Strategic Option 7 85
ENCNB Strategic Option 8 85
ENCNB Strategic Option 9 86
ENCNB Strategic Option 10 87
Conclusion 88
Appendix I - Information concerning reporting Party and preparation of national report 93
Appendix II - Progress towards Targets of the Programme of Work on Protected Areas 95
Appendix III – Progress towards the targets of the Global Strategy for Plant Conservation 115
Appendix IV – Acronyms 153

Executive Summary

The present report is the fourth National Report on the implementation of the Convention on Biological Diversity in Portugal. The previous National Reports were published in 1998, 2001 and 2007. The report is organised as follows:

Chapter I starts by providing a general description of Portugal adressing its geography, its two distinct biogeographical zones and the climate. Chapter I then goes on to provide an overview of the status and trends of important biodiversity componentes in Portugal by biogeographic regions (terrestrial and marine), at the species and habitat levels. Information on Birds is presented in a specific title under this Chapter. The final part of Chapter I addresses the main threats to important biodiversity components and its drivers or causes. Information on the main threats is also divided according to biogeographic regions (terrestrial and marine).

The information presented in this chapter shows than despite all conservation efforts in last years the overall conservation status of natural and semi-natural habitats types in Portugal there is still a lot of work to do in order to achieve an adequate conservation status for many of them, mainly in habitat types more sensitive to impacts, those subjected to greater human pressure (such the coastal ones), and those who require a higher degree of ecological evolution to be in a good condition. It is also clear that the degree of knowledge needs to be improved.

Also a relevant number of assessed species presents a poor conservation state with freshwater and diadromous fish being the most threatned. The lack of knowledge for several species, notably invertebrates, prevented us to define their conservation state.

Overall the conservation of species in habitat is in a better state in Azores and Madeira Archipelags than in mainland Portugal.

An assessment of the conservation state of flora species of community interest is not presented. A preliminary draft is currently being discussed and will be finalized in a near future.

Chapter II starts by providing a brief description of the country's National Strategy for the Conservation of Nature and Biodiversity (ENCNB) which constitutes the overarching strategic document for nature conservation and biodiversity in Portugal. It is the main instrument of policy integration for nature conservation with other relevant sectoral policies. The implementation of the ENCNB (2001-2010) is extensively described. An indepth review of the status of implementation of each of its ten Strategic Options is also presented in this chapter.

Among the main actions implemented in the context of the ENCNB, the following examples may be highlighted:

- the adoption of the legal regime of nature conservation and biodiversity (Decree-Law No. 142/2008 of July 24), to ensure the integration and harmonious regulation of areas with different environmental protection statute and thus clarifying the applicable legal regime in situations of overlap and the scope of some of the existing figures in the legal framework. An essential component of this regime is the new economic and financial regime of nature conservation and biodiversity given the importance of this scheme to reverse the cycle of deterioration and lack of investment in nature conservation and biodiversity in recent years;

- The in-depth review of the policy on land use planning and urban development (dated 1999) that took place in 2007 (Decree-Law No. 316/2007 of 19 September), and was resumed in

2009 (Decree-Law No. 46/2009 of 20 February) ;

- The adoption in 2007 of a legal framework for environemntal strategic assement of plans and programms under Decree-Law no. 232/2007 of 15 June;

- The publication of Protected Areas Land Use Plans (POAP) for the protected areas of national scope (including in the autonomous regions);

- The first steps towards the adoption of measures for the conservation and management of the marine environment are being taken, especially through the implementation of the National Strategy for the Seas (ENM) and instruments such as the Maritime Areas Spatial Plans (POEM, under progress) that will allow to plan maritime activities, including the delimitation of areas for the conservation of nature and biodiversity and the project Network of Marine Protected Areas (MPA), which aims to implement a network of MPA as a means of safeguarding the key areas for conservation and management of living and non-living resources;

- The elaboration and adoption of the Sectoral Plan for Natura 2000 Network (PSRN2000), both in mainland Portugal and in the Azores. The PSRN2000 defines the strategic guidelines for the management of natural values present in the areas encompassed within the Natura 2000 Network in order to ensure the maintenance of those values (flora and fauna and natural habitats) in a favourable conservation status in the medium and long term;

- The celebration of the Agreement of Cooperation between Spain and Portugal for the *ex situ* conservation of the Iberian lynx, published in 2008, which will allow the reintroduction of the species and the publication of the Plan of Action for the Conservation of the Iberian Lynx, also in 2008, to facilitate the conservation of the species in the national territory, reversing the process of continued decline of populations and to recover the historic cores of this species.

- The establishment of Strategic Councils of the Protected Areas of national interest. Created under Decree-Law No. 136/2007 of 27 April, in order to enhance the relationship with all actors who interact in these areas, taking into account the crosscutting demands on the active management of nature conservation and biodiversity;

- The initiative Business & Biodiversity, which aims at strengthening links between the business community and biodiversity, through the involvement of businesses in biodiversity conservation and confirming the added value of biodiversity for its operations;

- The Iberian Project "Iberia Change", a project of great scale, developed by the governments of Spain and Portugal designed to assess possible impacts of climate change on Iberian biodiversity over the next 100 years. This project is aims to implement joint initiatives to help mitigate the impacts on biodiversity associated with climate change.

Chapter II concludes by providing detailed information on actions taken to address specific requests contained in CBD COP Decisions, namely Decision VIII/21, Decision VIII/22 and Decision VII/28 and by providing a brief overview on domestic funding dedicated to nature conservation and biodiversity.

Chapter III describes the sectoral and cross-sectoral integration of biodiversity, namely the relevant legal diplomas and other normative and guiding documents that support this integration. It provides

detailed information on the initiatives that promote the integration of biodiversity concerns in various sectors namely land use planning, environmental impact assessment, agriculture, hunting, forests, fisheries and tourism among others. Also a brief insight is given on the EU funds, in particular on funds related to regional development policy, with strategic importance to environmental issues and within these nature conservation and biodiversity.

Chapter IV reviews the progress made by Portugal towards the 2010 Target. It provides a thorough assessment of the implementation of each of the ten Strategic Options of the ENCNB. Building on the the conclusions resulting from the assessment, recommendations are put forward in order to improve the implementation of the ENCNB and thereby contributing to the achievement of the objectives of the CBD and of its Strategic Plan.

The fourth National Report on the implementation of the Convention on Biological Diversity in Portugal includes the following, **appendices**:

- party and report contact information and information on the elaboration process of the report;

- progress towards Targets of the Programme of Work on Protected Areas;

- progress towards Targets of the Global Strategy for Plant Conservation;

- Acronyms

Chapter I - Overview of Biodiversity Status, Trends and Threats

1. General

Portugal's mainland territory covers a total area of 9,189,892 ha. and includes a coastline which is about 800 kms long. It is located at the extreme south-western tip of Europe at the western edge of the transition boundary between two distinct biogeographical zones: the Atlantic sub-region of the Euro-Siberian region, and the Mediterranean region. Its considerable biophysical diversity results from the interaction of the determining climatic features of these two regions, which is made possible by the fact that the country extends over fairly a wide latitude range. Additional elements in the Portuguese framework are the country's decisive orography and the diversity of its prevailing pedological characteristics, which have been modelled by the intervention of the succession of peoples who have depended on the country's diversity over time.

Mainland Portugal is relatively mountainous and a substantial percentage of its territory lies above the 300-metre altitude level, especially in the north and centre of the country. In this context the highest area is Serra da Estrela, reaching 2,000 metres. The mainland area is essentially crossed by four major river basins: the Mondego, the Douro, the Tagus (Tejo) and the Guadiana, with the last three having their source in Spain.

The mainland climate is temperate, with annual average temperatures ranging from 7º C in the highlands of the central interior to 18º C along the south coast, and an average precipitation which varies between 3,100 mm. in the mountainous regions of the northern interior and 450 mm. on the south coast.

By European standards, Portugal possesses a rich and diverse flora and fauna, to which its island territories (the Madeira Archipelago and the Azores Archipelago),located in the Atlantic Ocean and part of the Macaronesian region, make a remarkable contribution. The Madeira Archipelago, which covers a total area of 77,892 ha., is situated around 1,000 kms. to the south-west of mainland Portugal and the Azores Archipelago, which is to be found more than 1,200 kms. west of the mainland, covers a total area of 232,967 ha.

The variety of the factors which determine the Archipelagos' climates, ranging from the temperate Atlantic to the subtropical, result in a rich range of autochthonous flora and fauna associated with a great diversity of exotic species. Some of the latter are cultivated and some not, depending on the considerable differences in the way they have adapted themselves to the local conditions – differences that sometimes occur even within the territory of a single island.

In Portugal we are thus faced with an extremely diverse situation that is further affected by the omnipresence of the "Human" factor. Man has been present in Portugal since time immemorial, albeit with various degrees of intensity and varying consequences during different eras and in different regions.

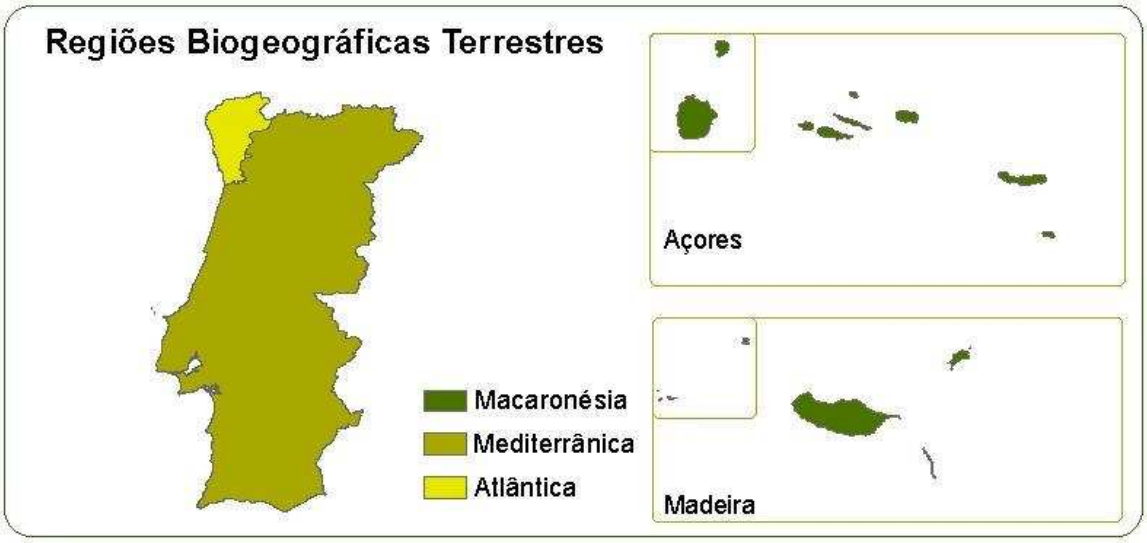
In demographic terms the Portuguese population is stable. In 2009 the resident population was estimated at around 10,144,940 inhabitants on the mainland, 247,399 in Madeira and 245,274 in the Azores.

2. Status and trends of important biodiversity components

Terrestrial biogeographical regions[1]

Mainland Portugal is essentially integrated within the Mediterranean region, although the frontier between the latter and the Atlantic region crosses the country's extreme north-eastern tip. This biogeographical border and the interpenetration of the characteristics of each of the two regions give rise to the existence of multiple nuances and the occurrence of peculiar and unique situations, while many of the types of habitats are at the border of their natural distribution area.

The Azores and Madeira Archipelagos are situated within the Macaronesian region and thanks to their location, the climatic influences to which they are subject and a substratum of volcanic origin, are home to habitats of quite unique nature and undeniable importance.



In the Atlantic biogeographical region, 50% or more of all habitat types under legal protection, with the exception of rocky habitats, are in an unfavourable- inadequate condition. The condition of 2 of the 3 (67%) rocky habitats is reported to be in favourable condition. 50% of Atlantic bog, mire and fen habitats are reported to be in an unfavourable-bad condition.

In the Macaronesian biogeographical region 4 of the 4 (100%) rocky habitats, and 2 of the 4 (50%) freshwater habitats and heath and scrub habitats are reported to be in favourable condition. All sclerophyllous scrub and grassland habitats are in an unfavourable-inadequate condition. The condition of 50% of freshwater habitats, heath and scrub habitats, forest habitats and bog, mire and fen habitats is also reported to be an unfavourable-inadequate. 1 of 1 (100%) dune habitats and 2 of the 4 (50%) forest habitats are in unfavourable-bad condition respectively.

In the Mediterranean biogeographical region, 3 of the 3 (60%) heath and scrub habitats, and 4 of the 8 (50%) of sclerophyllous scrub habitats, grassland habitats and rocky habitats are reported to be in favourable condition. Half or more of coastal habitats (8 of the 13 or 62%), dune habitats (9 of the 11 or

1 http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007&vm=detailed&sb=Title
http://biodiversity.eionet.europa.eu/article17/

82%), sclerophyllous scrub habitats (50%), grassland habitats (4 of the 8 or 50%), and bog, mire and fen habitats (5 of the 10 or 50%) are reported to be in an unfavourable-inadequate condition. The remaining 1 of the 2 or 50% of bog, mire and fen habitats are in an unfavourable-bad condition.

The condition of all coastal and rocky habitats in the Marine Atlantic is unknown.

In the Macaronesian Marine biogeographical region, 1 of the 1 (100%) rocky habitats and 2 of the 3 (67%) coastal habitats are in favourable condition respectively. The condition of the remaining 1 of the 3 (33%) coastal habitats is unknown.

An analysis for the biogeographical regions follows below:

Biogeographical region	Habitat	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences [TOTAL]
		FV= Favourable		U1= Unfavourable-inadequate		U2= Unfavourable-bad		XX= Unknown		NA= Not reported		
Marine Atlantic	Coastal habitats	0	0%	0	0%	0	0%	3	100%	0	0%	3
	Rocky habitats	0	0%	0	0%	0	0%	1	100%	0	0%	1
Atlantic	Coastal habitats	0	0%	7	88%	0	0%	1	13%	0	0%	8
	Dunes habitats	0	0%	6	75%	2	25%	0	0%	0	0%	8
	Freshwater habitats	1	25%	2	50%	0	0%	1	25%	0	0%	4
	Heath & scrub	1	33%	2	67%	0	0%	0	0%	0	0%	3
	Sclerophyllous scrub	0	0%	1	100%	0	0%	0	0%	0	0%	1
	Grasslands	2	40%	3	60%	0	0%	0	0%	0	0%	5
	Bogs, mires & fens	0	0%	1	50%	1	50%	0	0%	0	0%	2
	Rocky habitats	2	67%	0	0%	0	0%	1	33%	0	0%	3
	Forests	2	40%	3	60%	0	0%	0	0%	0	0%	5
Macaronesian	Coastal habitats	2	29%	2	29%	2	29%	1	14%	0	0%	7
	Dunes habitats	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Freshwater habitats	2	50%	2	50%	0	0%	0	0%	0	0%	4
	Heath & scrub	1	50%	1	50%	0	0%	0	0%	0	0%	2
	Sclerophyllous scrub	0	0%	1	100%	0	0%	0	0%	0	0%	1
	Grasslands	0	0%	1	100%	0	0%	0	0%	0	0%	1
	Bogs, mires & fens	1	25%	2	50%	1	25%	0	0%	0	0%	4
	Rocky habitats	4	100%	0	0%	0	0%	0	0%	0	0%	4
	Forests	0	0%	2	50%	2	50%	0	0%	0	0%	4
Marine Macaronesian	Coastal habitats	2	67%	0	0%	0	0%	1	33%	0	0%	3
	Rocky habitats	1	100%	0	0%	0	0%	0	0%	0	0%	1
Mediter	Coastal	3	23%	8	62%	2	15%	0	0%	0	0%	13

ranean	habitats											
	Dunes habitats	0	0%	9	82%	2	18%	0	0%	0	0%	11
	Freshwater habitats	5	42%	4	33%	1	8%	2	17%	0	0%	12
	Heath & scrub	3	60%	2	40%	0	0%	0	0%	0	0%	5
	Sclerophyllous scrub	4	50%	4	50%	0	0%	0	0%	0	0%	8
	Grasslands	5	50%	5	50%	0	0%	0	0%	0	0%	10
	Bogs, mires & fens	0	0%	1	50%	1	50%	0	0%	0	0%	2
	Rocky habitats	3	50%	2	33%	0	0%	1	17%	0	0%	6
	Forests	3	19%	11	69%	0	0%	2	13%	0	0%	16

Status of grassland, forest, heath and scrub, and peat land habitats

According to the Article 17 Habitats Directive report, all of the Macaronesian grassland habitats in Portugal have an unfavourable conservation status as do 60 per cent of the Atlantic grassland habitats and 50 per cent of the Mediterranean favourable conservation status. All 4 occurrences of the Macaronesian forest habitat have an unfavourable conservation status as do 60 per cent of the Atlantic grassland habitats. The remaining Atlantic and Mediterranean grassland habitats have a forest habitat and 69 per cent of the Mediterranean forest habitats. 40 per cent of the Atlantic and 19 per cent of the Mediterranean forest habitats have a favourable conservation status; the status of the remaining Atlantic and Mediterranean forest habitats is unknown. Of the heath and scrub habitats in Portugal, 33 per cent of the Atlantic, 50 per cent of the Macaronesian and 60 per cent of the Mediterranean habitats have a favourable conservation status; the remainder has an unfavourable status. All of the Atlantic and Mediterranean peat land habitats in Portugal have an unfavourable conservation status. 75 per cent of the Macaronesian peat land habitats have an unfavourable status; the remaining 25 per cent has a favourable status.

Status of grassland habitats

ALL BIO	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
16	9	7	0	0	56%	44%	0%	0%

Atlantic	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
5	3	2	0	0	60%	40%	0%	0%
U1	3							
U2	0							

Macaronesian	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
1	1	0	0	0	100%	0%	0%	0%
U1	1							
U2	0							

Mediterranean	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
10	5	5	0	0	50%	50%	0%	0%
U1	5							
U2	0							

Status of forest habitats

ALL BIO	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
25	18	5	2	0	72%	20%	8%	0%

Atlantic	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
5	3	2	0	0	60%	40%	0%	0%
U1	3							
U2	0							

Macaronesian	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
4	4	0	0	0	100%	0%	0%	0%
U1	2							
U2	2							

Mediterranean	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
16	11	3	2	0	69%	19%	13%	0%
U1	11							
U2	0							

Status of heath and scrub

ALL BIO	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
10	5	5	0	0	50%	50%	50%	0%

Atlantic	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
3	2	1	0	0	67%	33%	0%	0%
U1	2							
U2	0							

Macaronesian	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
2	1	1	0	0	50%	50%	0%	0%
U1	1							
U2	0							

Mediterranean	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
5	2	3	2	0	40%	60%	0%	0%
U1	2							
U2	0							

Status of peat land habitats

ALL BIO	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
8	7	1	0	0	88%	13%	0%	0%
Atlantic	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
2	2	0	0	0	100%	0%	0%	0%
U1	1							
U2	1							
Macaronesian	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
4	3	1	0	0	75%	25%	0%	0%
U1	2							
U2	1							
Mediterranean	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
2	2	3	2	0	100%	0%	0%	0%
U1	1							
U2	1							

Note: The above table refers to habitats which are considered representative for the wider countryside and are covered by the Habitats Directive.
'Unfavourable' habitats are also presented combined (U1 and U2=U) due to discrepancy in the way 'unfavourable' and 'unfavourable bad' habitats were described.
Number of occurrences and information on the conservation status of sites are based on data provided by the European Topic Centre on Biological Diversity. Percentages have been calculated based on this information.2

Status of freshwater habitats

According to the Article 17 Habitats Directive report, 50 per cent of both the Atlantic and Macaronesian fresh water habitats in Portugal have an unfavourable status. 42 per cent of the Mediterranean fresh water habitats have an unfavourable status. 25 per cent of the Atlantic fresh water habitats have a favourable conservation status, a further 25 per cent have an unknown status. 50 per cent of Macaronesian and 42 per cent of the Mediterranean fresh water habitats have a favourable status. The remaining 17 per cent of the Mediterranean fresh water habitats have an unknown status. See under 'Additional clarifications' below for the detailed data.

ALL BIO	U1+U2	FV Numbers	XX Numbers	NA Numbers	U1+U2	FV Percentage	XX Percentage	NA Percentage
Number	Numbers				Percentage			
Occurrences								
20	9	8	3	0	45%	40%	15%	0%

2 HD Article 17 report. http://biodiversity.eionet.europa.eu/article17/
http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007&vm=detailed&sb=Title

Atlantic Number Occurrences	U1+U2 Numbers	FV Numbers	XX Numbers	NA Numbers	U1+U2 Percentage	FV Percentage	XX Percentage	NA Percentage
4	2	1	1	0	50%	25%	25%	0%
U1	2							
U2	0							

Macaronesian Number Occurrences	U1+U2 Numbers	FV Numbers	XX Numbers	NA Numbers	U1+U2 Percentage	FV Percentage	XX Percentage	NA Percentage
4	2	2	0	0	50%	50%	0%	0%
U1	2							
U2	0							

Mediterranean Number Occurrences	U1+U2 Numbers	FV Numbers	XX Numbers	NA Numbers	U1+U2 Percentage	FV Percentage	XX Percentage	NA Percentage
12	5	5	2	0	42%	42%	17%	0%
U1	4							
U2	1							

Note: The above table refers to freshwater habitats which are covered by the Habitats Directive. For freshwater habitats this includes standing water (e.g., natural dystrophic lakes and ponds) and running water with sections of water courses with natural or semi-natural dynamics.
'Unfavourable' habitats are also presented combined (U1 and U2=U) due to discrepancy in the way 'unfavourable' and 'unfavourable bad' habitats were described.
Number of occurrences and information on the conservation status of sites are based on data provided by the European Topic Centre on Biological Diversity. Percentages have been calculated based on this information.[3]

Species (other than birds)

In the Atlantic biogeographical region, 4 of the 16 (25%) amphibians and reptiles are in an unfavourable-favourable condition. 12 of the 16 (75%) amphibians and reptile, 4 of the 9 (44%) fish and 4 of the 7 (57%) invertebrates are in an unfavourable-inadequate condition. 5 of the 9 (56%) fish were reported to be in an unfavourable-bad condition. The conservation status of 19 of the 25 (76%) mammals is unknown and the status of all plants was not reported.

In the Macaronesian biogeographical region, 1 of the 2 (50%) amphibians and reptiles and 36 of the 84 (43%) plants are in a favourable condition. 28 of the 84 (33%) plants are in an unfavourable-inadequate condition. 6 of the 13 (46%) invertebrates, 15 of the 84 (18%) plants and all mammals (4 of 4) of Community interest are in an unfavourable-bad condition. The conservation status of 1 of the 2 (50%) amphibians and reptiles and 5 of the 13 (38%) invertebrates is unknown. 1 of the 3 (8%) and 4 of the 84 (5%) invertebrates and plants were not reported, respectively.

Of the species in the Macaronesian/Marine Atlantic biogeographical region, 5 of the 5 (100%) amphibians and reptiles and 3 of the 29 (10%) mammals are in an unfavourable-inadequate condition. The conservation status of 1 of 1 (100%) invertebrates and 23 of the 29 (79%) mammals and 1 of 1 (100%) invertebrates is unknown. 10% of mammals were not reported.

[3] HD Article 17 report . http://biodiversity.eionet.europa.eu/article17/
http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007&vm=detailed&sb=Title

Of the species in the Mediterranean biogeographical region, 4 of the 19 (21%) amphibians and reptiles, 4 of the 14 (29%) invertebrates and 6 of the 36 (17%) mammals are in a favourable condition. The conservation status of 15 of the 19 (79%) amphibians and reptiles, 7 of the 21 (33%) fish and 10 of the 36 (28%) mammals was reported to be an unfavourable-inadequate. 14 of the 21 (67%) fish and 50% of invertebrates are in a bad condition. The conservation status of 10 of the 36 (28%) mammals is unknown. The conservation status of all plants was not reported.

Biogeographical region	Species group	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences [TOTAL]
		FV= Favourable		U1= Unfavourable-inadequate		U2= Unfavourable-bad		XX= Unknown		NA= Not reported		
Marine Atlantic	Amphibians and reptiles	0	0%	0	0%	0	0%	4	100%	0	0%	4
	Fish	0	0%	0	0%	0	0%	0	0%	5	100%	5
	Invertebrates	0	0%	0	0%	0	0%	1	100%	0	0%	1
	Mammals	3	13%	2	8%	0	0%	19	79%	0	0%	24
	Plants	0	0%	0	0%	0	0%	0	0%	0	0%	0
Atlantic	Amphibians and reptiles	4	25%	12	75%	0	0%	0	0%	0	0%	16
	Fish	0	0%	4	44%	5	56%	0	0%	0	0%	9
	Invertebrates	0	0%	4	57%	1	14%	2	29%	0	0%	7
	Mammals	1	4%	5	20%	0	0%	19	76%	0	0%	25
	Plants	0	0%	0	0%	0	0%	0	0%	26	100%	26
Macaronesian	Amphibians and reptiles	1	50%	0	0%	0	0%	1	50%	0	0%	2
	Fish	0	0%	0	0%	0	0%	0	0%	0	0%	0
	Invertebrates	0	0%	1	8%	6	46%	5	38%	1	8%	13
	Mammals	0	0%	0	0%	4	100%	0	0%	0	0%	4
	Plants	36	43%	28	33%	15	18%	1	1%	4	5%	84
Marine Macaronesian	Amphibians and reptiles	0	0%	5	100%	0	0%	0	0%	0	0%	5
	Fish	0	0%	0	0%	0	0%	0	0%	0	0%	0
	Invertebrates	0	0%	0	0%	0	0%	1	100	0	0%	1
	Mammals	0	0%	3	10%	0	0%	24	80%	3	10%	30
	Plants	0	0%	0	0%	0	0%	0	0%	0	0%	0
Mediterranean	Amphibians and reptiles	4	21%	15	79%	0	0%	0	0%	0	0%	19
	Fish	0	0%	7	33%	14	67%	0	0%	0	0%	21
	Invertebrates	4	29%	3	21%	7	50%	0	0%	0	0%	14
	Mammals	6	17%	10	28%	9	25%	10	28%	1	3%	36
	Plants	0	0%	0	0%	0	0%	0	0%	123	100%	123

Marine biogeographic regions

Status of marine species and habitats[4]

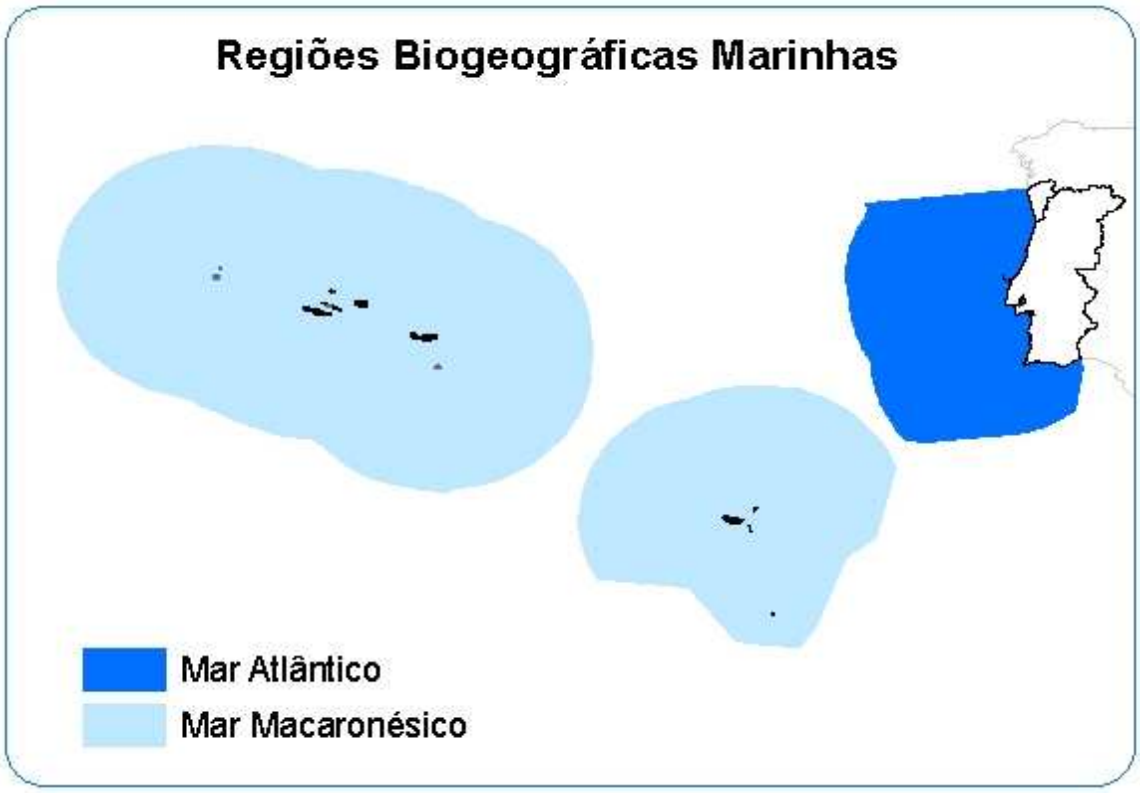
The Article 17 Report for Portugal showed that four out of four marine habitats in the Marine Atlantic region had an 'Unknown' status.

Four marine habitats were also assessed in the Marine Atlantic/Macaronesian region – of these, three had a 'Favourable' status (75%) and one had an 'Unknown' status (25%).

Eight coastal habitats were assessed in the Atlantic biogeographic region – of these, seven had an 'Inadequate' status (88%) and one had an 'Unknown' status (12%). Seven coastal habitats were assessed in the Macaronesian biogeographic region – two had a 'Favourable' status (29%), two had an 'Inadequate' status (29%), two had a 'Bad' status (29%), and the remaining one had an 'Unknown' status (14%). Thirteen coastal habitats were assessed in the Mediterranean biogeographic region – three had a 'Favourable' status (23%), eight had an 'Inadequate' status (62%) and two had a 'Bad' status (15%).

A total of 34 marine species were assessed in the Marine Atlantic region, including reptiles, fish, invertebrates and mammals. A large majority of these had an 'Unknown' status. Of the species assessed, three had a 'Favourable' status (9%), two had an 'Inadequate' status (6%), 24 had an 'Unknown' status (71%) and five were 'Not reported' (21%). A total of 36 marine species were assessed in the Marine Macaronesian/Atlantic region – eight had an 'Inadequate' status (22%), 25 had an 'Unknown' status (69%) and three were 'Not Reported' (8%).

4 Article 17 Reporting. http://biodiversity.eionet.europa.eu/article17/
http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007 &vm=detailed&sb=Title
Checklist of habitats/species reported and their overall conservation status-explanatory note.
http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007/ms-reports_checklists/explanatory_timepdf/_EN_1.0_&a=d



An analysis by marine biogeographic region follows bellow:

Habitats

Biogeographical region	Habitat	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences [TOTAL]
		FV= Favourable		U1= Unfavourable-inadequate		U2= Unfavourable-bad		XX= Unknown		NA= Not reported		
Marine Atlantic	Marine habitats	0	0%	0	0%	0	0%	4	100%	0	0%	4
Marine Macaronesian	Marine habitats	3	75%	0	0%	0	0%	1	25%	0	0%	4
Atlantic	Coastal habitats	0	0%	7	87.5%	0	0%	1	12.5%	0	0%	8
Macaronesian	Coastal habitats	2	28.6%	2	28.6%	2	28.6%	1	14.3%	0	0%	7
Mediterranean	Coastal habitats	3	23.1%	8	61.5%	2	15.4%	0	0%	0	0%	13

Species (except birds)

Biogeographical region	Species group	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences [TOTAL]
		FV=		U1=		U2=		XX=		NA=		

		Favourable		Unfavourable-inadequate		Unfavourable-bad		Unknown		Not reported		
Marine Atlantic	Amphibians & reptiles	0	0%	0	0%	0	0%	4	100%	0	0%	4
	Fish	0	0%	0	0%	0	0%	0	0%	5	100%	5
	Invertebrates	0	0%	0	0%	0	0%	1	100%	0	0%	1
	Mammals	3	13%	2	8%	0	0%	19	79%	0	0%	24
	Plants	0	0%	0	0%	0	0%	0	0%	0	0%	0
	TOTAL	3	9%	2	6%	0	0%	24	71%	5	21%	34
Biogeographical region	Species group	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences	% of number of occurrences	# of occurrences [TOTAL]
		FV= Favourable		U1= Unfavourable-inadequate		U2= Unfavourable-bad		XX= Unknown		NA= Not reported		
Marine Macaronesian	Amphibians & reptiles	0	0%	5	100%	0	0%	0	0%	0	0%	5
	Fish	0	0%	0	0%	0	0%	0	0%	0	0%	0
	Invertebrates	0	0%	0	0%	0	0%	1	100%	0	0%	1
	Mammals	0	0%	3	10%	0	0%	24	80%	3	10%	30
	Plants	0	0%	0	0%	0	0%	0	0%	0	0%	0
	TOTAL	0	0%	8	22%	0	0%	25	69%	3	8%	36

The following were considered 'marine' habitats and species, based on the European Topic Centre on Biodiversity's guidance.

Marine Habitats:

- 1110: Sandbanks which are slightly covered by sea water all the time
- 1120: Posidonia beds (*Posidonion oceanicae*)
- 1160: Large shallow inlets and bays
- 1170: Reef
- 1180: Submarine structures made by leaking gases
- 8330: Submerged or partially submerged sea caves

Marine Species:

Gorgonacea - Coralliidae
Corallium rubrum
Docoglossa - Patellidae
Patella ferruginea
Mytiloida - Mitylidae
Lithophaga lithophaga
Pinna nobilis
Decapoda - Scyllaridae
Scyllarides latus
Echinothuroida - Diadematidae
Centrostephanus longispinus
Nemalionales - Corallinaceae
Lithothamnium coralloides

Phymatholithon calcareum

Carnivora - Phocidae
Halechoerus grypus
Monachus monachus
Phoca hispida botnica
Phoca vitulina
All other seals *(Phocidae)* excluding *P. h. Saimensis* which only occurs in the Saimaa Lake system of Eastern Finland
Carnivora - Cetacea
Tursiops truncatus
Phocoena phocoena
All other dolphins and whales

Chelonia – Cheloniidae
Caretta caretta
Chelonia mydas
Lepidochelys kempii
Eretmochelys imbricata
Chelonia - Dermochelyidae
Dermochelys coriacea

Species that may also be attributed to one or several marine regions in addition to the terrestrial biogeographical region(s):

Petromyzoniformes - Petromyzonidae
Lampetra fluviatilis
Petromyzon marinus
Acipenseriformes - Acipenseridae
Acipenser sturio
Acipenser naccarii
All other sturgeons (Acipenseridae)
Clupeiformes - Clupeidae
Alosa alosa
Alosa fallax
All other Alosa spp
Salmoniformes - Coregonidae
Coregonus oxyrhynchus

Conclusions

The evaluation of natural habitats and flora and fauna species allowed highlighting the following:

- the majority of natural habitats have a poor/inadequate conservation status;
- the group of natural habitats is the one with the highest percentage of favourable assessments, with higher incidence in pioneer communities - rocky habitats, grasslands, heaths and woods;

- the majority of natural habitats with a unfavourable/bad conservation status are dune habitats, other coastal habitats under salty influence and bogs and peatlands;
- a significant percentage of Macaronesian habitats presents an overall favourable rating;
- the majority of assessed species has a poor/inadequate conservation status;
- more than 40% of the Macaronesian flora species present a favourable evaluation;
- amphibians and reptiles are the two groups of animals with the highest percentage of favourable ratings and are also the only two groups with no species been on of "unfavourable/bad" categories;
- the group of animals with a higher number of unfavourable/bad evaluations is fish, whose situation is of particular concern in the Mediterranean region, where there has been regression of populations and habitats of some endemic species;
- for a significant proportion of species of flora and fauna of the Mediterranean and Atlantic biogeographic regions, the result of the overall assessment was not shown. This is due to several factors: a) an overall assessment of flora species on these regions was not produced, b) for some fauna species existing knowledge did not allow to undertake this assessment, as is the case for most of the invertebrates, c) for some wildlife species occurring simultaneously in marine and inland regions, since there is no separate information for each region, existing information was only reported for the inland region (e.g. in case of migratory fish), d) for some bat species of the Mediterranean and Macaronesian regions and for all bat species on the Atlantic region the information available was not enough to assess their conservation status.
- the lack of information for many natural habitats and species justifies the absence of response to other parameters, including the "area occupied by habitat", "species population" and “species habitats”.

Red Lists and Books

Portugal has Red Lists for birds, mammals, amphibians and reptiles, fish (freshwater and migratory), invertebrates and plants (bryophytes).

Portugal’s Vertebrates Red Data Book was released in 2005 after the assessment of 551 entities (species and particular populations of birds and fishes). This assessment covered mainland and Azores and Madeira archipelagos and was based on the latest system of the International Union for Conservation of Nature (IUCN) (categories and criteria), for the classification of threat of extinction and the RAMAS Red List software.

In terms of *taxa* the results were as follow:

- Mammals: 108 entities assessed, 11 Critically Endangered, 7 Endangered; 13 Vulnerable; 1 Near Threatened ; 42 Least Concern; 33 Data Deficient; 1 Regionally Extinct
- Birds: 362 entities assessed; 20 Critically Endangered; 30 Endangered; 61 Vulnerable; 29 Near Threatened; 174 Least Concern; 31 Data Deficient; 17 Regionally Extinct

- Freshwater and Migratory Fishes: 35 entities assessed; 8 Critically Endangered; 10 Endangered; 4 Vulnerable; 2 Near Threatened; 8 Least Concern; 2 Data Deficient; 1 Regionally Extinct

- Reptiles: 32 entities assessed; 4 Endangered; 6 Vulnerable; 2 Near Threatened; 20 Least Concern

- Amphibians: 16 entities assessed; 2 Vulnerable; 1 Near Threatened; 13 Least Concern

The checklist of portuguese (mainland, Azores, Madeira) vascular flora, with 4003 *taxa*, is just finished. This list will be the base for the assessment of the threat of extinction of the vascular flora.

The invertebrate red lists are limited to the Autonomous Regions of Azores and Madeira.

The most threatened group is the freshwater and migratory fish, a group that deserves a particular attention since it depends on the conservation of water courses which is a habitat under huge pressure, notably by barriers to movement, degradation of natural riverbanks, pollution and invasive alien species.

Birds[5]

Portugal's Vertebrates Red Data Book which is based on the IUCN Threat Categories and Criteria, is applied on 362 species of vertebrates (including 334 bird species that regularly occur in Portugal). Of these, 48% fall in the category LC (Least Concern), 8% in NT (Near Threatened) and 35% are threatened.

Note that this refers to all bird species of Portugal birds and cannot be compared with the information for other biological groups presente in this report. For the species other than birds the methodology is different, being based on the conservation status report (Habitats Directive Article 17), and the conservation status for these biological groups refers only to those taxa of Community Interest and which are listed in the annexes to the Habitats Directive.

Farmland bird indicator[6]

Between the years 2004 and 2006, Portugal's national farmland bird indicator has increased to 5.9 per cent from the 2004 baseline. 21 species were assessed. No data are available on Portugal's national farmland bird indicators before the year 2004.

Individual national species indices are produced by annually operated national breeding bird surveys from 22 European countries that cover different periods and are obtained through the Pan-European Common Bird Monitoring Scheme (PECBMS). These national species indices are computed using a software package named TRIMwhich allows for missing counts in the time series and yields unbiased yearly indices and standard errors using Poisson regression.

High nature value farmland[7]

According to the high nature value (HNV) farmland report published by the European Environmental Agency and Joint Research Centre in 2008, HNV farmland in Portugal amounted to 2.90 million ha, representing a share of 57.6 per cent of HNV farmland in farmed area.

5 http://portal.icnb.pt/ICNPortal/vPT2007/Valores+Naturais/Livro+Vermelho+dos+Vertebrados/?res=800x600
6 Status of common bird monitoring, European Bird Census Council. http://www.ebcc.info/country.html
7 EEA/JRC High nature value farmland. http://agrienv.jrc.ec.europa.eu/publications/pdfs/HNV_Final_Report.pdf

High nature value farmland describes the general characteristics of low-input farming systems in terms of biodiversity and management practices, according to Baldock et al. (1993) and Beaufoy et al. (1994).The EEA and JRC report calculated the extent of HNV farmland for each NUTS 2 area in the EU-27.

The area of farmed land was calculated as the total land area belonging to the CLC agricultural classes (the 11 'agricultural' classes of CORINE level 3 and parts of class 3.2.1 'natural grasslands') plus identified HNV farmland outside these classes. It should be stressed that the results were neither intended nor suitable for evaluating the impact of rural development measures at national or regional level.

Portugal has not adopted the methodology proposed by the Joint Research Centre (or alternative) for the definition of HNV farming and forestry. Within the framework of the Joint Monitoring and Evaluation of Rural Development, the European Commission proposed an alternative methodology for these indicators, which is still under development in Member States.

Certified forest area[8]

In 2009 Portugal had a total certified forest area of 361,005 hectares out of a total forest area of 3.78 million hectares. 192,819 hectares were certified by the Forest Stewardship Council (FSC) while the remainder was certified by the Programme for the Endorsement of Forest Certification Schemes (PEFC) under which 168,186 hectares were certified. In total, 9.54 per cent of the forest area in Portugal was certified.

Figures refer to information about forest area certified to two major certification systems, the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification Schemes (PEFC).

Future prospects (species assessed in Habitats Directive context)

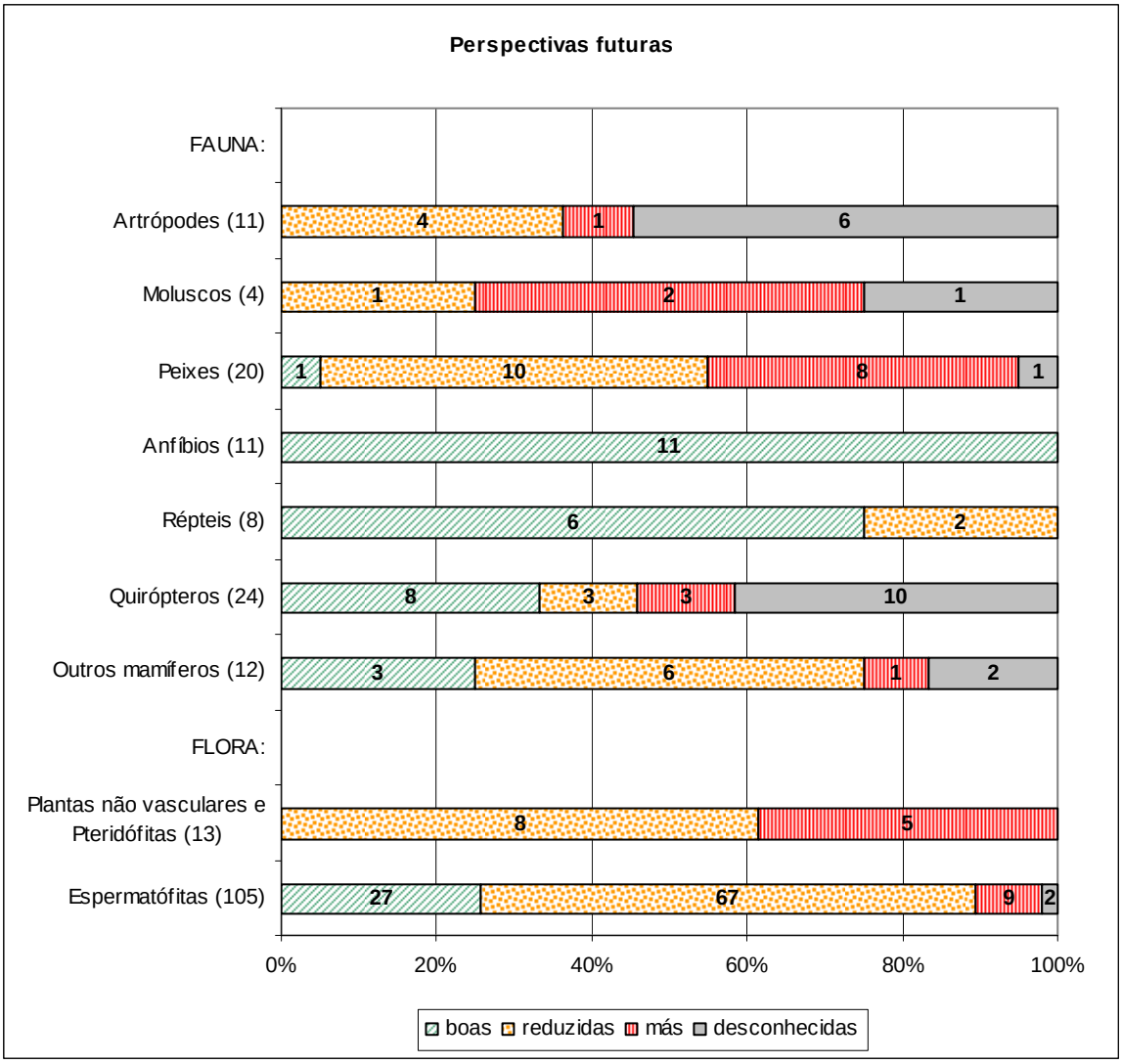
Mediterranean Biogeographic Region

Half of the species (45,6 %) fall in bad or inadequate prospect classes. However 32,2 % present favourable perspectives.

Given the degree of deficiency of data regarding the group of invertebrates, particularly arthropods, a significant proportion of the parameter unknown (54.5%) was expected.

The crab *Austropotamobius pallipes* is the arthropod with worst prospects, considering their apparent disappearance (Bernardo et al. 2001a and 2001b) and no availability of conditions for their recovery no suitable habitat due to invasive alien species).

8 FSC. http://www.fsc.org/facts-figures.html?&L=t%A8arget%3D_self . PEFC. http://register.pefc.cz/statistics.asp



Analysis of future prospects, by taxonomic group and habitat types (Good - good prospects to survive or thrive / Poor - species will face difficulties unless conditions change / Bad - there are serious threats to the long-term viability of the species)

The shellfish populations (particularly *Margartifera margaritifera* and *Unio crassus*, with more restricted distribution) are very sensitive to abrupt changes in habitat (such as droughts, dam construction and pollution discharges), and unable to recover by itself. They may even disappear if no concrete steps are taken, in particular habitat restoration and reintroduction of captive-bred juveniles. Most of the species of this group has poor or bad prospects

According to Portugal's Vertebrates Red Data Book (Rogado *et al*. In Cabral *et al*. 2005) fish is the taxonomic group with the highest percentage of entities with threat status (CR - critically endangered, EN - endangered VU - vulnerable), and future prospects are largely poor (50%) or bad (40%).

Amphibians and reptiles are the groups with better prospects, since their resilience and adaptation to environmental changes and to threatening factors are exceptionally wider when compared with other groups of vertebrates. The main reasons that allow this uneven resilience are the great reproductive capacity and the distribution and abundance of their populations.

The tortoise *Emys orbicularis* and the mountain lizard *Lacerta monticola* are the species in a more delicate situation, with poor future prospects. The tortoise has a small area of occurrence, highly fragmented, and is suffering a sustained reduction of habitat and likely of the number of individuals. The mountain lizard has a distribution limited to the central plateau of Serra da Estrela, and it has been observed a decline in the occupied area, habitat quality and number of mature individuals.

However, it should be noted that other species which have both a high degree of population fragmentation, small distributions (and range) and reduced reproduction capacity (e.g. snake *Coronella austriaca* and viper *Vipera seoanei*) might turn in a critical situation, if the factors of threat remain.

With regard to bats, although they are extensively studied, much of the information collected refers to cave species, and within these, there are different perspectives, taking into account the situation of each species (*Myotis nattereri*, and *Miniopterus schreibersii* - good prospects; *Myotis myotis*, *Rhinolophus ferrumequinum* and R. *hipposideros* - poor prospects; *Rhinolophus mehelyi*, *R. euryale* and *Myotis blythii* - bad prospects; *Myotis emarginatus* - unknown). For most non cavernicolous bat species the data is deficient and it is not possible to assess their distribution, population and trend, and to anticipate their evolution. Some non cavernicolous species (6) are not threatened, allowing to foresee a good evolution.

Also in the group of mammals, the iberian lynx *Lynx pardinus* is the species with the worst prospects, being considered in a pre-extinction scenario.

On the other hand side otter *Lutra lutra*, *Genneta genneta*, and *Herpestes ichneumon* are the species with best prospects, with widespread distributions and stable trends, with *Herpestes ichneumon* even presenting an increase of its distribution area in recent years.

The subpopulation of wolf *Canis lupus* in the north of river Douro is apparently stable, but the subpopulation at south has a reduced and apparently isolated population, and the habitat of the species seems to have suffered a moderate decrease (Pimenta *et al*. 2005). Thus, it is considered that in the mediterranean biogeographical region this species is struggling for survival, unless current conditions change.

The mountain goat *Capra pyrenaica* presents a trend of expansion of its occurrence area and a population growth but, given its very limited distribution and numbers, is very vulnerable to any stochastic event. Inbreeding problems should also be taken into consideration because this population had origin in a very small number of founders. For these reasons, the future prospects of the species are still low.

For 118 species of flora it appears that the majority (75.4%) presents a worrying scenario. According to the criteria used, 63.6% of species could face difficulties of survival unless current conditions change (poor prospects) and 11.9% of the total is facing serious threats that could jeopardize its viability (bad prospects).

The 75 species of flora with poor prospects form a rather heterogeneous group, with different reasons for their inclusion in this group. Generally most of them are portuguese endemisms with a short range, which in many cases recorded a decrease of the area occupied or area affected by pressures with significant effects on their condition. So these species are somewhat vulnerable, being necessary to take protective measures to avoid their populations reduction. A further detailed analysis may identify the following situations:

- a substantial portion of these species is associated with coastal biotopes (open areas or woods, with sandy or rocky substrates) and coastal (sand dunes and salt marshes). Many of them occupy small areas, sometimes related with the availability of habitat. In these areas human influence is high, in particular as a consequence of urban-tourism pressure, which is expected to continue to grow. Some species in this situation: *Herniaria algarvica, Biscutella vicentina, Linaria ficalhoana, Melilotus segetalis* subsp. *fallax*.

- other species associated with herbaceous and shrub communities depend on the maintenance of habitats which present a particular dynamic. On the one hand, they can be affected by the successional progression (especially in herbaceous plant communities), but are also disturbed by excessive cutting and soil mobilization (in the absence of a selective management of forests). Its conservation is often dependable of the compatibility with farming and forestry. Some species in this situation: *Armeria rouyana, Centaurea rothmalerana, Halimium verticillatum*.

- in rupicolous species is common to occur sporadically in restricted areas, and with fragmented populations (e.g. *Antirrhinum lopesianum Armeria Sampaioi, Murbeckiella pinnatifida* subsp*. herminii, Pseudarrhenatherum pallens*). For some rupicolous species their conservation will be especially dependable of the conservation of their habitats.

- in the group of species associated with humid soils or temporary ponds, there are several cases of populations becoming rare, with localized occurrences, fragmentation, or low number of individuals. Their association with very specific ecological conditions makes these species highly dependable on the strict maintenance of their habitats and on the availability of soil water. Some species in this situation: *Juncus valvatus, Thorella verticillatinundata*.

- riparian species are highly dependent on the preservation of river banks wilderness and topography, so conservation measures should prevent impacts associated with regulation and cleaning of water courses, waterworks and pollution. Some species in this situation: *Festuca duriotagana, Myosotis retusifolia*.

- the species with forest ecology, particularly related to oak forests, have in common a decrease of the occupied area, which is related to the change and degradation of forest habitats, being necessary to ensure the conservation of these habitats, and promote a forest management compatible with the conservation of the target species. Some species in this situation: *Asphodelus bento-rainhae, Veronica micrantha*.

The plant species with worst prospects[9] (bad prospects - 14 species) are usually very localized and / or with diminished populations, for which there are still unfavourable trends in the range and / or population and / or occupied area. It should be highlighted that many of these species occupy minimal areas (in several cases less than 10 km^2) and their range is extremely limited (often ≤ 100 km^2). The vulnerability of these species to any threat is particularly great because any changes in conditions in these restricted areas may result in the destruction of a significant portion of the population or even, as for example in species with a single location, cause their extinction. However, given the restricted nature of their distribution, these species are likely to be subject to conservation actions targeted and focused.

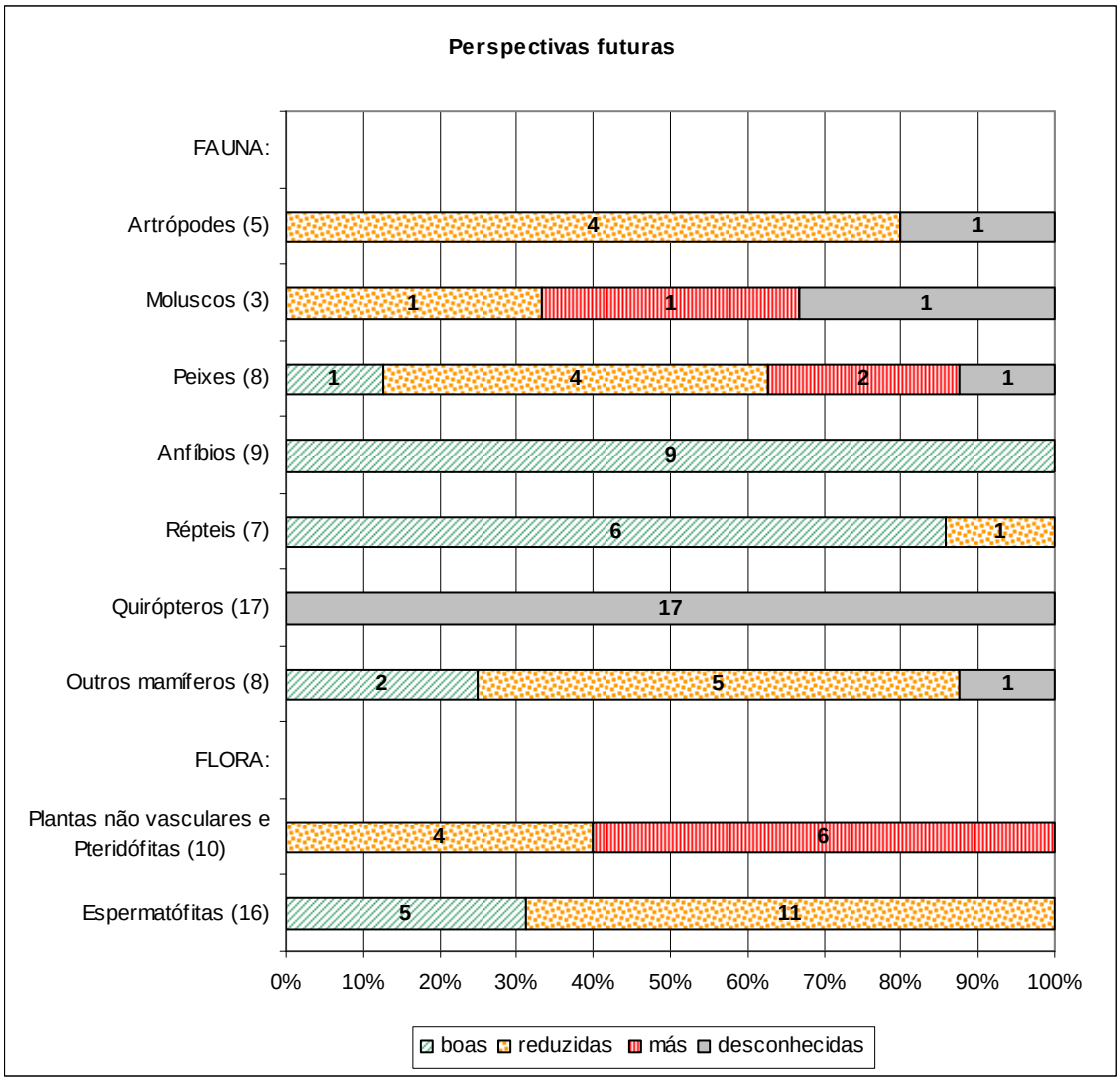
[9] *Bryoerythrophyllum campylocarpum, Cladonia* spp. *(*subgen. *Cladina*), *Riella helicophylla, Lycopodium clavatum, Chaenorhinum serpyllifolium* subsp*. lusitanicum, Eryngium viviparum, Leuzea longifolia, Marsilea quadrifolia, Murbeckiella sousae, Narcissus fernandesii, Narcissus humilis, Picris willkommii, Plantago algarbiensis, Plantago almogravensis.*

27 species of flora which are non-endangered or abundant or have a wide area of distribution (e.g. *Narcissus bulbocodium, Ruscus aculeatus, Arabis sadina, Scilla beirana, Festuca elegans, Santolina impressa, Thymus villosus* subsp. *villosus*) present good prospects.

Finally it is important to underline that no bryophytes or ferns present good prospects.

Atlantic Biogeographic Region

The result obtained for animal species shows that, according to the criteria used, 31.6% have good prospects, with the various groups contributing on a different way for such an outcome. However, it should be noted that the same percentage of species in this group (31.6%) fall in the class of bad or poor future prospects.



Analysis of future prospects, by taxonomic group and habitat types (Good - good prospects to survive or thrive / Poor - species will face difficulties unless conditions change / Bad - there are serious threats to the long-term viability of the species)

When compared with the Mediterranean region, there is an increase of species of fauna with future prospects unknown (22.2% in the Mediterranean region and 36.8% in the Atlantic), which was expected, given the poorer knowledge of the populations and habitats this region. On the other side, there is a significant reduction of species with poor future prospects in this biogeographic region, from 16.7% (15 species) in the Mediterranean region to 5.3% (3 species) in the Atlantic region (only the *Margaritifera margaritifera* and *Rutilus arcasii* are common to both biogeographic regions and in both prospects are bad). The other species with poor prospects only exists in the Atlantic region and it is the salmon *Salmo salar*. All other relevant species are unique to the Mediterranean region, except for the horseshoe bat *Rhinolophus euryale* which also occurs in the Atlantic region but for which future prospects are unknown).

For invertebrates, the mussel *Margaritifera margaritifera* is the species with worst prospects (bad future prospects) because the population is extremely small and there is no evidence of recent recruitment. It is a species very sensitive to habitat changes and may even disappear in this biogeographic region if concrete measures to reverse this situation are not applied.

Beetles *Lucanus cervus* and *Cerambyx cerdo* are species whose future prospects were considered poor, with their preservation depending on mature native forest.

The butterflies *Callimorpha quadripunctaria* and *Euphydryas aurinia* are also present a slight decline in what concerns habitat and population (poor future prospects). The implementation of measures is crucial to ensure their conservation.

Regarding fish, salmon *Salmo salar* and *Rutilus arcasii* are those with the worst prospects. The salmon has a very restricted distribution and a sharp decrease in the number of mature individuals and the occupied area has been observed, in particular the spawning area, requiring the strengthening of conservation measures. *Rutilus arcasii* is a species with a very limited and fragmented distribution, with conservation measures needed to reverse this situation. Only *Barbus bocagei*, present in almost all river basins and with records of occurrence in reservoirs, has good future prospects.

Amphibians and reptiles are the groups with better prospects, since their resilience and adaptation to environmental changes and to threatening factors are exceptionally wider when compared with other groups of vertebrates. The main reasons that allow this uneven resilience are the great reproductive capacity and the distribution and abundance of their populations.

The tortoise *Emys orbicularis* is the only species that presents a more delicate situation, with poor future prospects. This species has a small area of occurrence, highly fragmented, and is suffering a sustained reduction of habitat and likely of the number of individuals.

However, it should be noted that other species which have both a high degree of population fragmentation, small distributions (and range) and reduced reproduction capacity (e.g. snake *Coronella austriaca* and viper *Vipera seoanei*) might turn in a critical situation, if the factors of threat remain.

With regard to bats, given that there is no sufficient data to assess their distributions, populations, and trends, it is not possible to conclude on their future prospects in this biogeographical region.

Also in the group of mammals, the otter *Lutra lutra* and *Genneta genneta* are species with widespread distributions and stable trends, being the ones with good future prospects.

In this biogeographical region the population and habitat of the wolf *Canis lupus* suffered slight decreases, so that future prospects were considered poor. However in recent years some conservation measures for this species have been implemented with positive results, but additional measures are necessary.

Also for the Pyrenean desman *Galemys pyrenaicus* (poor future prospects) there are already some conservation measures implemented, with positive results, but the moderate decrease of the population and its habitat imply the need to strengthen the conservation actions.

In the case of goat *Capra pyrenaica*, although the population has increased in recent years, its distribution and numbers are very small, turning the species very vulnerable to any stochastic event. It was considered that its future prospects are still poor.

For the wild cat *Felis silvestris* the control of feral cats can play a very significant role on its future evolution of its, but currently its future prospects are considered poor.

For 26 species of flora it appears that the majority (80.8%) presents a worrying scenario. According to the criteria used, 57.7% of species could face difficulties of survival unless current conditions change (poor prospects) and 23.1% of the total is facing serious threats that could jeopardize its viability (bad prospects).

Regarding the 15 species of flora with poor prospects, they generally have a short range, in many cases a decrease of occupation area was observed and / or are affected by pressures with significant effects on their state conservation. A further detailed analysis may identify the following situations:

- The spermatophytes are species with various ecological characteristics (from pioneer communities to forest habitats), but many of these species occurs in highlands (e.g. *Armeria Sampaioi*, *Centaurea micrantha* subsp. *herminii*, *Iris boissieri*, *Thymelaea broterana*). Although these species occur in restricted mountain areas and present decreasing trends at various levels, they often occur in the Peneda-Geres, where a greater degree of protection is expected. The remaining spermatophytes are *Jasione lusitanica* (sandy dunes), *Arnica montana* (soils subject to intense flooding) and *Narcissus cyclamineus* (riparian habitats).

- On other group of species are included three ferns (*Culcita macrocarpa*, *Lycopodiella inundata*, *Woodwardia radicans*), while bryophytes are represented by genus *Sphagnum* (which in the Atlantic region includes 12 entities, comprising subspecies, varieties and forms). The bogs, habitats in which *L. inundata* and *Sphagnum* dominate, currently present a small occupation area and are subject to a set of threats (drainage, grazing, trampling, fire) which make their long term survival quite dubious as well as of the species that depend on them. The remaining ferns (*Culcita macrocarpa* and *Woodwardia radicans*), of very different ecological characteristics, have in common the fact that they occur in a very localized way (in the Atlantic region, and Portugal), with tiny areas of occupation and few individuals, that makes them particularly vulnerable to stochastic events.

The six plant species with poorer prospects (bad prospects) are generally very localized and / or with small population, for which there are still unfavourable trends concerning range and / or population and / or area occupied:

- It should be noted that it is in the groups of non-vascular plants and ferns where the situation is worst. In the case of ferns, *Lycopodiella cernua* and *Trichomanes speciosum* are species with a single site of

occurrence in mainland Portugal, which is extremely restricted (occupied area: 0.0002 km^2 and 0.00005 km^2 respectively.)

- The bryophytes (*Bruchia vogesiaca, Bryoerythrophyllum campylocarpum, Marsupella profunda*) are species with localized occurrence, two of them with only one site of occurrence in the Atlantic region.

It should be highlighted that the majority of these species occupies minimal areas, so their vulnerability to any threat is particularly high, since any changes in the ecological conditions of their restricted occurrence areas may lead to the destruction of a significant portion of the population or even, in species with a single location, cause their extinction. However, given their the restricted distribution, these species are more likely to be subject to targeted and focused conservation actions.

- Finally, the genus *Cladina* includes six species of lichens that were analyzed together. However five of these species, which were historically recorded in this biogeographic region, have no been recently observed, meaning that probably they are under a serious danger. It should be noted that the genus *Cladina* is extremely sensitive to habitat changes, being an indicator of non disturbed areas.

A special attention should therefore be devoted to this group of plant species with more worrisome prospects, whose survival in this biogeographical region (and in some cases in Portugal) may actually depend on measures that can bel implement in a short / medium term.

It should be noted also that four species have worst prospects in the Atlantic region than in the Mediterranean region: *Bruchia vogesiaca*, *Marsupella profunda Centaurea micrantha* subsp. *herminii* and *Festuca summilusitana*.

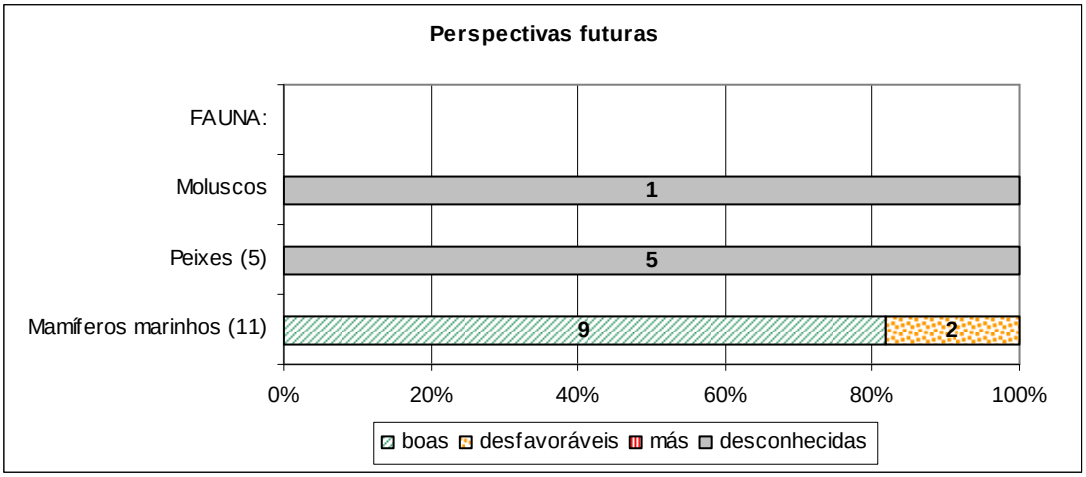
On the other hand, good future prospects are registered in no endangered species, abundant and with wide distribution areas (*Narcissus bulbocodium, Narcissus triandrus, Ruscus aculeatus, Scilla beirana* and *Festuca elegans*).

Marine Atlantic Biogeographical Region

It should be emphasized that the future prospects for the marine mammals were considered good for nine species (81.8% of all marine mammals). Despite the size of populations present in Portuguese waters being unknown, the absence of serious threats or high levels of incidental mortality that could endanger the survival of species means that the prospects of survival and prosperity can be considered as good. However conservation measures are necessary, in particular actions oriented against by-catches by fishing gear. It needs to be highlighted that these species have very large areas of distribution, being also dependent on the conditions found in other regions, so that measures taken by Portugal may not be sufficient to ensure their survival in the long term.

Regarding the bottlenose dolphin *Tursiops truncatus*, in general a species for which the prospects are good, it is noted that the maintenance of the resident population in the river Sado estuary will depend mainly on an appropriate management of whale watching activities and maritime traffic, where the main feeding areas should be preserved.

The whale *Balaenoptera acutorostrata* and the porpoise *Phocoena phocoena* present poor prospects. It is expected that the level of impact from human activities is maintained or that will increase, being necessary to implement several conservation measures, among them the reduction of incidental mortality by fishing gear and the recovery of feeding and breeding grounds.

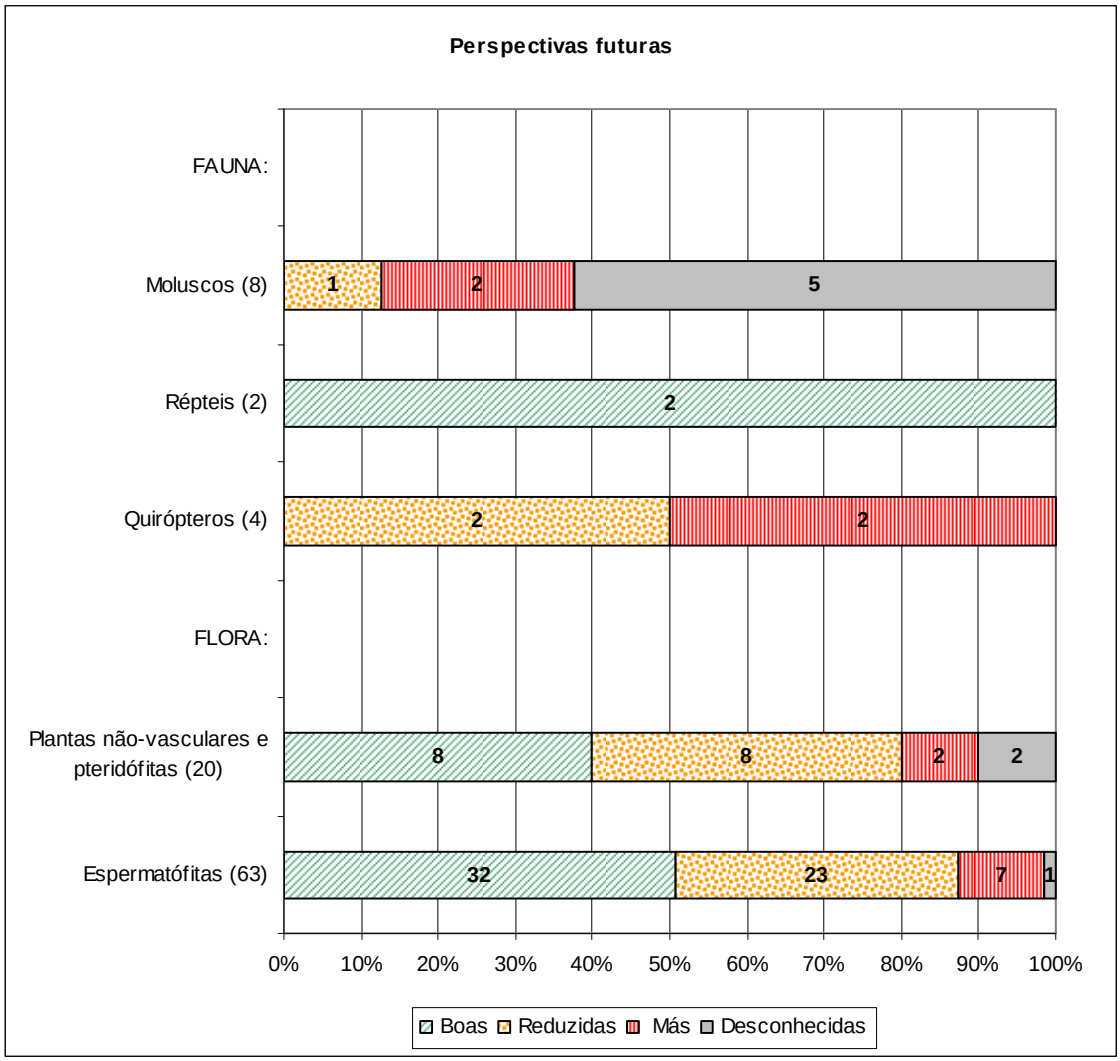


Analysis of future prospects, by taxonomic group and habitat types (Good - good prospects to survive or thrive / Poor - species will face difficulties unless conditions change / Bad - there are serious threats to the long-term viability of the species)

Macaronesian Biogeographical Region

The future prospects are unknown for five fauna species (35.7%), all of them terrestrial molluscs, and are bad (29%) for four species, two bats *Nyctalus azoreum* and *Plecotus austriacus*, and two molluscs *Discus guerinianus* and *Geomitra moniziana*) and (molluscs) and (bats). There are also three species with poor prospects (21%), namely the terrestrial mollusc *Caseolus commixta*, and two bats *Nyctalus leisleri* and *Pipistrellus maderensis*. There are only two species with good prospects (14%), *Lacerta dugesii* and *Tarentola bischoffi*.

Regarding flora, for 40 species (48.2%) prospects are good, for 31 species (37, 3%) prospects are poor and to nine species (10.8%) prospects are bad. For three species (3.6%) future prospects are unknown.



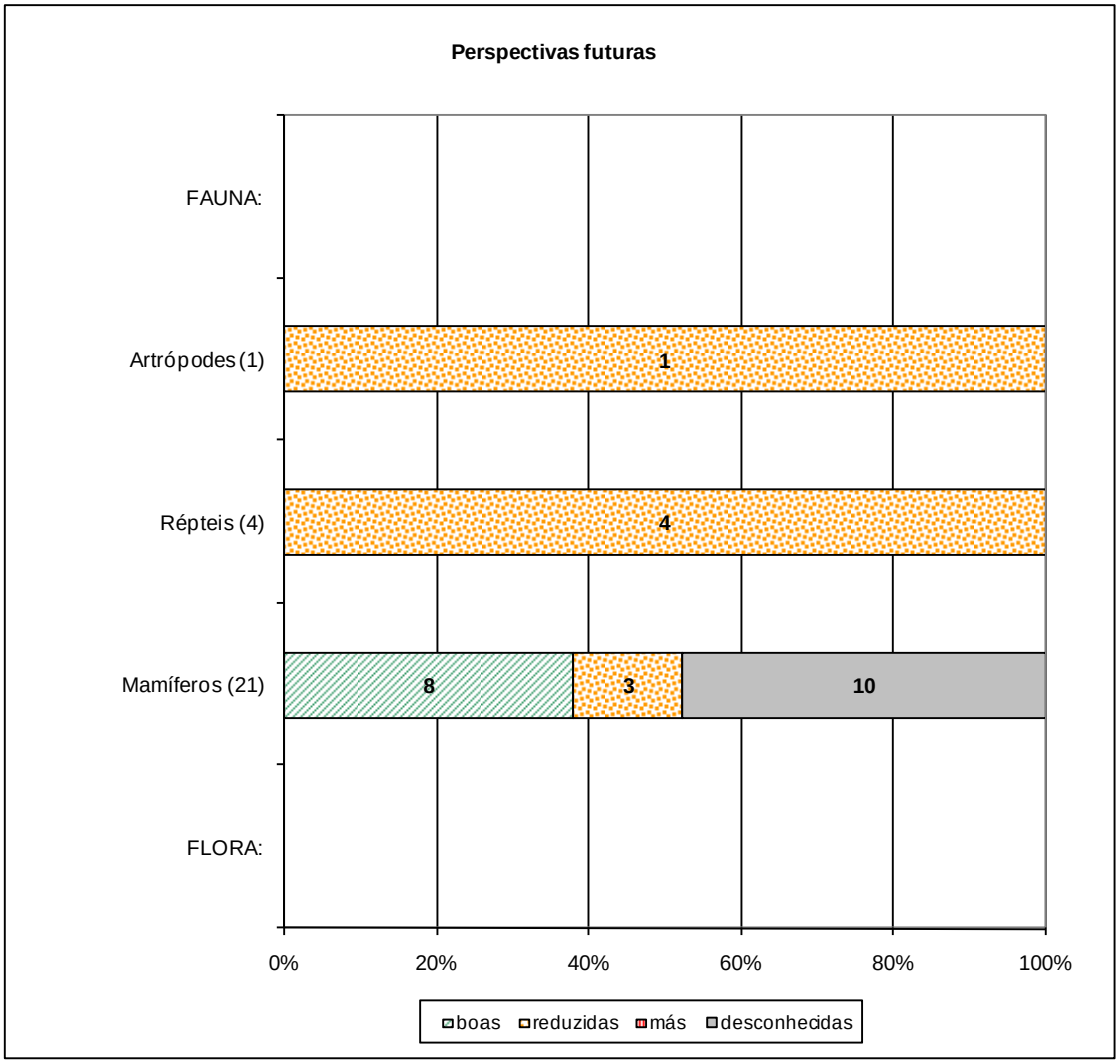
Analysis of future prospects, by taxonomic group and habitat types (Good - good prospects to survive or thrive / Poor - species will face difficulties unless conditions change / Bad - there are serious threats to the long-term viability of the species)

Marine Macaronesian Biogeographical Region

Future propects for eight of the 26 fauna species are good (*Delphinus delphis, Globicephala macrorhynchus, Grampus griseus, Monachus monachus, Pseudorca crassidens, Stenella coeruleoalba, Stenella frontalis, Tursiops truncatus*), all being marine mammals.

Eight species have poor prospects, namely, 3 mammals (*Balaenoptera musculus, Megaptera novaeangliae, Physeter macrocephalus*), 4 reptiles (Caretta caretta, Chelonia mydas, Dermochelys coriacea and Eretmochelys imbricata) and an arthropod (Scyllarides latus).

For the remaining 10 species of marine mammals, future prospects are unknown.



Analysis of future prospects, by taxonomic group and habitat types (Good - good prospects to survive or thrive / Poor - species will face difficulties unless conditions change / Bad - there are serious threats to the long-term viability of the species)

3. Main threats (and their drivers or causes) to important biodiversity components

Mediterranean Biogeographical Region

Currently the most frequent pressures on fauna species are linked to pollution and other impacts from human activities (including regularization of water courses), agriculture and forestry and human induced changes in water conditions by (landfill, drainage, hydrographic changes).

For flora species or natural habitats, the current pressures most often observed are associated with urbanization, particularly in relation to urban expansion and urban-tourism, which impact has directly resulted in the destruction of natural values (e.g. *Chaenorhinum serpillyfolium* subsp. *lusitanicum*, or the habitat of fixed dunes with herbaceous vegetation - grey dunes).

The pressures "trampling" and "over utilization" were often observed, both for flora species and natural habitats. It is clear the link between this pressure and habitats with low resilience, and also that many of the habitats (and species) affected by this pressure are characteristic from littoral areas where there is often a large human pressure.

As already mentioned, many of fauna species in the Habitats Directive Annexes are associated with watercourses (fishes, molluscs, odonates, amphibians, bats, several mammals and reptiles), which explains the substantial pressures related to water pollution - both resulting from the discharge of untreated effluents and of the increased use of pesticides and fertilizers in agriculture - and the destruction of native riparian vegetation and the surrounding areas of streams. Also the construction of dams, changes in natural flow regime, drainage and land filling of wetlands, and over exploitation of water resources are often referred as current pressures on these species.

In the case of natural habitats, there is also a significant incidence of pressures related to water pollution, particularly on coastal habitats / halophilous vegetation and on freshwater habitats.

The agriculture intensification, associated with excessive use of fertilizers and pesticides, can cause reduction of preys (referred to all bats) or host plants (affecting butterflies) or be a source of diffuse pollution (which affects different groups, such as fish, odonates, molluscs, amphibians, bats, several mammals and reptiles associated with water courses). Moreover, it can lead to fragmentation of fauna species habitats.

The destruction / replacement of native forest is responsible for reducing the refuge and feeding areas (bats, beetles) and for the fragmentation of habitat for many fauna species.

Also to be noted is the destruction and disturbance of shelters, particularly severe in critical periods such as breeding and hibernation is mentioned for cavernicolous bats.

Afforestation can also be a pressure for flora species (e.g. *Anarrhinum longipedicelatum*, *Centaurea vicentina*).and natural habitats, especially when involving change of land use. It is common that this pressure is linked with the plantation of alien species such as eucalyptus.

In what relates to agro-forestry and pasture, grazing has been often noted as a pressure on several natural habitats (e.g. bogs and several dune and forest habitats).

Forest fires also constitute a pressure with a significant weight in all groups (fauna, flora and natural habitats).

The expansion of non-native alien species, which compete with native species for resources (space, food, etc.) and which sometimes are responsible for the introduction and spread of diseases (turtles, fishes, shellfish) is also to be mentioned.

Of the '163' worst invasive alien species identified by the EEA/SEBI2010 Expert Group on trends in invasive alien species, 34 are present in Portugal. This equates to between 0.25 and 0.7 species per 1000 km^2.

The expansion of non-indigenous fauna species is often referred. It may adversely affect the native fauna through competition (both territorial and food), predation or it may act as a route of spread of pathogens. The expansion of non-native invasive plants can also affect the native host plants of some species such as butterflies.

Regarding flora it is important to refer to the natural processes of ecological succession which constitute a particular pressure by leading to the replacement of communities of pioneer species or species which occur on initial stages of the ecological succession (e.g. *Festuca brigantina*, *F. henriquesii*).

Atlantic Biogeographical Region

The pressures associated with agriculture, forestry and pollution and other human impacts / activities (including regularization of water courses) are the most observed for fauna species, presenting an inverse order of importance against the Mediterranean region. Human-induced changes in water conditions, such as landfills, drainage, and modification of hydrography also have a significant weight here.

Excessive use of fertilizers and pesticides associated with agricultural intensification may cause a reduction in preys (referred for all bats) or host plants (affecting butterflies) or be a source of diffuse pollution (which affects different groups as fish, odonates, molluscs, amphibians, bats, mammals and reptiles associated with water courses). Moreover, the intensification of agriculture can lead to fragmentation of fauna habitats (e.g. *Euphydryas aurinia*, bats). Some agro-forestry-pastoral uses, namely bush fires can be a pressure on some flora species (e.g. *Narcissus pseudonarcissus* subsp. *nobilis*), especially when very frequent, and grazing has often been noted as a pressure on several natural habitats (e.g. peat lands).

The destruction / replacement of native forest is responsible for reducing the refuge and feeding areas (bats, beetles) and for fragmentation of fauna habitats (e.g. wolf, beetles). In terms of flora species (e.g. *Culcita macrocarpa*) forestry is a very significant pressure, very often registered, particularly in relation to afforestation with alien species.

As already mentioned, many of fauna species in the Habitats Directive Annexes are associated with watercourses (fishes, molluscs, odonates, amphibians, bats, several mammals and reptiles), which explains the substantial pressures related to water pollution - both resulting from the discharge of untreated effluents and of the increased use of pesticides and fertilizers in agriculture - and the destruction of native riparian vegetation and the surrounding areas of streams. Also changes in natural flow regime, drainage and land filling of wetlands, and over exploitation of water resources are often referred as current pressures on these species.

Similarly, in the case of species of flora, in the Atlantic region the pressures due to drainage have a significant weight, which is related with the highest proportion (against the Mediterranean region) of species dependent on peat lands biotopes (e.g. *Bruchia vogesiaca*).

On natural habitats, there is a significant incidence of pressures related with water pollution, particularly on coastal and halophilous habitats, on freshwater habitats and also on bogs and peat land habitats.

The expansion of non-indigenous species of fauna is often referred as producing negative effects on fauna species through competition (both territorial and food) and predation or as a route of spread of pathogens (turtles, fishes, shellfish). In the Atlantic region the expansion of invasive alien plants is a frequent pressure to native flora (e.g. *Trichomanes speciosum*), often related to invasion by *Acacia* spp. It may also affect native host plants of some fauna such as butterflies.

Given the characteristics of this biogeographic region, forest fires have obviously a smaller weight than in the Mediterranean region, although they are referred as a pressure on a reasonable set of species, whether flora or fauna.

It should be also mentioned that the pressure "trampling, overuse" is very often referred in relation to natural habitats. The combination of this pressure with habitats with a low resilience is common, but it is important to note that about half of habitats affected by this pressure are coastal habitats, areas where often there is a greater human pressure.

The collection of plant species is a common pressure for several species of attractive flowering and can affect the most vulnerable populations with reduced population size (e.g. *Iris boissieri*, *Narcissus cyclamineus*).

Regarding flora and natural habitats it also needs to be mentioned the pressures of urban expansion and infra-structure building, which result in direct destruction (e.g. *Jasione lusitanica*, *Sphagnum* spp., Fixed dunes with herbaceous vegetation – grey dunes).

Regarding flora it is important to refer to the natural processes of ecological succession which constitute a particular pressure by leading to the replacement of communities of pioneer species or species which occur on initial stages of the ecological succession (e.g. *Festuca summilusitana*).

Marine Atlantic Biogeographical Region

Given the environment in question and specificity of the species, it is expected that the main current pressures are related with the incidental capture and water pollution.

The bycatch is one of the greatest current pressures on marine mammals. 50% of the mortality of all cetaceans found along the Portuguese coast may be due to accidental catches in fishing gear.

The pollution by organochlorine compounds and heavy metals is also a current pressure. The effect of the accumulation of contaminants, namely in the food chain, should be taken into account, since it can cause a decline in the reproductive capacity, as well as be responsible for weakening the immunitary system.

Another pressure not negligible, with a gradual increase in recent years is the disturbance caused by whale watching vessels. This activity may be responsible for changes in breathing and behavioural

patterns that in the long term, and with the increase of this activity, might have a negative impact on the breeding success of these species.

It should be noted that in recent years intensive fishing has caused a sharp decline in some fish stocks worldwide, which may involve a decrease in the preferred prey of marine mammals.

Some natural habitats (sandbanks and reefs), as a consequence of their wide occurrence, are affected by virtually all the pressures on the marine environment. In the specific case of sea caves the known pressures are pollution and visitation.

Macaronesian Biogeographical Region

Form the set of pressures affecting fauna of the Macaronesian region (a total of 14 species analyzed), it is important to highlight those arising from agriculture and forestry, pollution and other human impacts / activities, as they affect the majority of species.

Concerning agriculture and forestry, the use of pesticides is the main pressure for all the bat species and terrestrial molluscs.

Other pressure deserving to be mentioned is mining and other extractive activities, since the underground exploitation had once affected the land mollusc *Idiomela subplicata*, an endemism of the Baixo Islet from Porto Santo island.

There are also other pressures that were significant in the past and that remain as threats to some species. Pollution and overutilization and trampling of habitat were the most observed pressures for terrestrial molluscs, while disturbance affects two bat species of the Macaronesian region, *Nyctalus azoreum* and *Pipistrellus maderensis*. Urbanization is also a major pressure on terrestrial molluscs and bats. In the case of the former, poor dispersal ability and small habitat area imply that any urbanization projects, however small, have a very significant impact over their communities and populations.

Natural processes, including erosion, are particularly important for some species of terrestrial molluscs, being a limiting factor to *Idiomela subplicata*. Natural disasters and parasitism affect mostly affect bat species.

As future threats (not shared by all species analyzed), we highlight agriculture and forestry, transport and communication and natural processes, because they are the ones that may have a greater impact on the future of the species concerned.

It is also expected that threats from construction of roads, lanes, trails, highways, and bridges and / or the installation of golf courses, will mostly affect species of terrestrial molluscs. This is particularly relevant for two species of terrestrial molluscs on the island of Porto Santo, *Discula leacockiana* and *Leiostyla corneocostata*, because the construction of a golf course, with the introduction of invasive species, as well as the attraction of potential predators (birds) may endanger the populations of these two species.

Also impacts from tourism and leisure activities and motorized vehicles (also including the opening of new trails, the collection of live specimens and the excessive pressure on habitat) are important threats to three species of terrestrial molluscs of the island of Porto Santo *Caseolus calculus*, *Discula leacockiana*, and *Idiomela subplicata*.

Finally, the fertilization and the artificialization of forests are threats essentially to the terrestrial snail *Leiostyla corneocostata*, especially due to the nearby golf resort in Porto Santo island, while deforestation has a major significance for the bat *Plecotus austriacus*.

For flora and natural habitats the most observed current pressure or expected future threat is "natural processes", followed by "transports and communications" and "agriculture and forestry".

Under "natural processes", the pressures / threats "inter-specific floral relations" and "biocenoses evolution" were the most reported for flora and natural habitats, respectively. It is important also to highlight that invasive alien species, already spontaneous, and with a strong competitive ability are a very significant pressure / threat, especially to an island.

It should be referred that agricultural and forestry activities, grazing and trampling by cattle and goats, forest management, afforestation (planting with *Cryptomeria japonica* in the Azores), the opening of roads and trails are the pressures and threats most frequently mentioned as affecting flora and natural habitats.

These pressures / threats of natural or human origin affect particularly flora species with low dispersal ability, with very limited distribution area and with very small and fragmented populations, such as *Ammi trifoliatum, Asplenium hemionitis, Azorina vidalii, Dracaena draco, Chaerophyllum azoricum, Euphrasia* spp., and *Lotus azoricus*.

For natural habitats many identified pressures / threats are particularly important to heaths and woods (Macaronesian endemic woods), grasslands (Macaronesian mesophyllous meadows), bogs and forests, which are located in areas and / or altitudes with significance to agro-forestry and livestock activities (mainly in the Azores). In the Autonomous Region of Madeira, given the removal of livestock that has occurred between 1994 and 2003, some of these habitats are less subject to pressures / threats such as grazing and direct or marginal trampling.

Given the location of coastal and halophyte habitats, the most often reported pressures are related with tourism and leisure (including recreational fisheries, visitation, establishment of bathing sites and infrastructure building). The future threats most often mentioned are mainly natural processes like erosion, natural disasters (such as landslide), and biocenoses evolution (such as invasion by exotic species).

In relation to freshwater habitats it is important to note that changes in watersheds and hydrographic conditions, with implementation of pastures, roads and pathways that lead to changes in the water regime and increase local pollution and nutrient loading in ponds, is an important pressure / threat leads to degradation of natural habitats, with impact also on associated avifauna communities.

Marine Macaronesic Biogeographical Region

As regards fauna, the pressures associated with pollution, tourism and leisure, transport and communications and fishing activities are those that potentially could have a direct impact on a greater number of species. Moreover, pollution per se, was identified as the main pressure for 19 of the 26 species analyzed, followed by tourism activities, which affect 18 species. Shipping seems to be particularly worrisome for 11 species (seven marine mammals and four reptiles), particularly *Balaenoptera acutorostrata*, *Megaptera novaeangliae* and *Caretta caretta*. Commercial fishing affects primarily four species of marine reptiles (*Caretta caretta, Chelonia mydas, Dermochelys coriacea* and

Eretmochelys imbricata) and two marine mammal species, *Balaenoptera acutorostrata* and *Hyperoodon ampullatus*.

Concerning natural habitats, pressures were identified for shallow inlets and bays, reefs and sea caves submerged or partially submerged, for which natural processes, including earthquakes and volcanic activity, are the main pressure, while erosion can also have an important role, particularly in shallow inlets and bays, and sea caves.

Pollution (water pollution and other forms or mixed forms of pollution), and other pressures, such as seabed silting due to erosion provoked by heavy rains were the second most important factors for three habitats, soon followed by tourism activities, where the sport and leisure facilities and water sports play an important role. It is to be referred that for the habitat shallow inlets and bays, the human-induced change of water conditions, including through land reclamation and structures for coastal protection present themselves as the main source of pressure.

Concerning future threats there are four categories that affect the fauna of the Marine Macaronesian region: pollution, as the most important, fishing, tourism and leisure and transport and communications, as the least important. These threats are the ones that potentially will have a greater impact on the 26 assessed species.

Pollution, in a broader sense, affects 19 of the 26 studied species, all marine mammals, with the noise pollution being relevant to 20 marine mammal species. Air water and soil pollution is particularly harmful to the dolphin *Stenella coeruleoalba*.

Marine reptiles seem to be particularly vulnerable to forms of mixed pollution, identified as the main threat for this fauna group. The release of plastic bags is a leading cause of death of sea turtles.

Tourism and associated leisure activities are a threat to 14 of 26 species, all marine mammals, shipping is the main threat to 12 species (marine mammals and reptiles), such as *Physeter macrocephalus, Eubalaena glacialis, Megaptera novaeangliae*, and *Balaenoptera physalus* and the turtle *Chelonia mydas*.

Also it is important to mention that commercial fishing was identified as the main threat to 8 species of marine mammals.

Regarding natural habitats, natural processes, through erosion and consequent landslides, volcanic activity, earthquakes, tsunamis and natural fires have been identified as a threat common to four habitats examined.

The pollution in general and water pollution in particular, in the form of seabed silting due to heavy rains and fuel leaks from the intense ship traffic have a significant impact. The sports and leisure facilities and water sports, harbour areas, and sand extraction from the seabed complete the list of threats identified for all the habitats studied.

In the particular case of the habitat reefs, the human-induced change in water conditions, including through land reclamation, and pollution is considered the main threat. For the habitat sandbanks oil spills are of particular relevance.

Chapter II - Current Status of National Biodiversity Strategies and Action Plans

1. A brief description of the NBSAP, identifying the main or priority activities;

Biodiversity loss continues to occur at a worrying rate over recent decades. To halt the loss of biodiversity by 2010 was one of the EU objectives, adopted at the the EU Council, at Gothenburg in June 2001 and to which Portugal wascommited.

In May 2006, the European Commission adopted the Communication "Halting the loss of biodiversity by 2010 – and beyond - Sustaining ecosystem services for human welfare. An ambitious EU Biodiversity Action Plan (BAP) was adopted by the Commission in 2006 for achieving this objective. This Plan identifies four main areas of policy and defines 10 key targets for halting the loss of biodiversity by 2010, which are translated into more than one hundred and fifty different priority actions to be implemented at Member States and Community level. This Communication acknowledges the need for a concerted effort by all Member States and sectors of society to achieve the goal above.

In Portugal, Law No. 11/87 of April 7, gave the Government the responsibility for drafting the National Strategy for the Conservation of Nature and Biodiversity (ENCNB)[10] as an instrument of policy integration for Nature Conservation with other relevant sectoral policies. In addition, Decree-Law No. 21/93 of June 29 states as well, the need to provide the Contracting Parties to the Convention on Biological Diversity (CBD) of a strategy for the Conservation of Biological Diversity. On 11 October 2001, the Council of Ministers adopted Resolution No. 152/2001, the National Strategy for Nature Conservation and Biodiversity (ENCNB), which is a strategic tool of great national importance, namely to achieve the commitment of halting the loss of Biodiversity by 2010.

ENCNB is in force between 2001 and 2010 and has three general objectives:

- To conserve nature and biodiversity, including the notable elements of geology, geomorphology and paleontology;
- To promote the sustainable use of biological resources;
- Contribute to achieving the aims of the processes of international cooperation in the area of nature conservation in which Portugal is involved, in particular the objectives of the CBD, including biodiversity conservation, sustainable use of its components and fair and equitable sharing of benefits arising from utilization of genetic resources.

These objectives are materialized through ten Strategic Options (OPE), each yielding a set of Directives for Action (DA), some with established deadlines and actors.

Strategic Option 1 - promote scientific research and knowledge about the natural heritage as well as monitoring species, habitats and ecosystems;

Strategic Option 2 - Establishing the Fundamental Network for Nature Conservation and the National System of Classified Areas, integrating in the latter the National Network of Protected Areas;

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10 National Strategy for the Conservation of Nature and Biodiversity - Resolution of the Council of Ministers nº 152/2001, of 11 October http://dre.pt/pdf1sdip/2001/10/236B00/64256451.pdf

Strategic Option 3 - promoting the valorization of protected areas and ensure the conservation of natural, cultural and social heritage;

Strategic Option 4 - Ensure the conservation and enhancement of natural heritage sites and of Sites and Special Protection Areas in the process of Natura 2000;

Strategic Option 5 - to develop throughout the country specific actions for the conservation and management of species and habitats as well as safeguard and enhancement of landscape and of the notable elements of geological, geomorphological and paleontological

Strategic option 6 - Promote the integration of Nature Conservation policy and the principle of sustainable use of biological resources in land use planning policy and in the various sectoral policies;

Strategic Option 7 - Improve coordination and cooperation between central, regional and local administration;

Strategic Option 8 - Promote education and training in conservation of nature and biodiversity;

Strategic Option 9 - guarantee information, awareness-raising and public participation, and mobilize and encourage civil society;

Strategic Option 10 - Enhancing international cooperation.

As provided in the ENCNB, its implementation should be subject to an evaluation every three years, in its multiple facets, based on a report prepared with the contributions of the various sectoral ministries under the coordination of the Institute for Nature Conservation (now Institute of Nature Conservation and Biodiversity - ICNB), and adopted by the Interministerial Coordination Committee (CCI), subject to prior opinion of the National Council for the Environment and Sustainable Development (CNADS), where other relevant stakeholders are present, including environmental non-governmental organizations (ENGO).

In terms of monitoring the ENCNB it is worth noting that the CCI, established by Resolution of the Council of Ministers No. 41/99 of 17 May, aims precisely to "ensure cooperation in implementing the ENCNB and promoting its integration as far as possible and as appropriate, in the various plans, programs and sectoral policies, in accordance with Article 6 of the CBD”.

It is forseen that the comprehensive review of ENCNB occurs in in the near future, based on an evaluation process and public discussion.

Finally it is worth noting that the ENCNB is "a living document, open to adjustments to the evolving conditions and to the evaluation of its implementation".

2. Overview of progress made in the implementation of priority activities of the ENCNB

ENCNB Strategic Option 1

Promote scientific research and knowledge about the natural heritage as well as monitoring species, habitats and ecosystems

This option is a keystone to implement policies for nature conservation and biodiversity and of strategic importance in the context of development policy in any country.

One of the three most important aspects for the implementation of this OPE, still to be completed, is the draw up of a framework of priority projects in the field of nature conservation and biodiversity, in order to guide the management of the resources available at the national level, namely financial resources. This frame of reference, whose first prepared draft did not have the desired result, is of great importance not only for planning/scheduling of ICNB activities, as well as other agencies with competences in this area.

A second aspect corresponds to the lineup of studies and projects for nature conservation and biodiversity to be developed or promoted by the ICNB in accordance with the ENCNB and in accordance with the above mentioned framework. This lineup should include a comprehensive action plan of the ICNB. It should be noted that the 2002 ENCNB points to the compilation of this plan. In the Autonomous Regions of Madeira (RAM) and Autonomous Regions of Azores (RAA) a comprehensive action plan towards this objective was never developed.

However one can not fail to mention the considerable number of studies and projects, promoted and supported in mainland Portugal for various public (Ministry of the Environment, Land Use Planning and Regional Development - MAOTDR, Ministry of Agriculture, Rural Development and Fisheries – MADRP, and Ministry of Science, Technology and Higher Education - MCTES) and private institutions as well as in the Autonomous Regions, many of whom are available for consultation in the portals of different entities, and respond to many of the goals set by ENCNB.

Moreover, the implementation of the Program of Investment for Scientific and Technological Development in the area of nature conservation and biodiversity, as an essential tool to give body to what is the primary purpose intended by this strategic option - to enhance scientific research and obtain knowledge about the natural heritage – did not have an adequate implementation. Also worth of mention in this context is the establishment of a program as a result of a cooperation protocol between the ICNB and the Foundation for Science and Technology (FCT), and another protocol developed between the ICN (now ICNB) and the Council of Principals of Portuguese Universities (CRUP). While the former did not reach its purpose in particular due to inadequate funding, the latter, on the contrary resulted in several projects for trainees, mostly performed in protected areas and which have greatly contributed to increase the knowledge about the natural heritage of these areas. This information is available in the web portals of ICNB and MCTES.

Finally, it should be noted that the FCT and the ICN did not establish a cooperation program to promote the flow of information technical/scientific between the various services that are active in the area of nature conservation and biodiversity, as foreseen in the ENCNB and which was due to be implemented in 2002. However, the ICNB continued to develop its Information System on Natural Heritage (SIPNAT) currently under review and modernization. However it still does not provide an answer to all the needs identified during the preparation of ENCNB.

ENCNB Strategic Option 2

Establishing the Fundamental Network for Nature Conservation and the National System of Classified Areas, integrating in the latter the National Network of Protected Areas

Among the main actions implemented in order to accomplish this OPE, we can mention the establishment by Decree-Law No. 142/2008 of July 24, amended by Statement of Rectification no 53-A/2008 22 in September 2008, of the legal regime of nature conservation and biodiversity (in replacement of the Framework Law of Nature Conservation mentioned in the ENCNB), to ensure the integration and harmonious regulation of areas with different environmental protection statute and thus clarifying the applicable legal regime in situations of overlap and the scope of some of the existing figures in the legal framework.

This regime stands out the creation of the Fundamental Network for Conservation of Nature (RFCN), composed of the core areas for nature conservation and biodiversity integrated into the National System of Classified Areas (SNAC) and areas of continuity as the National Ecological Reserve (REN) the National Agricultural Reserve (RAN) and the Public Water Domain (DPH), the latter three helping to ensure proper connectivity of components of biodiversity across the territory. The same Diploma structures the SNAC, consisting of the National Network of Protected Areas (RNAP), the classified areas belonging to the Natura 2000 and the remaining areas classified under international commitments by Portugal.

Decree-Law No. 142/2008 of July 24defines strategic guidelines and its own instruments, targeting the following objectives:

i) ensure the conservation of natural values and promote their recovery and sustainable use;
ii) promoting nature conservation and biodiversity as a fundamental dimension of sustainable development, particularly through the integration of the policy of nature conservation and biodiversity in policy planning and the various sectoral policies;
iii) include criteria for nature conservation and biodiversity in social systems, business and economics;
iv) define and delimit a basic infrastructure for nature conservation, the aforesaid RFCN;
v) contribute to the achievement of the objectives of international cooperation in conservation of nature, particularly those defined in the Convention on Biological Diversity;
vi) to promote scientific research and knowledge about the natural heritage as well as monitoring species, habitats, ecosystems and geosites;
vii) promote education and training of civil society in nature conservation and biodiversity and provide information, awareness and public participation by encouraging visitation, communication, contact between the public interest and with nature;
viii) promote recognition by society of its assets, inter-generational, economic and social components of biodiversity and geological heritage

A new economic and financial regime of nature conservation and biodiversity has also been created, which is an essential component of this Decree given the importance that this scheme takes for reversing the cycle of deterioration and lack of investment in nature conservation and biodiversity in recent years. The establishment of the Fund for Nature Conservation and Biodiversity is designed to support nature conservation, particularly in the areas that comprise the RFCN, by allocating

resources to projects and investments needed and appropriate management of basic infrastructure needed.[11]

In this same line, the RAA (autonomous region of the Azores) undertook a review of the legal system of classification, management and administration of protected areas by the Azores Regional Legislative Decree No 15/2007/A of June 25.

On the other hand one should highlight the relevance of the overall review of the legal regime of the REN through Decree-Law No. 166/2008 of 22 August, which advocates measures aimed at "a better and clearer link between legal regimes, namely the protection of water resources, greater consistency and better susbstantiation in the process of delimitation, a more responsible involvement by the municipalities, a more objective identification of the conditions for viability of compatible uses and activities (Decree No. 1356/2008 of 28 November) and their mechanisms of authorization and the promotion of an economic-financial regime that positively discriminates areas integrated in the REN and enabling a fair and equitable compensatory equalization. "

The in-depth review of the policy on land use planning and urban development (dated 1999) through Decree-Law No. 316/2007, of 19 September, and Decree-Law No. 46/2009 of 20 February should also be mentioned as a major step to ensure global coherence between different sclae and different policy land use instruments, which are available in the National System of Territorial Information (SNIT).

With the same goal of centralizing information and to process it in an integrated manner, the RAA created a Geographic Information System (SIG) containing map information for all classified and protected areas in the Autonomous Region. The RAM, through the Regional Secretariat of the Environment and Natural Resources, is preparing the review of the boundaries of its Sites of Community Importance, whose information will be made available in GIS format.

In mainland Portugal the implementation of this OPE in what regards the definition of ecological "corridors" in the Instruments of Territorial Management (IGT) is implemented through the application of existing legal instruments and recently created ones, such as Decree Law No. 142 / 2008 of July 24, establishing the RFCN, Decree-Law No. 140/99 of April 24, republished by Decree-Law No. 49/05 of February 24, which transposes into national law the EU Birds and Habitats Directives, Decree-Law No. 316/2007 of 19 September, laying the foundations for the policy on land use planning and urban development.

In the RAA, the publication of the Azores Regional Land Use Plan (PROT-A) is underway. Among other areas, PROT-A covers complimentary ecological areas, which correspond to key biophysical structures that ensure continuity of ecological processes, with the water system, in its surface and groundwater components, assuming particular importance.

ENCNB Strategic Option 3

Promoting the valorization of protected areas and ensure the conservation of natural, cultural and

[11] Legal regime of nature conservation - Decee-Law n.º 142/2008, of 24 July http://dre.pt/pdf1sdip/2008/07/14200/0459604611.pdf Fund for the Conservation of Nature and Biodiversity - Decree-Law 171/2009 of 3 August http://dre.pt/pdf1sdip/2009/08/14800/0499104993.pdf

social heritage

As stated in the ENCNB the management of protected areas should focus on achieving the key objectives which led to its creation: promoting awareness, conservation, monitoring, dissemination of existing environmental values and also the preservation and promotion of cultural heritage and traditional activities with a view to promoting sustainable local development.

In this context, in relation to mainland Portugal and despite a considerable delay regarding the goal adopted in the ENCNB, it is noteworthy the publication of Protected Areas Land Use Plans (POAP) of the twenty five protected areas of national scope, and regarding two areas of local scope, established pursuant to Decree-Law 19/93 of January 23, the publication of POAPs is eminent.

In the RAA the Land Use Plan of Protected Landscape of Regional Interest of Vineyard Culture of the Pico Island was published and in 2009 started the preparation of Land Use Plans of the Natural Parks of Pico Island, Corvo and Graciosa . In the RAM, Land Use and Management Plans of the Protected Areas contained in the Regional Legislative Decree No. 5/2006/M, are being discussed.

In protected areas a number of measures were implemented for *in situ* and *ex situ* conservation, particularly targeting species and habitats regarded as prioritary for conservation, as well as inspections (both executed by Nature Vigilantes as the Teams for the Protection of Nature and the Environment in Specific Areas (EPNAZE) of the Office for the Protection of Nature and the Environment of the National Republican Guard (SEPNA/GNR)[12]) and monitoring, which in the latter case was sporadic. In these areas special attention was given to measures to prevent and combat forest fires and to the recovery plans for burned areas.

In 2005 Zonal Plans in Protected Areas were applied, within which are considered a range of support measures to agriculture in order to conserve the environment (see OPE 5). In 2009 a number of adittional zonal plans (now called Integrated Land Interventions) are under preparation.

For the marine environment the first steps towards the adoption of measures for the conservation and management of this ecosystem are being taken, especially through the implementation of the National Strategy for the Seas (ENM). Under the ENM, a new land management instrument was approved by the Interministerial Commission for Sea Affairs (CIAM) in the context of the National Program "Planning and Use of Maritime Space", the Maritime Areas Spatial Plan (POEM), that will contribute to the planning of maritime activities, including the delimitation of areas for the conservation of nature and biodiversity, in close liaison with coastal zone management.

Another action program approved by the CIAM is noteworthy, the project Network of Marine Protected Areas (MPA), which aims to implement a network of MPA as a means of safeguarding the key areas for conservation and management of living and non-living resources, incorporating the maritime part of continental Protected Areas - Natural Park of Ria Formosa (PNRF) Natural Park of Southwest Alentejo and Costa Vicentina (PNSACV); Natural Park of Arrábida (PNA); Natural Reserve of Berlenga (RNB); Natural Park of Northern Coastline (PNLN) and the areas to be classified under the extension to the marine environment of the EU Birds and Habitats Directives (Marine Important Bird Areas (IBAs) Life Project and Marbis Programme). Under the extension of Natura 2000 to the marine environment, the enlargement of already-designated Natura 2000 sites is planned, to include the mouths of several rivers (Minho, Lima, Vouga, Âncora, Mira and Guadiana). For the effective implementation of the goals of this network is essential to endow it with instruments for sustainable

12 http://www.gnr.pt/portal/internet/sepna/05.estrutura/estrutura.asp

use planning and management in order to enhance and protect its natural values, guaranteeing the connectivity of the areas, by promoting the effective implementation of the REN to the bathymetric of 30m, and upon the review of POOC by including appropriate measures in them.

In the Autonomous Regions, in order to improve integrated planning and management of marine areas in the region of Macaronesia, we highlight the projects MARÉ and OGAMP "Planning and Management of Marine Protected Areas" which had as main objective the development of Integrated Management Plans for Coastal and Marine Areas, including those encompassed in NATURA 2000. Also important were the MARMAC project, which had as its goal the promotion and enhancement of AMPs, the "PLACON" aimed at drawing up contingency plans for marine pollution and last but not least the project "SIGMARMAC" on a georeferrenced information system of marine resources in the region of Macaronesia.

In protected areas, both on the Continent and in the Autonomous Regions, numerous awareness-raising and environmental education actions were promoted and developed, aimed at raising public awareness for the values of these areas and at promoting their sustainability, as was foreseen in the ENCNB. However, these were not drawn up in conjunction with the ENGOs.

For the RNAP, in mainland Portugal, a Communication and Visitation Program was elaborated. Through its implementation the conditions of visitation are improved in an integrated and sustained manner, in view of the recreational and environmental awareness aspects and simultaneously perfecting the current model of serving the public. Also in this regard and both in the mainland and in the Autonomous Regions significant investments were undertaken in optimization and/or creation of infrastructures and of promotional material for these areas.

The Communication and Visitation Program was created within the context of the development of the National Program of Tourism of Nature (PNTN), created in 1998, which results from a pioneering partnership in Portugal between the State Secretariats of Environment and Tourism, and targets the sustainable development of protected areas. A noteworthy effort has been taken in relation to licensing of environmental activities and identification of pedestrian paths and trails. The key role of sports in nature charts, developed for each protected area, should be highlighted. Up until the moment of elaboration of this report there were sports in nature charts published for the Natural Parks of Serras de Aire e Candeeiros (PNSAC) and Sintra-Cascais (PNSC). The Autonomous Regions of Azores and Madeira published its Tourism Management Plans respectively in August 11, 2008, through the Regional Legislative Decree No. 38/2008/A, and August 29, 2002, through the Regional Legislative Decree No. 17/2002.

In mainland Portugal and in the RAA a uniform signalling system for the protected areas was developed and implemented, consisting of hundreds of identification and delimitation plates, as well as information and interpretation panels on the natural heritage of the protected areas. The RAM, adopted a uniform system of signalling through the placement of signs (informational and interpretative panels) for the Natural Reserves of São Lourenço and the Deserta Islands. Under the project TOURMAC uniform signalling was also carried out in twenty-three walking trails in the Madeira Island, crossing some Protected Areas. The signalling was homologated by the European Federation of Mountaineering.

Also in the context of this OPE, few initiatives have been indicated for the specific purpose of stimulating sustainable economic development processes in protected areas, as well as of promoting among the public and the local economic agents a rational use of natural resources. Also noteworthy

is the registration in mainland Portugal of the trademark "Parks of Portugal," and in the RAA, the development of a Strategy for Sustainable Economic, Social and Ecological Development in Protected Natural Areas of Macaronesia.

Similarly few specific initiatives were developed for the enhancement of knowledge on traditional economic activities (e.g. bee activity, salt exploitation, cultivation of aromatic and medicinal plants) as well as on promoting the recovery and maintenance of traditional systems of use and processing of resources in harmony with nature conservation and biodiversity. However, the implementation in mainland Portugal, in the Azores, and in Madeira of Rural Development Programmes 2000-2006 - RURIS and PDR - Agri-Environment Measures and Rural Development Plan 2007-2013 - PRODER and PRORURAL[13] merit special emphasis.

Furthermore, the LEADER initiative, with particular focus on the transnational cooperation project - "Biored Club" which promotes awareness of natural and cultural heritage of the territories covered as well as of goods and services including agro-food products, crafts and even rural tourism. This project aims at boosting economic activities both traditional and eco-compatible.

ENCNB Strategic Option 4

Ensure the conservation and enhancement of natural heritage sites and of Sites and Special Protection Areas in the process of Natura 2000

In terms of evaluating the implementation of OPE 4, one should highlight the elaboration and adoption of the Sectoral Plan for Natura 2000 Network (PSRN2000), both in mainland Portugal and in the Azores.

The PSRN2000 defines the strategic guidelines for the management of natural values present in the areas encompassed within the Natura 2000 Network (Sites of Community Importance (SCI) and Special Protection Areas (SPA)) in order to ensure the maintenance of those values (flora and fauna and natural habitats) in a favourable conservation status in the medium and long term.

The PSRN2000 of mainland Portugal was made available through a Geographic Information System (GIS), since the date of its elaboration, mapping all documentation relating to natural values. Some of the available maps were updated at the time of drafting the National Report on Implementation of the Habitats Directive (92/43/EEC), however the cartography remains largely outdated. Its review is needed and initially it should focus on natural habitats. A GIS map was created in the RAA containing information on all the classified and protected areas and in the region.

In order to support the management of the Natura Network (which can be achieved by contractual, administrative or regulatory means) and in order to support it, technical information was prepared and provided by the ICNB, with the cooperation of the Regional Development and Coordination Commission (CCDR) methodological guide for implementing the content of PSRN2000 for IGT (mainly PDMs). The articulation of ICNB and other relevant entities with the municipalities in the development of relevant instruments of territorial management, is guaranteed by law through the participation of ICNB and other entities (CCDR/MAOTDR; MADRP; Regional Secretariat of the

13 http://prorural.azores.gov.pt/

Environment and Sea (SRAM)/RAA and Regional Secretariat of the Environment (SRA)/RAM) in Monitoring Committees (CA), both in mainland Portugal and the RAA and RAM, respectively.

In addition to the actions/measures/initiatives which are reported in OPE 3 regarding protected areas, which remain valid for the areas included in the process of the Natura Network that coincide with protected areas, several *in-situ* and *ex- situ* conservation measures were aimed at species and habitats present in SPAs and SCIs, both in mainland Portugal and in the Autonomous Regions[14]. Also to mention the enlargement process of Natura 2000 to the marine environment, to which will contribute the outcomes of the projects LIFE marine IBAs, LIFE+ Marpro and Marbis-Natura 2000.

In the RAA, the conclusion of Management Plans for the twenty-three SCI and seventeen SPA deserve special attention. The Management Plans include measures and actions which are intended to ensure the conservation of important natural values that led to the classification of these areas. Note noteworthy is the Integrated Management Plan of the Montemuro Site, nearly completed, which covers parts of four counties in the Northern region and one the Central region.

Finally, and despite a program of awareness raising and enlightenment on the process of Natura 2000 has not been drafted, as provided in ENCNB, a special mention should be made to the work, both on mainland Portugal, as in the autonomous regions, under the initiative "Green Days". This initiative is a result of the involvement of several partners, including NGO and nature tourism businesses in order to sensitize civil society to the importance of Natura 2000. The preparation of various materials to support the dissemination and promotion of Natura 2000[15] and conducting public information sessions, particularly in the autonomous regions, on the sites, species and marine habitats of Natura 2000 should also be pointed out other.

ENCNB Strategic Option 5

to develop throughout the country specific actions for the conservation and management of species and habitats as well as safeguard and enhancement of landscape and of the notable elements of geological, geomorphological and paleontological

In the field of structural documents on nature conservation and biodiversity, highlights are the publication of the Red Book of Vertebrates of Portugal and the Atlas of Freshwater Bivalves, the Atlas of Breeding Birds in Portugal and also the Atlas of Amphibians and Reptiles of Mainland Portugal, promoted and coordinated by ICNB. It is also worth referring the revision and updating of the Red List of Bryophytes of the Iberian Peninsula, the National Freshwater Fish Chart, provided by MADRP in www.cartapiscícola.org and National Forest Inventory (IFN) - 2005-06 (National Forests Authority (AFN) Portal). In the Autonomous Regions, we highlight the issue of "Top 100, The Hundred Endangered Species in Terms of Priority Management in the European Biogeographic Region of Macaronesia" and in Madeira, the in the scope of project EMECETUS, the determination of spatial-temporal distribution of cetaceans in the waters of this archipelago, using SIGs.

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14 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

15 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

Regarding the "Strategy for ICN Performance on the Conservation of Wetlands (1999-2003), the elaboration of an inventory of 1300 wetlands, stands out. 50 of wetlands were characterized in detail, including the cultural values present. The national inventory of wetlands is linked to a SIG[16]. In mainland Portugal, a Management Plan for Lagoa Pequena, and in the RAA, Management Plans for the Fajãs da Caldeira of Santo Cristo and of Cubres - S. Jorge Island, were developed.

To date no Global Action Plan were developed as determined by the ENCNB (both by ICNB, and by the Autonomous Regions), which should include a schedule of action plans to establish in the framework of conservation and management of priority species of fauna and flora.

However, in the context of Action Plans for priority species, one should mention the publication in 2008 (by Joint Order of the Secretaries of State for Environment (MAOTDR) and Rural Development and Forestry (MADRP)) of the Plan of Action for the Conservation of the Iberian Lynx, to facilitate the conservation of the specie in the national territory, reversing the process of continued decline of populations and to recover the historic cores of this specie. In the Autonomous Regions special reference to the RAA Action Plan of the Priolo, developed with the aim of managing the habitats of the SPA Pico da Vara/Ribeira do Guilherme, and the RAM Action Plans of the Freira da Madeira (*Pterodroma wood*), of the Freira do Bugio (*Pterodroma feae*) and of the Mediterranean monk seal (*Monachus monachus*), species that benefited from LIFE projects, which allowed the implementation of measures and actions of rehabilitation and conservation of their habitats, thereby addressing the SCI Maciço Montanhoso Central and Desertas Islands, respectively.

Regarding the conservation of genetic resources, Portugal has administrative measures in place to implement the Bonn Guidelines on access to genetic resources and sharing of benefits arising from their use. As currently drafted, these measures are essentially aimed at affirming the existence of a national authority on ABS and establishing a simplified PIC procedure.

Portugal does not have a national strategy, a specific action plan or national legislation implementing the Bonn Guidelines. Since Parties to the CBD agreed to conclude negotiations on the International Regime on ABS, by CBD COP 10, Portugal considers that the national legislation on genetic resources should be developed and approved, after the adoption of the International Regime on ABS.

Decree-Law No. 118/2002 of April 20, must also be mentioned. It establishes the legal regime of registration, conservation, legal protection and transfer of autochthonous plant material of actual or potential interest to agricultural activities, agro-forestry and landscape, including local varieties and spontaneous material, as well as the traditional knowledge associated with it. However hitherto this law was not regulated. Portugal, through MADRP, has participated in several projects at EU level, conservation of plant genetic resources[17].

The problems relating to invasive alien species, also addressed in this OPE, is a very important area of intervention. Portugal has not developed a strategy and/or action plan on invasive alien species (IAS). However, the introduction of IAS in the wild is subject to restrictive regulations. In Portugal, the introduction into the nature of non-native species is regulated by Decree-Law No. 565/99 of December 21 which regulates the introduction and possession of IAS (except for scientific and educational purposes) and the purchase, sale, offer for sale and transport of IAS. It does not

16 http://194.79.77.133/medsite_public/index.php
17 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

currently have any provisions regarding the export of IAS. The Decree Law undergoes an in-depth review process.

On this theme it is important to highlight the work done in the autonomous regions, where this issue is of greater importance, especially the publication of the book "Invasive Terrestrial Flora and Fauna in Macaronesia Top 100 in the Azores, Madeira and the Canary". In the RAA, through Resolution 110/2004 of July 29 of the Regional Government, the Regional Plan for the Eradication and Control of Invasive Plant Species in Sensitive Areas (PRECEFIAS) (2004-2009), was approved and is being implemented, aiming at the eradication and control of sixteen species of invasive plants. Resolution No. 148/98 of June 1998 aims to minimise the possibility of IAS dissemination by escape of specimens in the Azores. A regional Decree for the regulation of import, detention and introduction of non-native species in the Azores region is currently awaiting approval. In the RAM, Regional Decree No. 27/99/M regulates for the keeping, import and dissemination of exotic animal species into Madeira and emphasis is given to the development of the Program for the Control and Eradication of Invasive Plants within the laurel forest and its neighboring areas.

An inventory/database of alien species is in place other than those published by the DAISIE[18] and/or NOBANIS[19] projects. However, no early warning and information system for IAS has been developed.

It is worth noting that the ICNB, together with the ENGOs Quercus-ANCN, the Portuguese Society for Nature Conservation(Quiaios), the University of Trás-os-Montes and Alto Douro (Vila Real), the Municipality of Vila Nova de Gaia (Gaia Biological Park) and Lisboa (Monsanto) and Zoomarine (Shelter Port) provide for the administration of Centers encompassed in the National Network of Collection and Recovery of Wildlife. Presently SEPNA/National Republican Guard (GNR) is responsible for about 60% of animals sent to the various Recovery Centers. Also in this regard, the National Network for the Recovery of Marine Mammals (ABRIGOS) was established, and is implemented through protocols signed between the ICNB, the Lisbon Zoo, the Zoomarine and the Dolphin Project.

In the RAM a network of strandings of cetaceans was created, under the project EMECETUS.

With the objective of promoting joint activities between the institutions with responsibilities for *ex situ* conservation with *in situ* conservation, there were several meetings in the context of the Working Group for the Destination of Seized and Collected Animals (GTDAA) and of laws governing the activities of zoos. A protocol between the ICNB and Botanical Garden of the National Museum of Natural History, Lisbon, was recently concluded aiming to implement actions for the *ex situ* conservation of rare and threatened endemic flora. The ICNB further developed a "Bank of tissues from wild vertebrates" which is currently on a trial basis.

The Agreement of Cooperation between Spain and Portugal for the *ex situ* conservation of the Iberian lynx, which was published on 20 October 2008, and will allow the reintroduction of the species also merits to be highlighted.

For freshwater fish species QUERCUS implemented, in partnership with various institutions, a project for *ex situ* reproduction of fish and aquatic plants species endemic in Portugal.

In the Autonomous Regions of Azores and Madeira the BASEMAC INTERREG project stands out, in which the Botanical Gardens of Faial and Madeira participation, and aimed at the creation and development of a network of seed banks in the geographic space of Macaronesia.

18 www.europe-aliens.org
19 www.nobanis.org

Also in the context of OPE 5 and regarding the recovery of quarries, gravel pits, mines and waste heaps, particularly through the restitution of vegetation using native species, several Environmental and Landscape Recovery Plans were implemented, as provided for in Decree-Law 270 / 2001 of 6 October, republished by Decree-Law 340/2007 of 12 October, either in mainland Portugal and in the Autonomous Regions.

Regarding geological, geomorphological and paleontological heritage, there were few initiatives in mainland Portugal. The exceptions were the classification of a new Natural Monument, Cape Mondego and the proposed classification of Portas do Rodão as a Natural Monument. Mention should be given to the development of the project "Geology and Geological Heritage of Arouca Geopark" that supported the application to the classification by UNESCO.

In the RAA, several Regional Natural Monuments with Geological interest were classified[20], the Inventory of Speleology Heritage of Azores (IPEA) was created, the international database of the World Most Outstanding Volcanic Caves - WoMOVoC was set according to the guidelines of the commission on Volcanic Caves of the International Union of Speleology[21] - and a ISG CaVa with the volcanic cavities of Azores.

In the field of preservation and development of special significance elements of landscapes, attention should be given to studies for the identification and characterization of landscapes, developed both in mainland Portugal (commissioned by DGOTDU to the University of Évora), and in the Azores. It should also be made a particular reference to integrated measures in the programming of the European Agricultural Fund for Rural Development (FEADER) 2007-13, in particular the Integrated Land Interventions (ITI) of Douro Wine Region, under the Program for Rural Development on Mainland Portugal (PRODER). This measure gives the sequence to an agri-environment measure (in the Terraced Vineyards of the Douro, in application since 1994) and to a Zonal Plan, both integrated in the RURIS.

Finally regarding the implementation of agri-environmental measures to safeguard the biodiversity associated with traditional agro-systems present in core areas of conservation, which is considered of the utmost relevance, nearly seventy-three thousand ha in areas encompassed in the SNAC were already supported under RURIS Programme[22]. The preparation of the first Zonal Plan, applied to the SPA of Castro Verde (designated under the Birds Directive) and in the scope of the RURIS, which lasted until 2006 should be highlighted. In 2005 seven new Zonal Plans for protected areas were prepared and implemented jointly by the Regional Directorates of Agriculture and the ICNB under coordination of the MADRP. Under these Zonal Plans, various types of support to agriculture are considered with the aim of conserving the environment. The application of Zonal Plans above was suspended in 2006.

For the financial period 2007-2013, the PRODER was approved under the FEADR. The EU Regulation (adopted in 2008) establishes the arrangements for implementing agro-environmental and forest-environmental components of the Measure ITI, providing for the application of eight ITI to areas

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20 With this objective in the RAA the following actions were conducted or are underway:
- Classification of Regional Natural Monuments of Geological interest: Gruta das Torres, Algar do Carvão, Gruta do Carvão, Furnas do Enxofre, Caldeira da Graciosa, Ponta da Ferraria-Pico das Camarinhas, Caldeira Velha e Pedreira do Campo;
- Proposal for creation of the Azores Geopark for classification respective applications to the European and Global Networks of Geoparks;

21 http://worldvolcaniccaves.org/

22 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

covered by previous Zonal Plans. The financial support for the Natura 2000 network will be mainly oriented for payments of environmental services provided by farmers. The implementation of new ITI to a set of classified areas is under preparation and expected in the near future[23].

In mainland Portugal, in addition to support for the Zonal Plans or ITI, RURIS provides financial support to some six hundred and forty thousand hectares in Agri-environment measures for the agricultural production systems with a significant positive impact on biodiversity (of which, as mentioned above, seventy-three thousand relate to classified area of Natura 2000). Axis 2 of PRODER provides three relevant measures in terms of nature conservation and biodiversity, in particular measures 2.1 - Maintenance of Agricultural Activity (within and outside Natura 2000), 2.2 - Recovery of Modes of Production (change of modes of agricultural production, domestic biodiversity protection and conservation and improvement of genetic resources) and 2.3 - Forest Area Management and Agro-Forestry (minimization of risks, planning and recovery of populations and environmental value of forest areas).

The study "A Management Strategy for Agricultural and Forest Natura 2000" sponsored by the ICNB, concluded in 2006 is noteworthy. The study aimed at outlining an approach for integrating the management of Natura 2000 in the National Strategy Rural Development 2007-2013 and in the PRODER. Under a second project promoted by ICNB (2007-2008), technical proposals based on forest and agri-environment and non-productive investments for the 2nd phase of ITI were also prepared.

In the RAA, the implementation of the Rural Development Plan (PDR) of the Azores (2000-2006) and the Rural Development Programme of the Autonomous Region of Azores (PRORURAL) (2007-2013)[24] should be mentioned.

ENCNB **Strategic option 6**

Promote the integration of Nature Conservation policy and the principle of sustainable use of biological resources in land use planning policy and in the various sectoral policies

Chapter III addresses in-depth the issue of the integration of biodiversity and nature conservation concerns in other relevant sectors.

ENCNB **Strategic Option 7**

Improve coordination and cooperation between central, regional and local administration

The development of the ENCNB requires close institutional cooperation between the central, regional and local levels and hence the need to strengthen existing links, particularly with regard to information exchange and technical cooperation, without which the implementation of the ENCNB is complicated.

23 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/
24 http://prorural.azores.gov.pt/

The relationship between central and local government derives currently from the application of existing legislation, especially concerning the CAs of the various instruments of Land Management (OPE 4) and, more recently, of Decree-Law No. 142/2008, 24 July, which creates different levels of authorities for the conservation of nature and biodiversity, involving in conjunction with ICNB (National Authority), the CCDR, Municipalities and Associations of Municipalities. Equally relevant to achieve this goal are guiding documents that ensure the implementation in a standardized manner, of the requirements on nature conservation and biodiversity[25]. Similarly the assignment by the central government (ICNB/MAOTDR and MADRP) of georeferrenced information on natural heritage values are also an important contribution to facilitate cooperation between different levels of government.

Also within the articulation between the central and local governments the recent formation of Strategic Councils of the Protected Areas of national interest should be highlighted. These were created under Decree-Law No. 136/2007 of 27 April, in order to enhance the relationship with all actors who interact in these areas, taking into account the crosscutting demands on the active management of nature conservation and biodiversity.

In terms of technical cooperation between the central and regional levels of administration, reference to the completion of several training sessions to regional administrative authorities and police authorities of Madeira and the Azores, dealing with the implementation/application of international conventions and national legislation, in the area of nature conservation and biodiversity.

To achieve this OPE the adoption of a program of training of officials and technicians of local authorities to intervene on nature conservation and biodiversity is still lacking. This action is particularly relevant for management skills, particularly in the areas encompassed within the Natura 2000 network (outside of protected areas and the territories in which the management guidelines of PSRN2000 have been implemented in the PDM), which are of the responsibility of municipalities.

ENCNB Strategic Option 8

Promote education and training in conservation of nature and biodiversity;

In terms of assessing the status of implementation of the OPE 8, with the aim of promoting education on the nature conservation and biodiversity the various projects undertaken both in mainland Portugal and in the Autonomous Regions are to be highlighted[26]. These were held in and outside protected areas, being directed to the school students (primary and secondary), and, for farmers, pastoralists and forest owners and the general public.

On the Continent, we highlight the following comprehensive projects: "School in nature" (protocol established in 2004 between the ICNB/MAOTDR and the Directorate-General for Innovation and

25 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

26 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

Curriculum Development (DGIDC/ME), which aims to give all students of the 8th grade a direct contact with the protected areas; "Art' Ambiente", since the academic year 1999/2000 until 2005, involving students from school placed within protected areas and; "Ciência Viva"[27], which frames a National Network of Living Science Centres, designed as interactive spaces of scientific dissemination to the population.

Within the forest, especial mention to the projects: " O Amigo da Floresta " (2004-2006), (sponsored by MADRP) with the support of the Directorate-General for Innovation and Curriculum Development (DGIDC/ME), with the target audience school students of 1st cycle, and "Aldeias Seguras", part of the National Action Programme for Awareness and Education to Defend Forests (MADRP) and aimed to raise awareness of the rural population.

It is noteworthy, the work developed in schools by SEPNA/GNR/Ministry of Internal Affairs (MAI) in the scope of the actions of environmental education and awareness for the prevention of forest fires, both in mainland Portugal and in the Autonomous Regions.

For the marine environment, we can mention the "Campaign for Awareness and Promotion on the Sea" as part of the National Strategy for the Seas (Ministry of National Defence (MDN)/Task Group for Maritime Affairs (EMAM) 2006), which includes preparing an information kit on maritime activities and the marine environment. This teaching kit was developed through a partnership between the EMAM and Cascais Atlantic Agency, under the Schools Program 2008/2009.

In the RAA we stress the Project REMAx which addresses the need to create and implement new forms of participatory mobilization of society in order to conserve marine biodiversity and sustainable development of marine resources. In the RAM emphasis on the project "REIA-MAC", developed by the SRA, which enabled the creation of an Environmental Education Centre of the Ribeiro Frio, inserted into the heart of laurel forest which includes a reception centre for visitors and an interpretive tour in support of the centre, where you can get in touch with over thirty species of trees and shrubs characteristic of the laurel forest.

The above framework is complemented by several other projects of regional expression and location[28], of which some of undeniable importance in the educational field.

In this area of environmental education and training one should note the many initiatives of the ENGO whose main projects are listed in detail and can be found in the report of the assessment of the ENCNB, available in portuguese in:

http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/.

A Cooperation Protocol was established between the MAOTDR and ME. Under this Protocol, support was given (by the Portuguese Environment Agency (APA)/MAOTDR) to the promotion and coordination of projects of Environmental Education, many of them developed in areas of the SNAC.

In the field of professional training on the nature conservation and biodiversity, various actions for different agents intervening in this area (SEPNA/GNR, Public Security Police (PSP)/Brigade for the Protection of Nature (BRIPA), Judicial Police, Marine Police, Authority for Food and Economic

27 http://www.cienciaviva.pt/home/
28 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

Security (ASAE), General Inspectorate of the Environment, Doctors - Veterinarians, Technicians and Wardens of Nature. In the Autonomous Regions, through the SRAM-RAA, Regional Directorate of Forests-RAM, targeted for training, rangers and mountain guides, among others) were promoted , in order to improve and update their technical knowledge.

Worth noting are also the training activities with objectives related to nature conservation and biodiversity given by MADRP and directed to farmers and farm technicians.

However, it should be mentioned that the training courses are not part of a Training Programme, in particular aimed at technicians of local authorities as provided in the ENCNB.

ENCNB **Strategic Option 9**

Guarantee information, awareness-raising and public participation, and mobilize and encourage civil society

Public information on the intrinsic value of natural heritage and its importance as a provider of environmental services with economic and social implications is a matter of first importance.

Protected areas as well as Natural History Museums, aquariums, botanical gardens and zoos, are prime locations for the development of measures to raise awareness about the value and importance of conserving the natural heritage, thus contributing to an increasingly awareness of the visiting public. In the Azores and Madeira the role of the Botanic Gardens of Faial and Madeira, respectively, should be highlighted for their support and development of various activities aimed at the general public.

The enlargement of the concept of nature conservation and biodiversity, to all human activity relies heavily on action by the media, seen as important instruments for the dissemination and formation of opinion. However, dissemination of materials relating to the conservation of nature and biodiversity needs a profound transformation and is essential to adopt a proactive attitude, instead of a reactive approach, as is generally the case today. It is indeed necessary to disclose by "anticipating" and to inform by "explaining".

Within this OPE, we should emphasize the important role played by the Internet for dissemination of materials relating to the conservation of nature and biodiversity, and the range of material already produced for environmental disclosure and awareness raising[29] in addition to a number of initiatives undertaken by the ENGOs and civil society, supported in mainland Portugal by the ICNB/MAOTDR, APA/MAOTDR, DGIDC/ME, MADRP and other public entities, and in Regions of Madeira and Azores by SRA and SRAM, respectively. Among these initiatives we highlight, for example: the Eco-Schools, Young Reporters for the Environment, ECO XXI Program, the Blue Flag Programme, the Programme Living Science and Coastwatch Program - A look on Biodiversity.

In the RAA, the campaign SOS Shearwater elapsing since 1995, and has as its main objective to involve people and organizations in the rescue of juvenile “cagarras”.

29 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

In 2002, the Line SOS Environment and Territory, was created and is currently under management of the SEPNA, giving all citizens the opportunity to report incidents that violate the current environmental and land use planning legislation.

Regarding the involvement of the private sector we highlight the initiative Business & Biodiversity[30] (B&B), which aims to strengthen links between business and biodiversity, through the involvement of businesses in biodiversity conservation and confirming the added value of biodiversity for its operations. Some companies that have joined this initiative have developed education/information activities in this field (either internal or external to the company[31]).

Another key aspect whose development is still below desired levels, despite the effort that has been accomplished, is the provision of information on nature conservation and biodiversity through updated databases. A first phase of redesigning and updating the Information System on Natural Heritage (SIPNAT) is underway in the ICNB, however the National Information Centre on the Natural Heritage, as provided in this OPE, has not been created yet.

ENCNB **Strategic Option 10**

Enhancing international cooperation

In the context of the ENCNB, international cooperation includes the processes of development cooperation, multilateral processes and also those relating to EU policies.

At the EU level, Portugal followed several issues and meetings[32], such as those regarding in: Directives 79/409/EEC (Birds); 92/43/EEC (Habitats); CITES Regulation, Working Party on International Environment Issues: Biodiversity of the EU Council, Biodiversity Expert Group (since 2007 Coordination Group on Nature and Biodiversity); financing of Natura 2000 and LIFE +; Community Legal processes (participation in technical meetings and paquet meetings). Other issues followed include the Water Framework Directive, the Nitrates Directive and the Green Paper entitled "Towards a future Maritime Policy for the Union: a European vision for the oceans and seas." In relation to agricultural and forested areas, Portugal participated in meetings of the Committee sub-group on Plant Genetic Resources in Agriculture, in the meetings on the conservation, characterization, collection and use of genetic resources in agriculture, in the Standing Committee on Forestry and in Working Party on Forests. Portugal is also involved in many projects and programs relevant to scientific knowledge, and biodiversity monitoring[33].

During the Portuguese Presidency of the Council of the European Union in the second half of 2007, Portugal held several events, namely a Ministerial Conference (Lisbon, 22 October) where the results of the public consultation of the Green Paper and the indication of the priority sectors for action were presented, and a Conference on B&B (Lisbon, 12 and November 13), aiming at strengthening the linkage between business and biodiversity. This Conference resulted in the "Message from Lisbon

30 http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Iniciativa+Business+and++Biodiversity/
31 http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Iniciativa+Business+and++Biodiversity/Adesoes+BB.htm
32 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/
33 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

on Business and Biodiversity", later presented at several forums, including in the CBD COP 9 in May 2008 in Bonn.

Regarding multilateral cooperation, Portugal, follows the major issues and international meetings[34], the area of nature conservation and biodiversity.

At the multilateral level, Portugal participated in the Conferences of the Parties (COP) of: Convention on Biological Diversity (CBD); Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar); Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn) including meetings of its Agreements; European Landscape Conventio; Convention on Wildlife and Natural Habitats in Europe (CoE-Bern). Portugal also follows the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the United Nations Forum on Forests (UNFF), the process of Ministerial Conferences for the Protection of Forests in Europe (CoE - MCPFE), the International Maritime Organisation (IMO), International Convention for the Prevention of Pollution from Ships (MARPOL), the OSPAR Convention, London Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and also, since 2004 annual meetings of the International Whaling Commission (IWC). Portugal is also involved through the Portuguese scientific community in the relevant international programs for study and monitoring of biodiversity.

In relation to strengthening the implementation and enforcement of CITES and other relevant conventions, the ICNB promoted several training activities directed to agents that implement these Conventions. In this regard SEPNA/GNR role in strengthening surveillance is noteworthy.

As for the national policy of cooperation for development, there is a low level of involvement of Portugal in terms of official development aid (ODA) in the area of biodiversity. Notwithstanding some specific actions were developed[35] in bilateral and multilateral levels, especially targeting for the Community of Portuguese Speaking Countries (CPLP), particularly in terms of institutional capacity building, technical and professional support and creation of electronic networks to share experiences and best practices.

In terms of Portuguese-Spanish relations in the area of environment, particularly in what regards nature conservation and biodiversity, several initiatives have been developed[36]. INTERREG projects should be highlighted, namely for the region of Macaronesia as well as cooperation for the conservation of *Lynx pardinus* (Iberian Lynx), having as partner the Government of Spain and the autonomous communities of Andalusia, Castilla La Mancha, Extremadura and Castilla-Leon. In this context, a Cooperation Agreement was signed between the Spain and Portugal on the program of captive breeding of this Iberian specie (signed in Lisbon on August 31, 2007) - Decree 50/2008 of 20 October.

Given the relevance of climate change impacts on biodiversity, the development of the Iberian Project "Iberia Change" (Protocol between the ICNB and the Executive Committee of the Commission

34 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

35 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

36 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

on Climate Change (CECAC) and EDP) is of great relevance. It is a project of great scale, developed by the governments of Spain and Portugal which was designed to assess possible impacts of climate change on Iberian biodiversity over the next 100 years. This project is the first transnational initiative to implement joint initiatives to help mitigate the impacts associated with climate change on biodiversity.

3. Specific information requested in COP 8 decisions:

VIII/21 (Marine and coastal – deep seabed) Para 3.

Having identified activities and processes under their jurisdiction and control which may have significant adverse impacts on deep seabed ecosystems and species in ABNJ, (para. 56, dec. VII/5), take measures to manage such practices in vulnerable deep seabed ecosystems and report on measures taken.

Portugal's fishing capacity (in terms of number of vessels) reduced fairly rapidly until 2006 but has then remained relatively level between 2006 and 2008. Overall the number of fishing vessels has reduced from 10,807 in 1999 to 8,585 in 2008 (21% reduction). Tonnage reduced from 118,667 to 106,596 (10% reduction). However fishing power has only reduced by 2% 393,762 to 384,210kW.

Actions to improve enforcement of the EU Common Fisheries Policy (CFP) measures to reduce by-catch and damage to the benthos include: 1) Prohibition of deep-water gears in the coastal zone up to 12nm, except for bottom longlines; 2) Freezing the number of licences for bottom trawling; 3) Prohibiting fishing in several areas for the protection of seamounts, corals and sponges in the waters of the North Atlantic managed by regional fisheries organisations, including NEAFC and NAFO (Community legislation); 4) Mandatory electronic reporting of catches from deep-water fisheries in international waters and transmission of Vessels Monitoring System (VMS) for vessels greater than 15m inside and outside the 12nm zone.

Under the National Plan for the collection of data on fisheries, a separate annual report is prepared on bycatch in the commercial fishing fleet of the Autonomous Region of Madeira. This fleet uses mainly three gears: pole and line (tuna), drifting longlines (black scabbard fish) and purse seines (small pelagics). Monitoring is carried out using on-board observers allowing collection of data. In addition, surveys are carried out at auctions to enable collection of additional data on bycatch. All recommendations are enshrined in the annual report which has been produced since 2001 (available at the Regional Directorate of Fisheries).

Shark monitoring

The monitoring program for deep-sea sharks has been in place since 2003 and since 2005 for surface sharks and is expected to continue until 2013. Monthly sampling is carried out of landings of two of the most important species of deep sea shark: *Centroscymnus coelolepis* and *Centrophorus squamosus*. Data on the landings of the Portuguese commercial long-line vessels operating off Sesimbra (centre of mainland Portugal) are routinely collected.

The same information is collected for surface sharks: *Prionace glauca* and *Isurus oxyrhynchus*. Additional information on discards is also collected, including other species in accordance with Decision 2010/93/UE.

In the RAM, monitoring of sharks is partially carried out under the National Fisheries Data Collection programme. Data on fisheries by-catch – supplemented with those from surveys at auctions – allows a partial idea of the fitness of this group of fauna. Pelagic sharks are also monitored through a project to monitor the sport fishing fleet, which includes observers on fishing vessels.

Related projects in Madeira include: Project: 'Deepwater Fisheries Resources of the Eastern Central Atlantic (PESCPROF - 1 and 2)' monitors communities of cartilaginous fish, particularly shark species in the archipelago of Madeira. Data from these projects can be found at http://www.pescprof.org/.

Project: PCT 'MARPROF: Basis for the Management and Market Acceptability of Deep-water Species of Macaronesia', aims at understanding the biology of these species and monitors deep-sea sharks using research cruises.

Project: 'Visual Censuses of coastal fish in the Madeira Archipelago' in collaboration with the APEC (Portuguese Association for the Study and Conservation of Elasmobranchs), monitors all cartilaginous fishes, including rays and sharks.

VIII/22 (Marine and coastal – IMCAM) Para 5.

When reporting on implementation of the marine and coastal PoW, report on measures taken to enhance implementation of Integrated Marine and Coastal Area Management.

The National Strategy for Integrated Coastal Zone Management (ENGIZC) was adopted on September 8 2009 (by Resolution of the Council of Ministers No. 82/2009), and is consistent with other strategies, policies and programmes. These include the National Strategy for Sustainable Development (Resolution of the Council of Ministers No. No 109/2007 of 20 August), the National Planning Policy (Act No. 58/2007 of 4 September), the ENM, the ENCNB, the National Strategy for Energy (the Council of Ministers Resolution No. 169/2005 of 24 October), the Guidelines for the maritime and port sectors (2006), the National Strategic Plan for Fisheries (2007 -2013), the National Strategic Plan for Tourism (Resolution of the Council of Ministers No. 57/2007 of 4 April), the National Ecotourism Programme (Council of Ministers Resolution No. 112/98, of August 25), Perspectives on the Sustainability of the Azores, the Plan for Tourism in the Azores, the Plan for Tourism in Madeira and the Land Use Plans for the coast.

The ENGIZC reaffirms the national objectives currently implemented in the present legal framework, reinforcing the need for integrated coastal zone management and the need for coordinated planning and management of maritime area and marine conservation. The ENGIZC sets out a vision for a period of 20 years, with the potential for re-evaluation and revision if required, ensuring a long term and strategic approach.

The vision embraces principles defined in the document "Principles for the integrated management of national coastal zone", which incorporate the guidelines and values reflected in the national territorial management instruments: sustainability and intergenerational solidarity, cohesion and social equity, prevention and precaution; systemic approach, scientific and technical knowledge, subsidiarity, participation, shared responsibility, operability. Considering the framework adopted and the vision and principles laid down, a set of policy options was established, consistent with the results of SEA. In the RAA there are six approved coastal plans. These focus on the coastal and inland waters, seabed's and banks, with boundaries set within each plan, specifically the "terrestrial protection zone", with a maximum width of 500m from the high tide level, and the "maritime protection zone", up to the 30m isobath.[37]

37 http://www.inag.pt/index.php?option=com_content&view=article&id=202:engizc

Portugal has designated 27 marine Natura 2000 sites in territorial waters (<12nm) and three Natura 2000 offshore sites, making the total number of sites 30. Marine Natura 2000 sites designation is based on the presence of certain habitats and species.

A number of fisheries measures have been adopted or modified within the 12 marine Natura 2000 sites in territorial waters.

In mainland Portugal**:**

- Arrábida / Espinhel SCI
- Berlengas Islands SPA
- Litoral Norte SCI
- Costa Sudoeste SCI

In RAA:

- Ilhéus das Formigas and Dollabarat reef SAC
- Caloura-Ponta da Galera SAC
- Monte da Guia SAC
- Morro de Castelo Branco SAC
- Costa and Caldeirao Corvo SAC

In RAM:

- Ilhas Desertas SAC
- Ilhas Selvagens SAC

Some examples of measures adopted (according to different circumstances):

- Fishing totally forbidden;
- Fishing prohibited except commercial fishing with hand line or pole and line targeting tuna which use the continuous monitoring system of fishing activities;
- Fishing permitted beyond the 100 or 200 meters isobath;
- Bottom and surface longline fishing forbidden, as well as trawls, seines and deep-water gill nets and vessels over 10 m length.
- Fishing with dredges and other trawl gear prohibited;
- Closure to commercial fishing except fishing with traps and angling with jigging lines at distances not less than 200m from shore
- Closure to recreational fishing;
- Commercial fishing from unregistered boats prohibited;
- Commercial fishing with seines or traps prohibited;
- Trawling, fishing with gill nets and fishing by traps, and retention on board of such gears prohibited;
- Manual capture of pilado (*Polybius henslowi*) and barnacle (*Pollicipes pollicipes*) and grouper (*Epinephelus marginatus*) exploitation regulated by specific legislation;
- Angling by longline gear in excess of 200 hooks per unit or where the opening of hooks is less than 9 mm prohibited;
- Angling with longline gear deployed less than 50m from land, regardless of overall length of vessels prohibited;
- System of quota and licenses;

- Time restrictions (time limit on the catch and closed seasons) and list of species for recreational fishing;
- Positive discrimination to give priority of harvesting to natives and residents;
- Implementation of aquaculture/mariculture subject to authorization;
- Aquaculture activity, commercial fishing, tourism, water sports, spearfishing and shellfish harvesting regulated.

VII/28 (Impact assessment) Para 5.

Apply the voluntary guidelines on biodiversity-inclusive EIA in the context of the implementation of para. 1 (a) of Article 14 and of target 5.1 of the provisional framework of goals and targets for assessing progress towards 2010 and share experience, inter alia, through the CHM and national reporting;I

The decision-making on actions, plans or projects not directly linked with the management of a Natura 2000 area and not needed to that management, but which can affect that area in a significant way, by itself or in conjunction with other actions, plans or projects, is subject to the conclusions of a process of assessment of environmental incidences in what refers to the conservation objectives of such area, an assessment that can assume the form of an EIA or an AIncA (Environmental Incidences Assessment).

In Portugal the legal requirement of considering ecological networks into spatial planning is prior to 2006. Since 1999, the national law defines the legal regime applicable to territorial management instruments, establishing the concept of ecological structure and ecological network, implying that the revision or the publication of new planning schemes should identify areas, values and critical systems needing environmental protection within rural and urban landscapes. This is translated at the sub-national level, with the designation of a structure to protect and benefit ecological values and the regional ecological network, as well as to guide the implementation of ecological network and regulated municipal plans for land management. The National Ecological Reserve (REN) is a crucial component that facilitates the connectivity between the core areas of nature conservation and integration of biodiversity within protected areas. It integrates all the ecological sensitive areas and that are subject to special protection and contributing to the sustainable use and occupation of the territory and aims to: a) protect natural resources, water and soil, and to safeguard systems and biophysical processes associated with coastal and inland water cycle, providing environmental goods and services essential to the development of human activities; b) prevent and reduce the effects of degradation of groundwater recharge, flood risk sea from flooding, soil erosion and mass movements on slopes, helping to adapt to the effects of climate change and safeguarding the environmental sustainability and safety of persons and property; c) contribute to ecological coherence and connectivity of Fundamental Network for Conservation of Nature; d) contribute to achieving the national level, the priorities of the Territorial Agenda of the European Union in environmental management and trans-European natural hazards.

National guidelines have been developed, which specifically take biodiversity concerns with regard to afforestation and deforestation into account. EIA and Strategic Assessment are used for plans, programmes and projects related to deforestation and afforestation operations. In addition biodiversity surveys are undertaken for deforestation operations, and Forest Management Plans covering classified areas are required to integrate a Management Programme for Biodiversity. This includes a set of forestry measures to ensure the sustainable use of habitats and protected species and, where possible, improve their conservation status.

Portugal includes sampling design for collecting ecosystem data to assist with assessing the impact of fisheries on the marine ecosystem in the "Portuguese Data Collection Programme 2011-2013, Module V" submitted to the European Commission in March 2010.The Data Collection Framework for mainland Portugal (BANP Program/Project Collection of data) highlights the following activities as most important in assessing the impacts of fishing in marine ecosystems:

i) Sampling by observers aboard commercial fishing vessels: allows the estimation of unaccounted mortality of fish and collection of biological information on discarded fish and marine invertebrates (both in fisheries and fishing accessory, including species of no commercial value);

ii) Annual trawl campaigns: estimates of abundance and recruitment, distribution and biomass for the main target species of demersal fish and crustaceans, as well as monitoring the structure and functioning of communities of demersal fishes on the continental shelf and continental slope of Portugal(state and pressure indicators);

iii) Annual acoustic surveys: allow estimates of recruitment abundance, distribution and biomass for the main target species of pelagic fish, as well as monitoring community structure of pelagic fish on the Portuguese continental shelf (in addition to the DCF since 2005 informal collaborations and research projects with other research organizations and NGOs have also allowed the simultaneous monitoring of top marine predators - birds and mammals – by the observation platforms);

iv) Pilot study of glass eels (eels, glass eels [(from 2011)]: Additional monitoring and retrieval of existing information will permit the use of relative abundance and distribution area of eels in selected Portuguese rivers as an indicator of efficiency of the European eel management plan and (indirectly) the status of transitional waters and riparian habitats.

The EU Commission Decision on the "Portuguese Data Collection Programme for 2011-2013)" will take place only in late 2010. Currently the "Data Collection Programme for 2009-2010" is in effect.

Appendix XIII of Commission Decision of 6 November 2008 Adopting a multiannual community programme pursuant to council regulation (EC) no 199/2008 Establishing a community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP, defines environmental indicators to measure the effects of fisheries on the marine ecosystem. These indicators are:

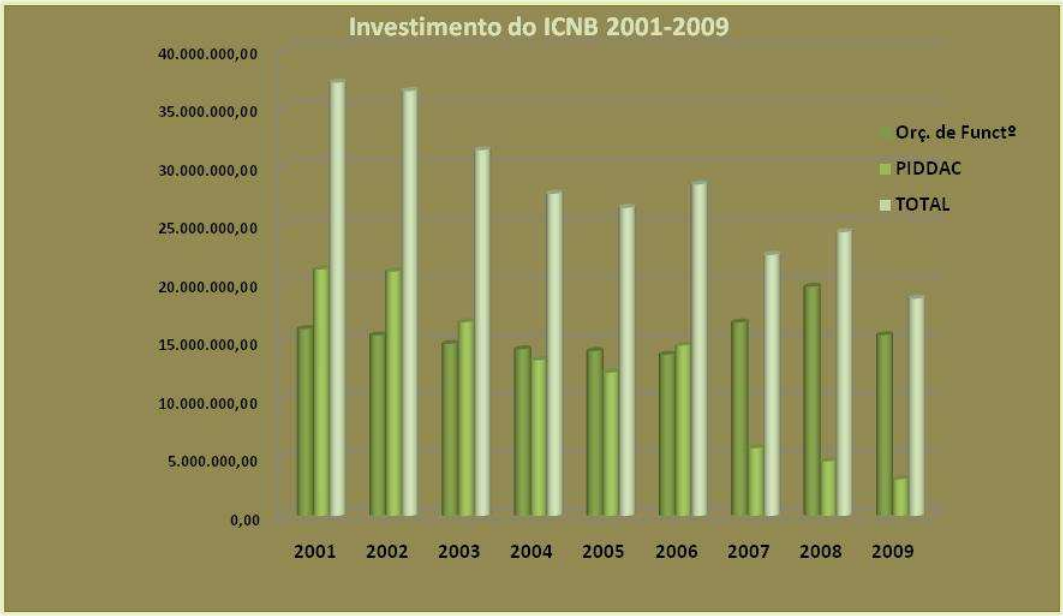
1) Conservation status of fish species;
2) Proportion of large fish;
3) Mean maximum length of fishes;
4) Size at maturation of exploited fish species;
5) Distribution of fishing activities;
6) Aggregation of fishing activities;
7) Areas not impacted by mobile bottom gears;
8) Discarding rates of commercially exploited species; and
9) Fuel efficiency of fish capture.

4. Domestic funding dedicated to nature and biodiversity conservation

In terms of public investment, in the period from 2001 to 2009, the ICNB had a budget of 252.922,190 Euros, distributed as follows:

2001	16.039.470,00	21.138.705,72	**37.178.175,72**
2002	15.491.867,00	20.968.388,94	**36.460.255,94**
2003	14.757.783,00	16.620.878,56	**31.378.661,56**
2004	14.293.961,00	13.354.807,00	**27.648.768,00**
2005	14.142.453,00	12.292.872,68	**26.435.325,68**
2006	13.837.724,00	14.612.030,44	**28.449.754,44**
2007	16.590.560,91	5.801.343,00	**22.391.903,91**
2008	19.661.964,00	4.682.025,83	**24.343.989,83**
2009	15.504.730,81	3.130.624,21	**18.635.355,02**
TOTAL	**140.320.513,72**	**112.601.676,38**	**252.922.190,10**

Development of ICNB's Budget Execution



ICNB's Investment 2001-2009

In the years between 2001 and 2003, a large investment was observed due to projects that are co-financed by the Environment Operational Program (Programa Operacional do Ambiente), approved in 2000, having its starting dates in 2001 and 2002. During those years, the Government Budget

assigned to the ICNB for investments was bigger than in subsequent years.

The sum spent by the ICNB during the period under analysis on projects that are co-financed by the European Regional Development Fund (Environment Operational Program) was approximately 46,700,000 Euros, distributed across the following types of action:

Species' and habitats' management actions	10,310,059
Implementation of the National Program for Nature Tourism,	19,545,000
through the creation/recovery of Interpretation, Dissemination and Reception infra-structures in the National Network of Protected Areas for visitor support	
Framework documents on Nature and Biodiversity Conservation	877,500
Bird, Reptile and Amphibian Atlas, Red Book of Vertebrates	
Regional Plans in the National Network of Protected Areas	3,552,800
Publishing of Environmental dissemination and awareness material	485,471
Implementation of the Regional Plans for the Coastal Area	10,392,924
Outfitting Protected Areas with equipment and means	1,534,676
for Prevention, Vigilance and 1-. Intervention in Forest Fires	
TOTAL	46,698,430

An analysis of the tables reveals that ICNB investments, co-financed by the Environmental Operational Program, represented 42% of the Programme of Investments and Development Expenditure of the Central Administration (PIDDAC) Investment.

Regarding the PIDDAC, it should be noted that actions involving the monitoring of priority species and habitats, not co-financed by EU Programs, carried out during this period, particularly the protection of the Iberian Wolf and the protection and re-introduction of the Iberian Lynx, are a significant burden on the ICNB Budget.

On the national level, around 218,834,859 euros were invested in actions that were co-financed by the Environment Operational Program and 219,859,976 euros by the Regional Operational Programs, the latter of which include the funding from ERDF for the Natura 2000 Network. It should be noted that eligible actions carried out at Sites of the Natura 2000 Network were co-funded by Regional Operational Programs, as follows (Source IFDR):

Programa	Medida	Investimento elegível executado
PO Ambiente	I - Conservação e Valorização do Património Natural	70.624.946
	II - Valorização e Protecção dos Recursos Naturais	122.890.118
	III - Informação, Sensibilização e Gestão Ambientais	25.319.795
Total PO Ambiente		**218.834.859**
POR NORTE	16 - Ambiente	59.835.633
POR CENTRO	13 - Ambiente	49.528.654
POR LISBOA	18 - Ambiente	39.450.236
POR ALENTEJO	16 - Ambiente	47.837.814
POR ALGARVE	16 - Ambiente	23.207.639
Total PO's Regionais		**219.859.976**
Total Global		**438.694.835**

Chapter III - Sectoral and cross-sectoral integration or mainstreaming of biodiversity considerations

The National Strategy for the Conservation of Nature and Biodiversity (ENCNB) constitutes the fundamental instrument for the effective integration of different sectoral policies. It is a document of national scope that focuses on integration and that recognizes that the achievement of objectives requires a co-ownership of the various relevant sectoral policies.

An Interministerial Coordination Committee (CCI) was set by Resolution No. 41/99 of 17 May of the Council of Ministers with the task of promoting the integration of the principles of conservation and sustainable use of biodiversity in the various sectoral policies.

Biodiversity concerns are integrated in land use planning instruments as a result of the existing legislation and its regulation (Parliament Act 48/98, of 11 August, defines the basis of land use planning and urbanism policy, amended in August 2007, and the Legal regime of Land management instruments (IGT), initially established by the Law 380/99 of 22 September, it has suffered several amendments since then, the last one in February 2009 (Law 46/2009, of 20 February).

More specifically, the 6 Regional Land Use Plans – PROT of mainland Portugal, both adopted and in different stages of preparation[38], define a "Regional Structure of Environmental Protection and Enhancement", with diverse elements according to the characteristics of the region.

Land planning policy (and the regional development associated with it) and the processes for environmental impact assessment (EIA) and strategic environmental assessment (SEA) are fundamental subjects for the sectoral integration of biodiversity that have developed dramatically during the 2000s following the publication and subsequent refinement of the legal frameworks for land management and EIA towards the end of 1999.

They all take into account the Fundamental Network of Nature Conservation (Natura 2000 Network and Network of National Protected Areas and the so-called Water Public Domain), as well as the forest and agriculture systems.

The landscape, the coastal area and the water resource system are also considered, directly or indirectly, in all of the PROTs.

Also the management of EU funds, and in particular the management of funds related to regional development policy, by guiding the policies of structural funds allocations, gives strategic importance to environmental issues and within these Nature Conservation and Biodiversity, conditioning options and integrating decision-making processes also in a perspective of sustainability.

In this context, for the European Regional Development Fund – FEDER (CSF III - 2000 to 2006), we highlight the implementation of the Operational Programme for Environment (POA), through which it was sought to ensure the achievement of the objectives of environmental policy. This Operational Programme aimed to rehabilitate and enhance natural heritage and urban environment as well as to improve the information infrastructure, awareness and environmental management.

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38 Adopted PROTs: PROT do Algarve, May 2007; RDSP of "*Oeste e Vale do Tejo*", adopted in June 2009

In different stages of preparation: PROT do Norte, PROT do Centro, PROT da Área Metropolitana de Lisboa (revision) and PROT do Alentejo (presented for Government approval)

In particular the Measure on Conservation and Exploitation of Natural Heritage stands out, focusing on the areas of the RNAP or of the REN, and therefore is an important tool in implementing the ENCNB.

In addition to the POA, other instruments relating to environmental policy should be highlighted, particularly at the level of Regional Operational Programmes of Mainland Portugal. Under these Programmes, beyond municipal-oriented investment complimentary to investments in the Cohesion Fund, sectoral interventions applying the "polluter - pays" principle ensuring compliance with Community rules stand out.

Also standing out under these programs is the goal of promoting the conservation and enhancement of natural heritage in accordance with a strategy for nature conservation and biodiversity, which contributes positively to the implementation of the ENCNB.

In all of the investments within the FEDER and the Cohesion Fund, planned investment reaches € 3.1 billion with € 2.1 billion of reimbursements from the Funds. On December 31, 2008 executed expenditure amounted to € 2.1 billion.

Following CSF III, the National Strategic Reference Framework (QREN) for 2007-2013 included, through the five Regional Operational Programmes of Mainland Portugal and the Operational Programme Territorial Enhancement (POVT) nationwide, several priorities directly related to the environmental protection, natural resource management, management of natural and technological hazards and land use sustainability. The planned investments in these priorities reach € 3,7 billion with € 2.5 billion from the ERDF and Cohesion Fund.

As instruments of strategic planning[39] essential for the integration of the nature conservation and biodiversity in relevant sectoral policies:

(a) coastal and marine ecosystems - National Strategy for Integrated Coastal Zone Management (ENGIZC, Resolution of the Council of Ministers No. 82/2009), National Strategy for the Seas (MNE): The Maritime Areas Spatial Plan (POEM);

(b) water - Water Law, National Water Plan (PNA), Watershed Plans (PBH) in the Azores Autonomous Region, River Basin Management Plans (POBH) and the Regional Water Plan (PRA) in the Madeira Autonomous Region, the Regional Water Plan (PRAM);

(c) regional development - National Strategy for Sustainable Development (ENDS) and its Implementation Plan (PNDS) and Operational Programmes and the specific regulations for co-financing under the CSF III and the QREN. In the Azores Autonomous Region, the Regional Plan for Sustainable Development of the Azores (Preds);

(d) agriculture - The legislative framework for GMOs; Rural Development Programme 2007-2013 (PRODER), in particularly the Measure Integrated Territorial Interventions (ITI); Decree Law No. 118/2006 of June 21, (amended by Statement of Rectification No. 53/2006 of August 18), establishes the rules that govern the use of sewage sludge on agricultural soils; EU Council Directive No. 91/676/EEC of 12 December 1991 on the protection of waters against pollution caused by nitrates from agriculture, transposed into domestic law through Decree-Law No.

[39] Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

235/97 of September 3, as amended by Decree-Law No 68/99 of March 11; Decree Law No. 214/2008 approved the regime for livestock husbandry (REAP); National Strategy for Agro-Livestock and Agro-Industrial Effluents (ENEAPAI) In the Autonomous Regions of Azores and Madeira the PRORURAL (2007-2013);

(e) forest - National Strategy for Forests (ENF), Forestry Planning Regional Plans (PROF), Forest Management Plans (PGF), PRODER, National Plan for Protection of Forest Fire (PNDFCI) and the National Action Programme for Control of Nematode Pine Wood (NMP). In the Autonomous Regions, the Rural Development Plans (PDRU) and the Rural Development Programmes. In Madeira the Forest Management Plan;

(f) hunting - General Law on Hunting and its regulations (Decree-Law No. 202/2004, of August 18, as amended by Decree-Law No. 201/2005, 24 November);

(g) fisheries and aquaculture - National Strategic Plan for Fisheries (PEN-FISH), National Strategy for the Seas (ENM): Maritime Areas Spatial Plan (POEM), Law on Inland Fisheries - Law No. 7 / 2008 of February 15;

(h) tourism - National Strategic Plan of Tourism (PENT), the National Nature Tourism Programme (PNTN) and in the Autonomous Regions of Azores and Madeira, the Plan for Tourism Planning of the Azores (POTRAA) the Plan for Tourism Planning of the Madeira (LPO);

(i) industry - "Industrial Licensing System" in conjunction with the instruments of spatial planning and the system of EIA;

(j) energy - National Energy Strategy, National Action Plan for Energy Efficiency (NEEAPs) National Strategy for Climate Change. In the Autonomous Region of Madeira the Plan of Energy Policy of the Autonomous Region (PPER, 2002);

(k) transport (road, maritime, port, rail and airport) - Strategic Plan for Transport (RSPG) National Road Plan (NRP), Guidelines for the maritime and port sectors (OESMP) and the future National Maritime and Ports Plan (PNMP), which is subject to SEA, pursuant to Decree Law No. 232/2007 of 15 June; National Logistics Plan, May 2006, which establishes the strategic principles for the development of National Logistics Network, Guidelines for the Railway Sector (OESF), October 2006 , which determine the main lines for the development of the National Railway Network, and Guidelines for the National Airports Sector, also in 2006, aimed at the development of, among other, airport infrastructure to provide intermodal solutions, ensuring its articulation with the land use planning.

Other normative and guiding documents, promoted by the Environment Ministry to standardize proposed solutions, in particular when developing / reviewing Instruments of Territorial Management and Environmental Impact Assessment, and to ensure the effective integration of the nature conservation and biodiversity in the sectoral policies, include:

- "Handbook to support the analysis of hunting processes " (ICNB);
- "Handbook to support the analysis of projects relating to the installation of overhead distribution lines and electric power transmission - avifauna component (ICNB);
- "Recommendations for Monitoring Plans of Windfarms, referring to the bats" (ICNB);

- "Handbook of supporting analysis of projects relating to the implementation of linear infrastructure (ICNB);
- "Proposal for a Handbook to support ICNB formal opinions regarding forestry activities"
- Publication of a guiding notebook on forestry areas in the context of monitoring the development of PDMs (CCDRN);
- Guidelines, particularly for forestry areas and Classified Areas/Natura 2000 as part of monitoring the development of PDM (CCDRN);
- Methodological Guide for the implementation of the contents of PSRN2000 for IGT, mainly PDM (produced by ICNB, with the collaboration of CCDR);

Integration of conservation of nature and biodiversity by Sector

Land Use Planning

Among other, the Instruments of Land Management (IGT), are essential for a consistent process of integration of policies, with direct application in land use planning policy and with different implications on sectoral policies, especially the National Programme of the Land Use Planning Policy - PNPOT, the Regional Land Use Plans – PROT, the Municipal Land Use Plans - PMOT (which include Municipal Master Plans - PDM[40]), the Special Land Use Plans - ESDP (for example Protected Areas Land Use Plans – POAP, Coastal Zones Land Use Plans – POOC, Public Water Reservoirs Land Use Plans – POAAP). Under the Sectoral Plans, important examples are the Natura 2000 Sectoral Plan, Watershed Plans and Regional Forestry Plans – PROF.

The approval of a set of instruments that were identified as fundamental to a consistent policy integration process should be mentioned, particularly the PNPOT in 2007. In 2009, the majority of PROTs were adopted or reviewed; a significant part of the PDMs have also been reviewed or are being reviewed at present.

Regarding the coastal zones, all POOC were concluded.

On a sectoral level, the publication and entry into force of the PROF should be highlighted. These plans establish the framework for forest development, with a view to preparing management plans on an operational scale. Where these are located within classified areas, they include biodiversity management programs, under the terms imposed by the legal framework for forest planning and management, which was extensively revised in 2009.

Finally, the Sectoral Plan for the Natura 2000 Network, approved in 2008, is the guiding and reference strategic instrument for the management of Natura 2000 sites within the Network, namely with a view to integrate their provisions in new land use planning instruments or in their review. To that end, there is already a draft version of a Methodological Guide for transposing the Sector Plan for the Natura 2000 Network to those instruments, in particular to Municipal Master Plans.

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40 Document regulating land use planning in a given municipality in Portugal. The PDM is formulated by the Municipal Council and approved by the Municipal Assembly. This document is set to organize the municipal territory where by establishing the spatial referencing of uses and activities of municipal land by defining classes and categories relating to the area, identifying the urban networks, roads, transport and equipment, telecommunication systems, water treatment and supply among others.

Planning for the marine environment was the object of considerable effort, following the adoption of the National Strategy for the Sea in 2006, which includes objectives, options and guidelines from the ENCNB. In this context, the creation of an Interministerial Commission for the Affairs of the Sea was approved. In 2007 its action plan (in force since 2008) incorporated the preparation of the Plan of maritime spatial planning, now underway, which aims to set a new tool which will contribute to the planning of maritime activities, in close coordination with coastal zone management and is based, among others, in the ecosystem approach.

The National Ecological Reserve (REN), an integral part of the Fundamental Network for Nature Conservation, is intended to be one of the main supports for land use planning and management, grouping the most sensitive and relevant biophysical systems from the point of view of ecosystems services and ecological connectivity; RENs legal framework was reviewed in 2008, with a view to equip it with greater efficiency in terms of its operational and strategic objectives.

Environmental Impact Assessment and Strategic Environmental Assessment

Equally important are the processes of Environmental Impact Assessment (EIA) of projects, and Strategic Environmental Assessment (SEA) of plans and programs aimed at the implementation of legislative and regulatory framework regarding the compatibility of human activities, namely economic activities, with nature conservation and biodiversity in a sustainable manner.

In terms of EIA, it should be mentioned that at present, the approval of projects and actions take into account descriptors and actions that are directly or indirectly related to natural values. In the case of projects that have an impact on classified areas, the EIA must include explicitly the biodiversity descriptor. As mentioned, the EIA process is carried out under specific legislation. In the particular case of the Natura 2000 Network, all projects or actions that may affect the integrity of a site in that Network must be assessed for environmental impact, even if they are located outside of that site. OK

Portugal has adopted measures with the aim of limiting the use and degradation of biological resources: through Environmental Impact Assessment legislation and land planning, namely through integration of rare and threatened habitats in the Natura 2000 network. Furthermore there are several ecological sustainability conditions to be fulfilled which are incorporated in agricultural, forestry and fishery policies.

Through the joint application of EIA and SEA directives (Decree-Law nº 197/05 of 8 November and Decree-Law nº 232/2007 of 15 June), Birds and Habitats Directives (Decree-Law nº 140/99, 24th of April, changed by Decree-Law nº 49/05, 24th of February) any plans, projects or actions susceptible of significantly affect biodiversity and protected areas can be required to submit an environmental impact assessment, an environmental incidences assessment or a strategic environemtnal assessment (a list of projects for which the environmental assessment is mandatory exists, and is more encompassing on projects in protected areas). The final conclusions of the Environmental Impact Assessment is binding, and decides if the process gan go ahead as originally projected, if it needs revision or if it cannot proceed.

At the same time, all projects that are subject to community funding (Cohesion Fund) or funding from the European Investment Bank are subject to a statement of conformity with the provisions of the legal framework for the Natura 2000 Network in the whole national territory.

The Strategic Environmental Assessment Directive (2001/42/EC) requires that relevant sectoral

programmes or plans susceptible to have negative effect on conservation and sustainable use of biological diversity, as well as all the plans and programmes that require an evaluation in the terms of Decree-Law nº140/99, 24th of April, (changed by Decree-Law nº49/05, 24th of February), are systematically subject to a previous environmental evaluation as form of integration of the environmental considerations in its preparation and approval.

In 2007, the legal framework for environmental assessment of projects and actions was complemented with the for transposition of the Community Directive on Strategic Environmental Assessment (Decree-Law No. 232/2007 of 15 June on the assessment of the effects of certain plans and programs on environment) and Directive 2003/35/EC of 26 May on the public participation in drawing up plans and programs concerning the environment (see Aarhus Convention - Resolution AR 11/2003 of 25 February)). From that date, environmental assessment of plans and programs became widespread, namely as regards the critical biodiversity factor. The framework of the SEA result of, which transposes Directive 2001/42/EC of 27 June.

The Environment Portuguese Agency runs a site[41] with extensive information on past and on-going environmental impact assessments.

Agriculture

Regarding economic sectors, the agricultural, forestry and herding activities mould Portugal's ecosystems most directly. A large part of the intervention in terms of active management of natural wealth during the last decade has been aimed at reinforcing the maintenance of certain practices in the agro-forestry use of the national territory, in particular within classified areas, with a view to assuring the maintenance and re-establishment of the favourable state of conservation of natural species and habitats.

That is to say, the vision that agro-forestry activity should have its multifunctional vocation reinforced with respect to the use and operation of rural spaces, valuing the component of public service of environmental assets, among which is the production of biodiversity.

This correction has been mainly carried out within the scope of the Common Agricultural Policy (CAP) rural development policy, both during III Community Support Framework (CSF) and within the context of the last review of the CAP (PRODER 2007-2013).

Within the scope of Agricultural and Environmental Measures of the Rural Development Program (RURIS) that was in force until 2006, around 73,000 ha were supported in areas included in the National System of Classified Areas (www.dgadr.pt/ar/ruris/avaliacao final/RelatorioFinal.pdf) and in the scope of which the first Zonal Plan was registered, applied to the SPA of Castro Verde. In 2005, other 7 Zonal Plans were added in 7 Protected Areas (Peneda-Gerês, Montesinho, Douro internacional, Serra da Estrela, Tejo Internacional, Serras de Aire e Candeeiros and Sudoeste Alentejano e Costa Vicentina).

With the objective of outlining an approach to integrate the Management of the Natura 2000 Network into the National Strategy for Rural Development (ENDR) 2007-2013 and into the Plan for Rural Development, the preparation of a study entitled "A Strategy for Agricultural and Forest Management for the Natura 2000 Network" was promoted (concluded in 2006). This study had as its starting points the identification of areas with common characteristics, their dynamics, how they

41 http://www.apambiente.pt/INSTRUMENTOS/AVALIACAOAMBIENTALESTRATEGICA/Paginas/default.aspx

compared to the management guidelines arising from the Natura 2000 Network Sector Plan, the design of policy measures needed so that the territory dynamics would ensure conservation of assets protected by the Birds and Habitats Directives and the calculation of financial sums to be allocated for that purpose, based on the express guidance of the new FEADER.

At the end of 2007, the new Program for Rural Development in Mainland Portugal (PRODER) was approved within the scope of the European Agricultural Fund for Rural Development (FEADER). In line with axis 2 of PRODER, regarding Sustainable Management of Rural Space, the Regulation that establishes the way that agricultural/forestry-environmental components of the Integrated Land Interventions (ITI) Measure (the successor of the Zonal Plans) are applied, was approved in 2008. Within the scope of this measure 8 ITIs came into force for the areas covered by the 8 previous Zonal Plans (including the respective areas of the Natura 2000 Network).

To that end, a second project was developed between 2007 and 2008, under which technical proposals, based on agricultural/forestry-environmental measures and non productive investments for a second stage of ITI. This corresponds to a vast group of sites in the Natura 2000 Network, whose management depends primarily on maintenance and recovery of certain agricultural, forestry and herding practices.

The reinforcement of funding aimed at the Natura 2000 Network provided for in PRODER will be used to ensure the widening of the ITIs to all remaining classified areas that require directed agricultural and forestry management to meet their conservation objectives.

Throughout the decade, and alongside the funding for Zonal Plans or ITIs (agricultural/forestry-environmental measures), RURIS supported around 640,000 ha connected to agricultural production systems between 2001 and 2006. This had a significant positive impact on biodiversity. 73,000 ha of this area are within a classified area of the Natura 2000 Network. Since 2008, PRODER included another three measures related to nature conservation and biodiversity, namely measures directed towards Maintenance of Agricultural Activity in Deprived Areas (within and outside the Natura 2000 Network), Valuation of Production Methods (changes in agricultural production methods, protection of domestic biodiversity - autochthonous breeds and plant genetic resources, so as to promote their valuation, as well as measures relating to changes in production methods - and conservation and improvement of plant and animal genetic resources), biological agriculture and integrated production, with direct and indirect positive effects on protection of biodiversity and management of forest and agricultural forest space (minimizing risks, planning and recovery of settlements and environmental enhancement of forest spaces). Finally, measures for diversifying activities that include support of ecotourism and nature tourism should be mentioned, as a way of promoting the valuation of environmental services and landscape that are part of rural spaces.

At the same time, payments within the scope of these measures should be in line with the horizontal rules of environmental conditionality and good agricultural and environmental conditions, as well as the minimum requirements relating to the use of fertilizers and products for plant health and maximum yield in herding.

It is expected that from 2010 onwards modulation mechanisms will be reinforced, through the transfer of sums for direct help from the CAP (1st pillar) for rural development. According to PRODER, these will be aimed as a matter of priority to reinforce funding to the Natura 2000 Network and for projects with structural character. The funds will be divided equally (50% split) between these two priorities. The reinforcement of funding aimed at the Natura 2000 Network will be used

for ensuring the widening of ITIs as described above.

Hunting

Still within the context of sector activities that depend on rural sustainability, it is important to emphasize the reinforcement of biodiversity integration within hunting policy, arising especially from the application of reviews from 2004 and 2005 of the legal framework for conservation, fostering and exploitation of hunting resources, with a view to its sustainable management and to provide the strategic framework of the hunting policy.

The promotion of hunting planning in the whole national territory is highlighted as the most relevant result in this regard, implementing sustainable management models for game species. This objective, aimed at bringing an end to un-planned hunting, was successful, since only around 10% of hunting grounds are unregulated at this time.

This new regime further allowed to integrate in hunting legislation procedures that contemplate the specificity of classified areas and the natural wealth to be preserved, specifically in terms of approval of hunting areas and their hunting planning and hunting management plans. By way of example, currently the national authority on conservation of nature and biodiversity (ICNB) supports and monitors the management of around 33% of the total hunting areas in the country, which corresponds to around 1,300 hunting zones. Within the same scope, it should be noted that land use planning in protected areas also includes provisions that regulate hunting.

Forests

Regarding forests, measures aimed at promoting the environmental value of forests are highlighted, contributing to improving biodiversity. In addition, they lessen the effects of climate change, minimize the effects of soil erosion and protect water resources. Measures aimed at preventing forest fires, included in PRODER and within the frame of the National Plan for the Protection of Forests from Fires, also have a significant contribution to make to the objective of conservation in terms of the losses that would have been associated with large forest fires, which are avoided.

Fisheries

Within the fishing sector, the Fishing Operational Program (PROMAR) should be mentioned. Under this program, various policy and financial support measures are provided for the sustainability of fishing activity and actions of conservation in sensitive areas such as those within the Natura 2000 Network, when related to fishing.

Tourism

Another economic sector that is very relevant to the management of biodiversity in Portugal is tourism, not only due to the impact it can have on sensitive areas from the point of view of nature conservation but also, inversely, by the potential that sustainable tourism has to offer for the enjoyment, knowledge and preservation of natural wealth. For this to happen, an essential condition is that the activity includes biodiversity adequately within its core business.

Thus, at the level of the National Network of Protected Areas, the creation of a Visiting and Communication Program (within the scope of the National Program for Nature Tourism created in 1998) in 2006 is worth mentioning. This was intended to improve visiting conditions in these areas in an integrated and sustainable way, with a view to recreation and environmental awareness, while

at the same time improving the current model of service to the public. Still within this scope, there was significant investment in optimizing the infra-structures and dissemination of materials in these areas. This program includes a standard signalling system (around 320 identification and boundary signs and 870 information and interpretation panels relating to the existing natural heritage), developed within the scope of a project which was finished in 2007.

In the meantime, the year 2000 saw the creation of an incentive system for strategic tourism products within the scope of CSF III (2000 to 2006). Among other things, it supported the development of Nature Tourism projects, exclusively for companies that wanted to develop tourism and accommodation projects within the territory encompassed by the National Network of Protected Areas, as well as the facilitation of projects for sustainable development, as long as they were implemented in areas next to protected areas.

More recently, the approval of the National Strategic Plan for Tourism (PENT) in 2007 should be mentioned. PENT established a set of intervention guidelines aiming to guide tourism activities in Portugal. Among them, one to be highlighted is the strategy for consolidating and developing ten strategic tourist products selected due to their market share and growth potential, as well as the suitability and competitive potential in Portugal; according to the PENT, these should form the basis for the development and capacity policies for Portugal's tourism offer. Among these products, nature tourism and cultural and landscape touring are worthy of note; their objectives are the valorisation of nature and biodiversity as tourist products.

In 2008 the approval of the legal framework for installing, operating and running tourist enterprises was reviewed thereby consolidating the product Nature Tourism, widening it to the whole territory of Portugal and creating the possibility to such enterprises to, according to established criteria, be acknowledged by the ICNB as Nature Tourism operators.

Other policies and activities

Finally, regarding the integration of biodiversity in other policies and activities, special mention should be made of the efforts relating not only to direct impacts of infrastructure on natural values, in particular linear infrastructures, but especially the impacts on ecological connectivity and the fragmentation they impose on the territory.

In this regard, the protocols for cooperation established between the companies that transport and distribute energy, the ICNB and ENGOs should be mentioned. These started off in 2003, and were responsible for pioneering work on describing the impacts that electricity lines had on birds, on making electricity lines compatible with bird protection, on monitoring the effectiveness of the corrective measures introduced, on testing new types of structure that minimise the impacts, and on implementing operations for the correction of lines identified as being dangerous to birds.

Furthermore, guidelines for project analysis were prepared, namely for projects for the installation of overhead distribution lines and electric energy transport, for roads and communication routes, and for wind farms, with a view to standardizing the proposed solutions at the EIA stage or in licensing processes and to ensure that these solutions are effective.

As a final note, the various activities linked to education and training on the subject of conservation and biodiversity, involving projects at regional and local level, some of which are undeniably important in the field of education, and many of which were started by ENGOs. Also to be mentioned is the Cooperation Protocol established between the Ministry for the Environment and

the Ministry of Education, under which many actions were carried out in areas that are part of the national system of classified areas.

Within the domain of professional training and within the remit of nature conservation and biodiversity, various initiatives were developed aimed at various agents with an intervention in this area. The purpose was to refine and update their technical knowledge.

As an example of an initiative on a national scale the "Escola na Natureza" (School in Nature) project deserves a mention. This was a result of a protocol established in 2005 between the ICBN and the Department of Innovation and Curricular Development at the Ministry of Education. Its objectives are: a) To allow all students of the 8th grade to have a relationship with Portugal's natural heritage; b) To allow teachers to make use of the existing resources within Protected Areas in their teaching; c) To mobilize society to conserve and value the Protected Areas.

In subsequent years, the project was widened to include all Protected Areas on mainland Portugal with a view to gradually encompassing all schools in the country that teach up to 3rd Cycle of Basic Education (in Portugal, up to the age of 14/15).

The Art'Ambiente Project should also be mentioned, which was started in the 1999/2000 academic year. The target audience included from pre-school students up to Secondary School students living within protected areas, being widened in 2005 to all protected areas on the mainland (around four thousand students). This project focused on aspects of nature conservation, with a different theme every year. Technicians from the protected areas brought the theme into schools and students were challenged to produce a piece of artwork or sculpture on that theme. At the end of the academic year, at the World Environment Day, the works of art are exhibited to the public and there is a prize-giving ceremony, with various educational and recreational activities for participants.

Chapter IV - Conclusions: Progress towards the 2010 Target and Implementation of the Strategic Plan

Strategic Option 1

Promote scientific research and knowledge about the natural heritage as well as monitoring species, habitats and ecosystems

By assessing the actions taken to implement this OPE, it is easily understandable that despite numerous studies conducted both in mainland Portugal and in the Autonomous Regions the desired goal was not totally achieved .

The gap in scientific knowledge of the national natural heritage is proven unequivocally, particularly when it comes to defining and implementing measures of conservation and management of natural values, and to base decision-making processes. To bridge this gap is one of the priorities in the implementation of the ENCNB. This lack of knowledge has been confirmed countless times in particular when drawing up some recent assessement or management projects such as the (review of the) Red Book of Vertebrates of Portugal, the PSRN2000, or the National Report on Implementation of Habitats Directive (Article 17). Very soon, tasks that require scientific information will have to be performed, especially those under the new legal regime for nature conservation and biodiversity in what regards the constitution of the national registry of classified natural values and the organization of the inventory of the elements of national biodiversity.

These gaps of adequate scientific information, of a biological and ecological nature, and the insufficient definition of indicators, both for implementing measures and for the assessment of the status of biodiversity (especially those associated with monitoring), are a significant obstacle to an objective assessment of the evolution of the conservation status of species, habitats and ecosystems, and of the effectiveness of plans and programs associated with the ENCNB.

Another major limitation is the lack of tools for guiding scientific research and knowledge (Reference Framework and Global Action Plan), which does not allow, among other things, for a proper coordination between agencies and between public and private institutions with expertise. Moreover, following the same logic, tools such as SIPNAT associated with the exchange of technical/scientific information, lose part of their usefulness due to the lack of a multidisciplinary stakeholder platform (producers and users of information).

To these gaps adds the absence of a national investment program, specific to scientific and technological development in this area, which needs to be addressed.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Develop and adopt a reference framework to define priorities in terms of knowledge to be acquired in the field of nature conservation and biodiversity and its planning/programming, to be developed jointly by all sectors with responsibilities in this field;

2 - Develop a Plan of Action for the ICNB, and other Plans of Action for the Autonomous Regions, which frame and schedule projects and actions to be implemented based on the reference framework referred to above;

3 – Optimize the link between the ICNB, the Autonomous Regions , Scientific Institutions and other relevant information producers (universities, public institutes, scientific societies, companies, etc.), by promoting the circulation of relevant scientific and technical information through the establishment of protocols and agreements in the context of SIPNAT;

4 - Create the National Registry of Classified Natural Values and organize the inventory of the elements that compose the National Biodiversity (mandatory according to the new legal regime for nature conservation and biodiversity);

5 - Encourage the creation of an Investment Program for Scientific and Technological Development in the area of nature conservation and biodiversity;

6 - Define methodologies and indicators for monitoring the state of species and habitats;

7 - Making the best use of EU funds and financial resources available to support and promote the strengthening of the knowledge base for the conservation of nature and biodiversity, in articulation with the Program referred in 5.

Strategic Option 2

Establishing the Fundamental Network for Nature Conservation and the National System of Classified Areas, integrating in the latter the National Network of Protected Areas

In terms of assessing the state of implementation of this OPE it is considered that the objectives were achieved, albeit with a very considerable delay in relation to the deadlines set in ENCNB.

The recent publication of some legal diplomas had as consequence the impossibility of carrying out an assessment of the adequacy of the objectives of the law and practice, particularly on the impact of its implementation for nature conservation and biodiversity, and its appropriateness to this date, to the specificities of the Autonomous Regions, particularly in the case of REN.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Develop and publish the National Scheme of Reference and the National Strategic guidelines and the ones for the different regions of mainland Portugal as provided for in Decree-Law 166/2008 (REN);

2 - Operate the necessary mechanisms for integrating the concept of RFCN, when reviewing each PMOT and PROT;

3 - Identify indicators to assess the real impact of the implementation of instruments designed to accomplish this strategic choice.

Strategic Option 3

Promoting the valorization of protected areas and ensure the conservation of natural, cultural and social heritage

Under this OPE, directed to the promotion and enhancement of protected areas, the publication of Land Use Plans for all protected areas of national scope in mainland Portugal, deserves special mention.

The development of specific actions for nature conservation and biodiversity[42], integrated in the schedule of the activities of Protected Areas (which in mainland Portugal focused mainly in fauna in detriment of flora and geology, and in vertebrates in detriment of invertebrates, and also in the terrestrial scope versus marine), in its vast majority were not subject to a necessary and appropriate planning/scheduling. This situation, which must be overcome, is due mainly to the fact that the ENCNB is not anchored in action plans that program the initiatives/actions, the actors and the investment required for this purpose.

Specifically for the marine environment, the strategic planning tools and their implementing measures were recently adopted, so it was not possible to evaluate the impact of their use in the protection of this ecosystem.

The numerous activities undertaken by both the public and private sectors, and that frame the ENCNB, were undoubtedly an important contribution to improving the level of knowledge and management of natural values.

Moreover, it is noted that the promotion and enhancement of protected areas, depends on the existence of tools to assess, objectively, the result of investments made. The lack of it inhibits any quantitative and qualitative assessment on the subject, thus not allowing to draw conclusions which enhance or redirect the actions taken.

In the case of marine environment the tools for strategic planning and its implementation measures have only recently been adopted, thereby the assessment of the impact of its application in the conservation of this ecosystem remains to be done.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Ensure the planning/programming of specific actions of conservation and biodiversity management developed in the RNAP, to improve their efficiency and thereby strengthen the protection of the natural values at stake;

2 - Increase investment for specific actions of conservation and management of natural heritage in protected areas, based on updated scientific knowledge;

3 - Create a system for a periodic and duly advertised assessment of the technical and administrative performance of protected areas;

4 - To promote, at the national level, the definition and implementation of biodiversity indicators that allow measuring objectively the evolution of the conservation status of species, habitats and ecosystems;

5 - Ensure that all plans and programs to be developed integrate in its design, the indicators needed to evaluate the effectiveness of measures and actions;

42 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

6 - Promote the development and integrated management of marine protected areas, strengthening the institutional cooperation between the bodies with competence in this matter, having in mind the appropriate planning/scheduling of measures/actions to be undertaken;

7 - Disseminate and promote processes of sustainable economic development next to populations and local businesses, including agriculture and forestry, aimed at the rational use of natural resources;

8 - To promote the application of incentives, financial or other that benefit the various actors at the local level, promoting the implementation of sustainable development models;

9 - Follow up the preparation of Charters of Sport in Nature for each protected area.

Strategic Option 4

Ensure the conservation and enhancement of natural heritage sites and of Sites and Special Protection Areas in the process of Natura 2000

The comments produced on Protected Areas (OPE 3) apply in many cases, to the Natura 2000 Network, in particular as regards the development of specific actions for nature conservation and biodiversity, without prior appropriate planning/programming. As mentioned in previous OPE, it appears that the actions taken mainland Portugal in these areas also focused mainly on species of fauna (at the expenses of flora), benefiting the terrestrial scope in relation to the marine which is a situation that needs to be changed. The enlargement process of the Natura Network to the marine environment is a matter to which the highest priority should be given.

As mentioned for other OPE here too there is a lack of indicators to assess the state of species, habitats and ecosystems, and the effectiveness of plans and programs implemented, without which you can not reorient action. Portugal does not yet have an operational monitoring system, thought at a national scale. This situation needs to be addressed in order to effectively implement the Habitats Directive, particularly with regard to periodic reporting of developments in the conservation status of habitats and species.

However, in this OPE, we would highlight the important role of PSRN2000 for the integrated management of Natura 2000 Network areas, which should be seen as a reference point for the planning of operations to be developed. Within the context of PSRN2000, we can not neglect the extreme importance (and urgency) of updating in mainland Portugal, on the mapping of the distribution of natural values, with particular focus on natural habitats.

The importance which should be attributed to the development of management plans for Natura 2000 sites, according to the priorities established in PSRN2000, should also be highlighted.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Strengthening the Information System on Natural Heritage (SIPNAT), making it operational and effective, to support decision making and planning of management and biodiversity conservation actions;

2 - Develop a system for management of information on species and natural habitats of the regions of Macaronesia;

3 - Promote in mainland Portugal, the update of maps on the distribution of natural values, with emphasis on natural habitats;

4 - Ensure that the specific actions for conservation are subject to previous programming, in the medium and long term, with indication on the technical and financial resources to allocate;

5 - Create a National Program for Surveillance and Monitoring, with the definition of performance indicators, oriented in particular to: monitor trends in the state of conservation of natural values (biodiversity indicators), assessment of the effectiveness of management measures adopted on the basis of conservation objectives set, assessing the impacts of actions arising from the implementation of projects, plans and programs and also evaluating the results of the implementation of compensation and mitigation measures during the EIA;

6 - Strengthen measures aimed at the conservation of marine biodiversity, in particular the process of enlargement of the Natura 2000 Network to the marine environment;

7 - Strengthen the training of representatives of the ICNB and other relevant entities in the various Monitoring Committees for the preparation of IGT;

8 - Provide the SIC and SPA with operational management plans in accordance with the priorities established in PSRN2000.

Strategic Option 5

to develop throughout the country specific actions for the conservation and management of species and habitats as well as safeguard and enhancement of landscape and of the notable elements of geological, geomorphological and paleontological

It is notoriously difficult to assess the accomplishment of this OPE, probably due to the width of the ambit of this OPE, whose title "almost depletes" any program for nature conservation and biodiversity.

It shows once again that the various actions, including those on structuring documents (eg books/Red Lists, Atlas and Inventories), focused on species or animal groups, clearly referring to the background the botanical, geological and landscape fields. In this context it is particularly worrying is the lack of a Red List on species of the vascular flora.

It is also evident the lack of action plans for species and habitats of priority conservation status, and of management plans for classified areas in mainland Portugal (see OPE 3 and 4). These plans are of great importance, constituting the guiding documents for the central and local administration, promoting the involvement of stakeholders, namely the civil society, especially citizens, owners, producers and their representative associations, whose active participation is essential for achieving the conservation objectives set.

Regarding the conservation of genetic resources, at this stage the need to invest in administrative measures to ensure the management of access (and benefit sharing) and of the exploitation of genetic resources of flora and fauna should be emphasized.

Regarding the implementation of agro-environmental and forest measures, only eight ITI are up this date implemented under the PRODER. The rate of adherence to these ITI is however very low and given

that the PRODER is the instrument which par excellence allows the integration of biodiversity conservation in agricultural practices in classified areas for the period 2007-2013, it is considered that efforts to increase the levels of adherence to this measure should be optimized, including the forest-environmental component in all ITI and in some ITI in particular (e.g. Serras de Aire e Candeeiros and Costa Sudoeste which recorded the lowest levels of compliance). In this sense, an analysis of the problems that have occurred in the implementation of existing ITI should be made, also counting with the contribution that local information structures can provide.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Identify the structuring documents that need to be developed or revised (e.g. complete Red List of Flora of Portugal, draw up inventories of species of invertebrates and of marine fish, elaborate Atlas of Mammals and Freshwater and Migratory Fish, among others);

2 - Develop an Action Plan for the geological, geomorphological and paleontological heritage;

3 - Develop Action Plans for habitats and species of a priority conservation status;

4 - Finalize the management plans for Wetlands, following up the implementation of the Strategy of Performance of the ICNB for the Conservation of Wetlands;

5 – To regulate the law (Decree-Law 118/2002 of 20 April) on plant genetic resources and associated traditional knowledge;

6 - Ensure through administrative measures the management of access and exploitation of genetic resources of autochthonous flora and fauna;

7 - Implement the National Network for Collection and Recovery of Wild Animals, through the establishment of partnerships;

8 - Complete and approve the revision of the Decree-Law regulating the introduction in the wild of non-indigenous species;

9 - Strengthen coordination of activities between different institutions within the scope of ex-situ conservation;

10 - Analyze and evaluate the suitability of the agro and forest-environment components provided in the ITI in force under the PRODER;

11 - Complete and approve the ITI foreseen in PRODER.

Strategic option 6

PROMOTE THE INTEGRATION OF NATURE CONSERVATION POLICY AND THE PRINCIPLE OF SUSTAINABLE USE OF BIOLOGICAL RESOURCES IN LAND USE PLANNING POLICY AND IN THE VARIOUS SECTORAL POLICIES

Despite the various strategic planning tools, is yet to know its actual effectiveness. In fact, the absence of indicators and evaluation mechanisms, including ecological and economic, are an

obstacle for subsequent monitoring of the implementation of both the ENCNB, and the instruments associated with it.

We still lack an answer in what regards the extent to which priority has been given biodiversity and how seriously the objectives of Nature Conservation and Biodiversity were promoted in the context of the various sectoral strategic planning tools available. In the context of policy integration special attention should be given to PSRN 2000, an essential tool for effective implementation of the Natura Network, which binds public entities. PSRN 2000 establishes strategic guidance and programmatic norms for action by the central and local government. These should also be incorporated into municipal plans for land management (PMOT) and special plans (ESDP).

Given the above to improve the implementation of ENCNB it is recommended:

1 - Develop and implement evaluation mechanisms and indicators - in particular the ecological and economical - that could support the monitoring of the implementation of ENCNB;

2 - Evaluate the effectiveness of various existing sectoral instruments;

3 - Evaluate the need for the preparation of sectoral action plans for the integration of biodiversity, setting goals, measures, tools and resources allocated for its implementation, including identification of indicators and other evaluation mechanisms;

4 - Strengthen mechanisms for monitoring and evaluating the implementation of ENCNB, in particular the functioning of the Interministerial Coordination Commission

Strategic Option 7

IMPROVE COORDINATION AND COOPERATION BETWEEN CENTRAL, REGIONAL AND LOCAL ADMINISTRATION

Despite the legislative architecture in this area includes provisions that encourage and facilitate cooperation among the organs of central, regional and local Administration, it is nevertheless essential to improve coordination between the various bodies relevant to the issue of the nature conservation and biodiversity in order to make this link more effective and efficient. In addition it is desirable to improve the technical skills of the actors involved, at the different levels of the Administration.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Strengthen mechanisms for coordination, information sharing and technical cooperation between central, local and regional level Administration;

2 - Adopt a training program targeted to central, regional and local level Administration, focusing in particular on new responsibilities arising under PSRN2000 and the new Legal Framework for Nature Conservation and Biodiversity.

Strategic Option 8

Promote education and training in conservation of nature and biodiversity;

Despite the many actions on education and training, there is however the need to strengthen the linkages between the various bodies with responsibility for nature conservation and biodiversity in the face of low awareness of public in general and students In particular, despite the progress noted in this area.

However in the Autonomous Regions, it is considered that the results of the environmental education measures developed satisfactorily reach the target audience, whether they are the civil society, students or elder citizens.

Despite the undeniable importance of municipalities in the management of nature conservation and biodiversity, there continues to be a clear deficit in the field of technical training for local Administration.

Finally, and similarly to other OPE, the generality of actions were not assessed as a whole, as to they effectiveness against the objectives, a gap which must be overcome and that requires a multidisciplinary work.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Evaluate the effectiveness of different measures to be undertaken in the field of this OPE;

2 - Strengthen the relationship between the MAOT and the relevant departments of the ME;

3 - To continue the project "School in nature", including through a program "Holiday Camps in Nature", prolonging the period of utilization and the rotation of users and facilities; extend the project to Natura 2000 Network areas, creating host spaces or leveraging existing infrastructures;

4 - Establish training programs for professionals and technicians of local governments integrated in classified areas (see with OPE 7);

5 - Promote the timely programming and support initiatives of education and training, including by video/TV means - documentaries about the natural heritage, classified areas, endangered species, sustainable practices (agricultural/forestry) and opportunities for economic enhancement of endogenous resources, among others;

6 - Develop curricula, of technical nature, in the area of nature conservation and biodiversity, which can be integrated into curricula (technology courses 12th grade) of secondary or primary school, set in rural areas. Primarily in areas classified.

Strategic Option 9

guarantee information, awareness-raising and public participation, and mobilize and encourage civil society

Despite the numerous actions undertaken in this area[43], it is fair to say that the desired objective was not satisfactorily met.

43 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

Once again we are witnessing the development of initiatives which, although classifiable in ENCNB have not been adequately planned, and in this particular case even more troubling, in the sense that it touches the very foundations of any policy for nature conservation and biodiversity, the alliance between the protagonists, the society and the natural supporting infrastructure where their activities occur.

The difficulties experienced in terms of information, public awareness and participation, on nature conservation and biodiversity, have as its first reflex the alienation people experience in relation to natural heritage, discouraging individual and collective attitudes and behaviours more respectful of the natural values, particularly through a more rigorous and demanding mentality of citizens as consumers.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Strengthening the SIPNAT, making it operational and effective;

2 - Advancing new partnerships between business and biodiversity and monitor the actions implemented under the commitments already made;

3 – Reformulate and strengthen the promotion and creation, in a planned manner, of programs for the dissemination of information on the natural heritage and for promoting public discussion of these matters;

4-Increasing the production, in a planned manner, of publicity material about the natural values, including the development of media video/TV/Web information and environmental awareness - documentaries about the natural heritage: Protected Areas, Natura 2000 Network, endangered species, sustainable practices (agricultural/forestry) and opportunities for economic enhancement of endogenous resources;

5 - Strengthen the relationship with Museums and Botanical Gardens.

Strategic Option 10

Enhancing international cooperation

It is worth noting the efforts made, particularly during the Portuguese presidency of the EU Council, to strengthen international cooperation in the area of nature conservation and biodiversity, both at Community level and multilaterally.

Despite the advice on this matter contained in the ENCNB and the various activities developed, this effort appears to be rather inconsequent, since it does not derive, nor from national priorities that endure over time, nor from the allocation of appropriate resources, which inhibits the appropriate monitoring of the various cases. This situation leads mostly to compromises at the international level but not in a strategic way.

In terms of cooperation for development, bilateral ODA on biodiversity is below desired levels. Biodiversity ODA is reduced in absolute terms, and it becomes even more evident by comparison with the amounts allocated by other members of the DAC/OECD[44]. In relative terms, trying to assess the

44 0.9 million USD against an average of 92.4 million USD in 2003/2004. 0.9 million USD against na average of 116.8 million USD in 2005/2006 www.oecd.org/dac/stats/idsonline

importance given to biodiversity by the Portuguese ODA, it appears that the Portuguese bilateral ODA in the area of biodiversity represented only 0.1% in 2003/2004 and 0.4% in 2005-2006 of total bilateral ODA, with the average OECD-DAC members showing the following values 2.5% in 2003/2004 and 2.6% in 2005/2006.

Given the above, to improve the implementation of ENCNB it is recommended:

1 - Promote the establishment of clear priorities and guarantee continuity in terms of international cooperation;

2 - Ensure that national participation in international *fora* strategically and with continuity, strengthening the field of inter-ministerial coordination;

3 - Improve the coordination regarding community processes and multilateral agreements namely its implementation at national level and assess their impact on the nature conservation and biodiversity policy;

4 - Strengthen national cooperation at the transboundary level and within the CPLP;

5 - Improve the effectiveness of exchange and forms of dissemination of information produced in international bodies;

6 - Strengthen synergies between the three Rio Conventions (Conventions on Biodiversity, Climate Change and Desertification).

Conclusion

This assessment shows some progress in the implementation of ENCNB in some particular areas of its OPE, albeit with delays regarding the goals set forth in ENCNB.

Although it is essential to perform an assessment of the implementation of ENCNB supported by indicators to assess the state of species, habitats and ecosystems, and the effectiveness of plans and programs implemented, it is considered that the numerous activities, framed in the objectives of both the ENCNB and the ICNB and of other public and private bodies and civil society, have contributed to the enhancing knowledge and to define measures for the sustainable management of natural heritage values.

The progress achieved is related to the creation and consolidation of the RFCN[45], as enshrined in the new Legal Framework for Nature Conservation and Biodiversity (2008). In this respect a special mention should be made regarding the publication in mainland Portugal of Land Use Plans of all protected areas of national scope, instruments that establish the policy of safeguarding and conservation envisaged for each of those areas. Also a special mention to the development of the Sectoral Plan Natura 2000 Network, both in mainland Portugal and in the Azores, which is an important contribution to the management of the areas encompassed in this Network of Community importance and also the revision

45 7,8% of terrestrial Portugal is classified as national protected areas. 10, 3% is classified as Special Protection Areas (SPA), and 17,01% is classified as Sites of Communitary Importance (SCI). The total areas classified (excluding overlaps) is 21, 8% of the terrestrial mainland Portugal.

of the legal regime of the REN aimed at the identification of uses and actions compatible with the functions of the REN, extending the application of those rules to protected areas.

By comparison with the previous RURIS, the current rural development policy, embodied in PRODER, represents a considerable increase of the level of mandatory measures in the area of promotion of sustainable agricultural and forestry production which are compatible with the interests of nature conservation. This assertion is largely due to the evaluation made the previous model (RURIS) and to the information produced in the preparation of the Sectoral Plan for the Natura 2000 Network.

The current Common Agricultural Policy (CAP) also emphasizes, in the context of direct aid, the sustainable agricultural production from the environmental point of view, while maintaining full compliance with the directives on nature conservation, through the conditionality of aid. Similarly, certification of environmentally sustainable modes of production and its marketing promotion adds value to the preservation of biodiversity.

In the case of marine environment, the first steps are being taken towards the adoption of measures for the protection of marine ecosystems, especially through the implementation of the National Strategy for the Seas[46]. The designation of marine protected areas, particularly in the context of enlargement of Natura 2000 Network to the sea and under OSPAR Regional agreement is a process of the utmost priority.

The progress achieved is also based in the legislative effort taken, which is considered sufficient by most sectors involved in providing, in essence, answers to most of the objectives of the ENCNB. However, part of the legislation is very recent (e.g. legislation on the marine environment) and there are still several pieces which need to be reviewed or regulated.

Despite some improvements, notably through partnerships established in the framework of the B & B (Business and Biodiversity Initiative), the engagement of civil society on nature conservation and biodiversity issues is still lagging behind. Forty one companies and organizations from different economic sectors, whose activities constitute an important contribution in promoting biodiversity as a factor for competitiveness and economic sustainability, are currently involved in this initiative. It is also a new way to finance nature conservation and biodiversity, through the investment made by other relevant partners, thereby complementing the investment from the state budget.

Despite this progress, and according to information available on the status of conservation of species and natural habitats of Community interest (encompassed in the National Report on Implementation of the Habitats Directive, 2001-2006), and, in the case of if species of vertebrate fauna of the information contained in the Red Book of Vertebrates of Portugal (2005), most species and habitats present in mainland Portugal were considered to have an unfavourable/inadequate conservation status[47]. However in the region of Macaronesia, a significant proportion of natural habitats and about 20% of total species of flora have a favourable overall assessment.

46 Detailed information can be found in the report of the assessment of the ENCNB (available in portuguese) in: http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Documentos+de+referência/Estratégia+Nacional+da+Conservação+da+Natureza+e+da+Biodiversidade/

47 Further information on Executive Report of the ICNB (2008) on the implementation of the Habitats Directive in Portugal, where an analysis is made on the overall assessment of the conservation status of natural values of Community importance, especially the need to refine and clarify the criteria at EU level.

Given this situation and the similarity of findings made in the interim evaluation of the EU Action Plan on Biodiversity[48], as well as the preliminary results of a study on The Economics of Ecosystems and Biodiversity (TEEB[49]), among other sources, we can conclude that the situation regarding biodiversity loss is deeply worrying and, like the rest of the world, Portugal will not meet the goal of halting biodiversity loss by 2010 (European Union target).

The keep the same direction and form of action (business as usual) Portugal will not even come close to this goal and is therefore important to perform a large investment in nature conservation and biodiversity in the coming years.

The sectoral integration is the core issue and upon which the successful implementation of the ENCNB depends. As such, the "promotion of the integration of nature conservation policy and the principle of sustainable use of biological resources in land use planning policies and other sectoral policies" as recommended in OPE 6 of the ENCNB continues to represent the most significant challenge.

However, in terms of policy integration it is difficult to demonstrate the progress made in terms of its effectiveness in relation to nature conservation and biodiversity at this point in time.

Thus it becomes crucial to make a periodic/continuous assessment of progress made by different sectoral policies with regard to the integration of nature conservation and biodiversity requirements. Fur such it is necessary to define a framework of monitorization and evaluation, that includes relevant and appropriate indicators, which allow to estimate whether the Plans/Programmes taken generated benefits for biodiversity or not.

Similarly, in relation to procedures for assessing the status of species, habitats and ecosystems, it should be mentioned that Portugal does not have a system for surveillance and monitoring, operating nationwide, jeopardizing the effective enforcement of established norms, in particular concerning the periodic report in the context of the Habitats Directive.

In summary, an apparent sufficiency of legal instruments is hampered it with a near absence of mechanisms to assess its real impact (effectiveness of the measures resulting there from) in nature conservation and biodiversity.

Another serious limitation, common to all sectors involved, (particularly the MAOT/ICNB, while national authority of nature conservation and biodiversity), deals with a recurring lack of multiannual programming/planning, in relation to actions/initiatives to be developed. This multiannual programming/planning should define specific objectives, quantified targets (long-term and intermediate), means, budget available and responsible entities, allowing, among other things, to make better use of available resources and a higher degree of operability.

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48 "The EU will not meet its target of halting the loss of biodiversity in the EU by 2010 on the basis of current efforts. This will require significant additional commitment by the EC and its MS over the next two years if we are even to approach this objective"

49 A study on "The economics of ecosystems and biodiversity" (T E E B) concludes that, in a "business as usual" scenario, the current decline in biodiversity and related loss of ecosystem services will continue and even accelerate. Pavan Sukhdev, Study Leader of T E E B and Managing Director and Head of Deutsche Bank's Global Markets noted that "by 2050 we will be faced with an estimated further loss of 11% of the natural areas that still existed in 2000. Almost 40% of the land currently under low-impact forms of agriculture could be converted to intensive agricultural use. An estimated 60% of coral reefs could be lost by 2030 through fishing, pollution, diseases, invasive alien species and coral bleaching due to climate change. This loss of biodiversity and ecosystems is a threat to the functioning of the planet, our economy and human society. The annual welfare loss generated by the loss of ecosystem services by 2050 in a 'business-as–usual' scenario has been estimated at 6% of global GDP".

In view of the abovementioned it becomes effectively impossible to assess, in a systematic and objective way the relevance and convenience of conservation activities carried out in Portugal.

In effect, while the ENCNB is not taken as a reference to be taken into consideration when planning/scheduling activities/initiatives to be undertaken by different sectors, including the environment, spatial planning and regional development, it will remain a repository of good intentions, despite some positive developments registered.

Finally, it is recommended that in the future and in the process of revising the ENCNB, a redefinition of the OPEs is undertaken, taking into account, namely:

1 - The recommendations contained in this document;

2 - The need to set quantified targets for each OPE (long-term and intermediate), and available resources, budget(s), and entity(ies) responsible for its implementation;

3 - The new challenges posed to biodiversity, such as the economic valuation of ecosystem services and climate change, particularly as regards the adaptation measures, among others;

4 - The need for coordination with the priorities outlined in the Biodiversity Action Plan of the European Union.

Appendix I - Information concerning reporting Party and preparation of national report

A. Reporting Party

Contracting Party	Portugal
NATIONAL FOCAL POINT	
Full name of the institution	Instituto da Conservação da Natureza e da Biodiversidade, I.P.
Name and title of contact officer	Dr. Pedro Ivo Arriegas
Mailing address	Rua de Santa Marta, 55 – 1169-230 Lisboa Portugal
Telephone	00 351 21 350 7900
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E-mail	arriegasp@icnb.pt
SUBMISSION	
Signature of officer responsible for submitting national report	
Date of submission	

B. Process of preparation of national report

The present report was elaborated on the basis of information contained in the:

- Report on the Evaluation of the Implementation of the National Strategy for the Conservation of Nature and Biodiversity (ENCNB), 2010;
- ICNB contribution to the OECD Environmental Performance Review of Portugal, 2010;
- Portugal Country Profile to the final assessment towards implementing the EU Biodiversity Action Plan, 2010;
- National report under Article 17 of the EU habitats Directive, 2008.

The Report on the Evaluation of the Implementation of the ENCNB was subject to a formal process of public consultation. For the contribution to the final assessment of the implementation of the EU Biodiversity Action Plan, all relevant stakeholders were invited to contribute.

Appendix II - Progress towards Targets of the Programme of Work on Protected Areas

The present compilation of information on protected areas was systematized in sixteen items on the basis of the Work Programme on Protected Areas of the CBD. It relates to steps taken since 2007.

When considered relevant subdivisions were created. For items on "promoting equitable benefit sharing" and "Assessment and monitoring of the status and trends in protected areas" there is no relevant information to be reported.

Goal 1.1: To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals

1. National Network of Protected Areas

- Natural Monument of Cabo Mondego – Created by Reg. Decree 82/2007 de 3 of October.
- Classified Site of Açude da Agolada; Classified Site of Açude de Monte da Barca; Classified Site of Lápias da Granja Serrões; Classified Site of Campo de Lápias de Negrais; Classified Site of Fonte Benémola; Classified Site of Gruta do Zambujal; Classified Site of Montes de Santa Olaia e Ferrestrelo; Classified Site of Monte de S. Bartolomeu; Classified Site of Rocha da Pena – ongoing reclassification, compulsory under Decree-Law 142/2008.
- Natural Monument of Portas de Ródão – Created by Decree n.º7/2009, de 20 of May
- Paisagem Protegida Local do Estuário do Douro – Created by Determination of the Municipal Assembly of Vila Nova de Gaia, (Regulation 82/2009, 12 of February 2009, D.R 2.ªsérie). No request to be included in the RNAP was submitted.
- Local Natural Reserve of Paul de Tornada – Created by Determination of the Municipal Assembly of Caldas da Rainha (Aviso n.º 11724/2009, 2 of July 2009, D.R. 2.ªsérie)
- Regional Protected Landscape of Vila do Conde Coastline and Ornithological Reserve of Mindelo; the Municipal Assembly approved its creation in the 21st of September 2009, however, the publication of the Regulation did not occur yet because a requested was submitted to the ICNB for inclusion in RNAP and the positive opinion is recent.
- In RAA the Regional Decree-Law 15/2007/A, of 25th of June, undertook a revision of the legal system of classification, management and administration of protected areas in the Azores. It was adopted a coherent ecological network concept rather than isolated management units, in addition to enabling effective identification of assets to be protected, whether natural, scenic or cultural. This model closely follows the international scientific guidelines. This translates into the creation of the Regional Network of Protected Areas with Parks, one for each each island, and a Marine Park convering the archipelago.[50]

50 http://acores.wikia.com/wiki/%C3%81reas_Protegidas_dos_A%C3%A7ores

2. Network of Marine Protected Areas

- The Legal Framework for Nature and Biodiversity Conservation (Decree-Law No. 142/2008, of 24th of July) established the national network of marine protected which currently includes the following protected areas:
    - Arquipélago das Berlengas Natural Reserve
    - Arrábida Natural Park
    - Sudoeste Alentejano e Costa Vicentina Natural Park
    - Parque do Litoral Norte Natural Park
    - Lagoas de Santo André e Sancha Natural Reserve

- SPA of Berlengas – the process of enlargement of the SPA of Berlengas is ongoing. This SPA will be extended eastwards in the direction of Cabo Carvoeiro and adjacent areas.

- Ongoing designation of four Marine Protected Areas on the continental shelf beyond Portugal EEZ to be included in the RNAP, OSPAR network of protected areas and to be designated as SCI.

In RAA the Regional Decree-Law 15/2007/A, of 25th of June, undertook a revision of the legal system of classification, management and administration of protected areas in the Azores. It created a Marine Park convering the archipelago. Also in the RAA the following areas are listed as OSPAR Convention protected areas:

- Rainbow hydrothermal vent
- Formigas Bank
- Corvo Island
- D. João de Castro seamount
- Lucky Strike hydrothermal vent
- Menez Gwen hydrothermal vent
- Sedlo seamount
- Faial-Pico channel

In RAM the Network of Marine Protected Areas of Porto Santo was established recently (2008) and the onshore part of all its islands and marine areas surrounding the Islet of Cal or De Baixo and Islet De Cima. This network is managed by the Regional Secretariat of Environment and Natural Resources (SRA), through the Natural Park of Madeira (SPNM).[51]

3. Natura 2000 Network

The European Ecological Network (Natura 2000) is structured around Sites of Community Importance (SCI) / Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

[51] Regional Decree Law No. 32/2008/M, of 13th of August

As of July 2009, Portugal has designated 96 SCIs / SACs, with a total area of 16.788 km², totalling 17.4% of the country's terrestrial area. There are 30 sites with a marine part; the marine SCI area totals 1173 km². The number of SPAs is 59 with a total area of 10.475 km², totalling 10.7% of the country's terrestrial area. The number of marine SPAs is 10, with a marine area of 762 km².

SCIs /SACs (Habitats Directive):		SPAs (Birds Directive):	
Number of sites	96	Number of sites	59
Total area sites (km²)	16,788	Total area sites (km²)	10,475
Terrestrial area (%)	17.4	Terrestrial area (%)	10.7
Number of marine sites	30	Number of marine sites	10
Marine area (%)	-	Marine area (%)	-

At present there is no single agreed definition for Marine Sites. Due to different definitions of 'Marine Sites' adopted by different European Commission Services, the figures presented here for marine Natura 2000 sites might differ slightly from figures provided elsewhere. The percentage for marine areas is not available.

51% of Natura 2000 sites have management plans completed, 3% of sites have management plans in preparation or revision and 49% sites have no management plan completed or in preparation.

The values of the percentages identified in the table above take into account all the areas designated under the Birds and Habitats Directives, i.e. a total of 155 classified areas.

The process of enlargement of the SPA of Berlengas is in progress. This SPA will be extended eastwards in the direction of Cabo Carvoeiro and adjacent areas.

Goal 1.2: To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function.

Regarding the integration of biodiversity into other policies and sectors, one should stress the efforts directed to the understanding and mitigation of direct impacts of linear infrastructures in natural values, particularly in terms of impacts on ecological connectivity and fragmentation that they impose on the territory. In this regard, the protocols of cooperation established between the transmission and distribution of electrical power companies, the ICNB and ENGOs, started in 2003, and under which a pioneering work was developed on the characterization of the current situation of the impacts of transmission and distribution lines of electricity in birds and of compatibility of power lines with the protection of birds, monitoring the effectiveness of the corrective measures introduced by testing new types of structures with minimal impact and implementation of operations to fix lines identified as hazardous to birds. Guides to analyse projects were elaborated, including projects for installation of overhead lines of distribution and transmission of electricity, and roads and communications in order to standardize the solutions proposed at the stage of EIA or licensing processes and ensure the effectiveness of these solutions.

Activities likely to create adverse impact on the SPA or SCI/SAC were subject to regulation and/or specific legislation and integration into other sectoral policies:

- Hunting activity: As most relevant results in this sector, the promotion of hunting planning across the country should be stressed, implementing models of sustainable management for game species. The objective of ending the disorganized hunting regime was accomplished, and currently only about 10% of the hunting land is in this situation. The new system allowed for the integration in the hunting law of procedures to address the specificity of classified areas and to preserve their natural values, particularly at the level of the approval of hunting areas and their development plans and game management. It should be noted as an indication that the national authority for nature conservation and biodiversity (ICNB) currently supports and monitors the management of about 33% of all hunting zones at national level, corresponding to approximately 1300 Hunting Zones. Still in the same context, it is noted that the development plans of protected areas also incorporate provisions to regulate the practice of hunting.

- Forest Activity: For this activity a normative document was prepared, the proposal for a "Handbook to support ICNB formal opinions regarding forestry activities", whose contents guide the development of forestry projects and the decision to be taken in the face of ecological values of the areas covered.

- Fishing: The laws governing this activity define, inter alia, prohibited fishing methods, the mesh size in the case of the use of nets, closed seasons, minimum size of specimens to capture, the method for maintaining live specimens of any size during a competition, for its devolution to the wild.

- Whale watching: the activity of whale watching in the waters of mainland Portugal is regulated by Decree Law No 9/2006 of January 6.

- Alien species of flora and fauna: its introduction in the wild is regulated since 1999 (Decree Law No. 565/99 of December 21, currently under review).

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Spatial planning is recognized as an essential tool for nature conservation and biodiversity, in the sense that it disciplines the use of space giving due regard to the geographical distribution of natural values in order to harmonize their safeguard and the protection of land and sea-scape. The integration of the principles of conservation and sustainable use of nature and biodiversity in land-use policies are enforced, particularly through Instruments of Land Management (IGT).

The IGT applicable to the SCI/SAC and SPA must therefore ensure the conservation of habitats and populations of the species who were on the basis of the classification of these areas. In order to achieve these aims, the PSRN2000, an instrument for achieving the national policy on conservation of biological diversity, aims to the safeguard and integrated development areas classified as SPAs and SCIs, as well as to the maintenance of species and habitats in a favourable conservation status in these areas, identifying a set of strategic management guidelines for classified areas to integrate the IGT (municipal land use plans (PMOT) and special land use plans (PEOT)) applicable to mainland Portugal, within a maximum of six years after its adoption.

Decree-Law No. 142/2008, of 24th July, establishes the legal regime of nature conservation and biodiversity. It consolidates the legal nature of the RFCN established by ENCNB in 2001, which consists of the core areas of nature conservation and biodiversity integrated into the National System of Classified Areas (SNAC) and the areas of the National Ecological Reserve (REN), the National Agricultural Reserve (RAN) and the Public Water Domain (DPH), while areas that provide or safeguard the genetic

link and exchange of wild populations of species between different nuclear areas of conservation, contributing to the adequate protection of natural resources and the promotion of spatial continuity of the ecological coherence of classified areas and the connectivity of biodiversity components across the territory, and for a proper integration and development of human activities. Decree-Law No. 140/99 of April 24 (incorporating into national law the EU Birds and Habitats Directives), republished by Decree-Law No. 49/05 of February 24, suggests that the instruments of land use planning and development policies should maintain and, where possible, develop the landscape elements of fundamental importance for fauna and flora, with a view to improving the ecological coherence of Natura 2000, including through incentives for their proper management, considering landscape features of major importance for wild fauna and flora the elements that by their linear and continuous structure, such as rivers, streams and their banks or the traditional systems for marking field boundaries, or by their role as linking spaces, such as ponds, lakes or forests, are essential for the migration, dispersal and genetic exchange of wild species.

The development and achievement of these objectives, to be promote in the IGT in accordance with Decree-Law no. 46/2009 of February 20 by identifying the ecological structure (incorporating critical areas, values and systems to environmental protection and rural and urban development) has already been embodied in the National Programme of the Land Use Planning Policy (PNPOT) and at regional level (by setting the Regional Structure of Environmental Protection and Enhancement that includes the areas and basic ecological connections at the respective regions). Although at different scales, intermunicipal land use plans and sectoral plans will define the relevant principles, guidelines and measures in order to achieve the policy guidelines relating to the areas of environmental protection and enhancement to ensure the safeguard of ecosystems and the intensification of biophysical processes.

Based on the above framework, the authority of nature conservation and biodiversity assured its representation in the elaboration of IGT (PROF, PROT and PDM), providing the necessary information for the development and protection of ecological corridors, based in particular, in the strategic guidelines set out in PSRN2000.

In the particular case of portuguese islands, the RAA, given the variety of situations arising from the implementation of Natura 2000 and the need to adopt a model based on management criteria that standardizes the diversity of names of areas classified as protected and that focus skills in a territorial unit of the island as a management base unit, undertook a revision of the legal system of classification, management and administration of Protected Areas (Regional Legislative Decree No 15/2007/A of June 25). This Diploma covers nuclear areas of nature conservation areas that correspond to the most important from the point of view of conservation and biodiversity and complementary ecological areas, which correspond to key biophysical structures present in the area that will ensure the continuity of ecological processes between the core areas and inland and coastal areas, taking special attention to water system components in their surface and groundwater;

The Natural Parks of the Island (currently 6 published and 3 in the process of publication) and the Marine Park in the Azores Archipelago, necessarily, having a land use plan of a Special Land Use Plans nature, embody the management base unit of the Regional Network of Protected Areas of the RAA. Moreover, in view of the legal adequacy of REN to the specificities of this region the Regional Ecological Reserve (RER) will be created and defined contributing to the sustainable development of endogenous resources and their values.

In the RAA, as after the public participation the proposal of the Regional Land Use Plan (PROTA) is in the Legislative Assembly of the Azores awaiting approval, where among others, are contemplated

complementary ecological areas, corresponding to the principal biophysical structures present in the territory that will ensure the continuity of ecological processes between the core areas and coastal and inland areas.

The RAM, when designing and creating its protected areas, whether the Natural Park of Madeira (PNM), Partial and Integral Natural Reserves, or SCIs, sought to include all habitats, flora and fauna of biological importance. These protected areas are found from the coast (covering areas with high population density) to the interior of the islands (where there are areas of laurel forest and uplands). Parks and reserves created have an important role in protecting biodiversity and ecosystems while ensuring ecological connectivity, since the total area of 49,443 ha of protected areas in RAM allow the flow of fauna and flora through ecological corridors that facilitate the connection between the coast the interior of the islands, also contributing to the preservation of key natural resources.

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- **National Ecological Reserve** (REN) – Review of previous diploma: Decree-Law No. 166/2008, of August 22.

- **National Agricultural Reserve** (RAN) – Review of previous diploma: Decree-Law No. 73/2009 of March 31.

The REN and RAN diplomas are tools which aim to ensure continuity of structure and function of the natural systems that guarantee life of present and future generations. These tools are integrated in the processes of planning and management, with the advantage of constituting a network structure that is territorially implemented. They condition the process of land use planning in the national to local level. Its regulations and enforcement have been improved.

The National Ecological Reserve (REN), should be mentioned as it contributes to the occupation and sustainable use of territory, making a major contribution to the connectivity and ecological coherence of RFCN and its integration into the PDMs, since it is a case of public utility restriction to which a particular territorial regime is applied by establishing constraints on occupation, use and transformation of soil. It also identifies the uses and activities compatible with the aims of the regime for the various types of areas which prevails over the regulation of use, occupation and transformation of soil set in PMOT, which bind individuals. At the sectoral level it is worth mentioning the figure of the Regional Plans for Forestry Planning (PROF) that provide a concept of “ecological corridor” as bands while promoting the connection between fragmented forest areas, favoring genetic exchange, essential for maintaining biodiversity. These corridors shall be subject to special treatment under the Forest Management Plan (PGF), serving to substantiate the various networks and ecological structures. Thus, each PROF defines its component of the national network of forest ecological corridors and a sets guidelines for defining, in each region and for each PGF, to be applied to management units, areas for the conservation of habitats, wild fauna and flora, ie the contribution of forests to maintain biological and genetic diversity. In this context the following main sub-functions are included: the conservation of classified habitats, the conservation of protected species of flora and fauna, the conservation of geomonuments and the conservation of genetic resources. In particular it is considered that:

1 - The ecological corridors contribute to the formation of meta-populations of communities of fauna and flora, aiming to connect populations, nuclei or isolated elements, and integrate the main points of connection, defined in the summary of each letter PROF, with the maximum width of 3 km;

2 - The rules to be applied in the forest planning for ecological corridors are the ones considered for the functions of protection and conservation, including the subfunction protection of the river network, with management objectives and forestry interventions for management and restoration of stands in riparian galleries as well as the subfunction of conservation of genetic resources, with the objective of maintaining the genetic diversity of the forest and of mantaining and promoting their own corridors.

3 - The ecological corridors should contribute to the definition of the municipal ecological structure within the PMOT and be subject to special treatment under the PGF applied to public or private management units.

4 - These corridors must be matched with regional networks of defense against forest fires, which are prioritary. At a level of greater detail, we highlight the implementation of the figure of game reserves (sites where hunting is prohibited) as a contribution to the achievement of ecological connectivity in order to safeguard the main migration corridors to allow to keep the population flows of species hunted or not, on their migrations. Moreover, in the main places of concentration of migratory flocks there is a ban on hunting to ensure the necessary tranquility for the success of this behavioral strategy.[52]

Goal 1.3: To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries

- Montesinho, Guadiana, Ria Formosa, Tejo Internacional, Douro Internacional, Castro Marim, Malcata – areas with joint projects with Spanish Protected areas.
- Montezinho, Douro Internacional – GIS project to standardize and coordinate systems within a transboundary cooperation protocol in the context of forest fires
- Natural Park of Tejo Internacional – memorandum of understanding for a coordinated management, signed at the Iberian Summit of Zamora in 2008 that foresees the designation of a transboundary natural park
- Transboundary Park of GERES-XURES – the proposal for a submission to the UNESCO as a Biosphere Reserve was agreed in 2009.
- Transboundary Park of GERES-XURES – ongoing work on proposal for an application of Gerez Xerez as a transboundary site of the Natura Network.
- Natural Park of Montesinho Pena Maceira – ongoing work on proposal for an application of a transboundary project.
- Project - MARMAC, Knowledge, Promotion and Enhancement for Sustainable Use of Marine Protected Areas of Macaronesia, coordinated by the IMAR Centre of the University of the Azores and involving

[52] Regime Jurídico da Conservação da Natureza e da Biodiversidade Regime Jurídico da Reserva Ecológica Nacional; Planos Regionais de Ordenamento Florestal
http://www.dre.pt/pdf1sdip/2008/07/14200/0459604611.PDF
http://dre.pt/pdf1sdip/2008/08/16200/0586505884.PDF
http://www.afn.min-agricultura.pt/portal/gestao-florestal/

partners from the Azores and the Canaries Islands allowing to continue studies and help to promote value and awareness on the marine biodiversity of the region of Macaronesia.[53]

Goal 1.4: To substantially improve site-based protected area planning and management

1. Land Use Planning

- Legal status of territorial management instruments - in-depth review through Decree-Law No. 316/2007 of 19 September resumed by Decree-Law No. 46/2009 of 20 February.
- The law of land use planning provides for the establishment of Joint Committees for Monitoring, Coordination Meetings, and Discussion of Land Use Plans.
- The duration of the plans is ten years.
- Listing of approved land use plans (from 16 May 2005 to March 30, 2009):
  - Land Use Plan of the Natural Parks of: Alvão (RCM No 62/2008); Arrábida (RCM No 141/2005); Douro Internacional (RCM No 120/2005); Litoral Norte (RCM No 175/2008); Montesinho (RCM No 179/2008); Serra de S. Mamede (RCM No 77/2005); Tejo Internacional (RCM No 176/2008)
  - Land Use Plan of the Natural Reserves of: Berlengas (RCM No 180/2008); Dunas de S. Jacinto (RCM No 76/2005); Estuário Sado (RCM No 182/2008); Estuário Tejo (RCM No 177/2008); Lagoas de Santo André e Sancha (RCM No 117/2007); Paul do Boquilobo (RCM No 50/2008); Castro Marim Vila Real Santo António (RCM nº 181/2008);
  - Land Use Plan of the Protected Landscapes of: Arriba Fóssil Costa Caparica (RCM No 178/2008; Serra do Açor (RCM No 183/2008).
  - Land Use Plan of the National and Natural Parks of: Peneda-Gerês (RCM No 121/2007); Ria Formosa (RCM No 78/2009); Serra da Estrela (RCM No 83/2009); Serra de Aires e Candeeiros; Sintra Cascais (RCM 1-A 2004); SW Alentejano e Costa Vicentina;
  - Land Use Plan of the Protected Landscapes of: Albufeira do Azibo; Côrno do Bico; Lagoas de Bertiandos de S Pedro Arcos; Serra de Montejunto.
- Land Use Plan of Vilamoura – Vila Real de Sto António Coastline - Council of Ministers Resolution No 103/ 2005, of 27th June.
- Incorporation of SEA in Land Use Plans - Decree-Law No 232/2007, of 15th June.

In RAM during 2009 the following Spatial and Management Plans were adopted:

- Maciço Montanhoso Central (PTMAD0002) Council Resolution of Government of RAM No 1411/2009, of 27th of November.

53 http://www.horta.uac.pt/projectos/macmar/ogamp/marmac.html

- Floresta Laurissilva da Madeira (PTMAD0001) Council Resolution of Government of RAM No 1412/2009, of 27th of November.

- Ilhas Desertas (PTDES0001) Council Resolution of Government of RAM No 1293/2009, of 2nd of October;

- Ilhas Selvagens (PTSEL0001) Council Resolution of Government of RAM No 1292/2009, of 2nd of October;

- Ponta de São Lourenço (PTMAD0003) Council Resolution of Government of RAM No 1294/2009, of 2nd of October;

- Ilhéus do Porto Santo (PTPOR0001) Council Resolution of Government of RAM No 1295/2009, of 2nd of October;

2. Management Plans

- Methodology for the Preparation of Management Plans
  - The Terms of Reference for the preparation of management plans for Protected Areas were prepared. A participatory method is foreseen where entities with direct or indirect influence in the concerned area are involved from the stage of diagnosis of the situation until the monitoring stage during the implementation of plan. The expected duration of the plans is five years.
- Elaboration of Management Plans
  - Two management plans were already drawn up with a participatory approach, involving stakeholders in the area: Lagoa Pequena (Lagoa de Albufeira) and Natural Park of Vale do Guadiana.
  - Six management plans in its final stages with participatory methodologies: Natural Park of Litoral Norte and Natural Reserves of Paul de Arzila, the Tejo Estuary, the Sado Estuary, Lagoas de Santo André e Sancha, and the Sapal de Castro Marim e Vila Real de Santo António.

In RAM, during 2009, the following programs of management and conservation measures for SACs of Natura 2000 Network were adopted:

- Pico Branco – Porto Santo (PTPOR0002) Order No. 73/2009, of 24th of June, by the Regional Secretary of Environment and Natural Resources;

- Moledos (PTMAD0006) Order No. 71/2009, of 24th of June, by the Regional Secretary of Environment and Natural Resources;

- Achadas da Cruz (PTMAD0005) Order No. 72/2009, of 24th of June, by the Regional Secretary of Environment and Natural Resources;

- Ilhéu da Viúva (PTMAD0004) Order No. 70/2009, of 24th of June, by the Regional Secretary of Environment and Natural Resources;

- Pináculo (PTMAD0007) Order No. 69/2009, of 24th of June, by the Regional Secretary of Environment and Natural Resources.

3. Charts of Nature Sports

- Elaboration of Charts of Sports in nature
  - Natural Park of Sintra-Cascais –The Charter of Sports in Nature and the respective regulation were published (Decree No. 53/2008 of 18 January);
  - There are five Charters of Sports in Nature and their respective regulations being elaborated Nacional Park of Peneda-Gerês, Natural Park of Northern Coastline, Natural Reserves of Tejo Estuary, Sado Estuary, of Lagoas de Santo André e Sancha, and of the Sapal de Castro Marim e Vila Real de Santo António.

4. Monitoring Plans

- Specific Monitoring Plans are implemented in the context of accompanying measures prescribed in the Environmental Impact and Incidences Assessments.
- National Center of Bird Ringing - strengthening of network of constant effort in classified areas.
- The National Programme of Monitorization of Wintering Waterfowl, coordinated by the ICNB involves regular actions in the most important wetlands for these species, particularly estuaries, marshes, ponds and reservoirs. This program includes countings of Anseriformes and Gruiformes in the period between October and March each year.

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The application of management guidelines and other program standards set out in PSRN2000 are a responsibility of central and local administration, to be ensured by various instruments and mechanisms, whether through (a) the creation or revision of the legislative framework, (2) revision or amendment of other instruments of territorial management, including municipal plans, PEOT and plans of sectoral or regional origin, (3) elaboration of territorial management plans, (4) development of action plans for targeted species or habitats, (5) integration and orientation of programmatic or sectoral policy such as, for example, the ones framed in the Rural Development Programme Mainland Portugal (2008-2013), in water or transports policy or in coastal and marine policies, (6) drafting of agreements, partnerships or contractual measures (with public or private actors) and also through the establishment of administrative measures.

Transiently and while the integration of PSRN2000 is not finished, either through the development and/or review of the various IGT or through the adoption of other mechanisms provided for therein, in areas of SCI and SPA and in the face the results of a preliminary assessment of possible negative impacts that may be the result of its implementation, the following actions, acts and activities are subject to prior approval by the ICNB as the nature conservation and biodiversity authority:

- The completion of construction works outside the urban perimeters;

- Change to current land use in continuous areas over 5 ha;
- Changes in vegetation cover resulting from change between types of agricultural and forestry use in continuous areas over 5 ha;
- Changes to the morphology of the soil, with the exception of those resulting from normal agricultural and forestry activities;
- To change the current use of marine areas or wetlands;
- The deposition of scrap and solids or liquid waste;
- The opening of new channels of communication;
- The installation of infrastructure for electricity, telephone, telecommunications, transportation of natural gas or other fuels, sanitation and use of renewable energy or similar outside the urban perimeter;
- The practice of organized motorized activities and sports outside of urban perimeters;
- The practice of alpinism, climbing and mountaineering;
- The reintroduction of indigenous species of fauna and flora;

Moreover, the decision on actions, plans or projects not directly related to the management of a SCI or a SPA and not needed for such management, but that may affect that area, either individually or in combination with other actions plans or projects, is dependent on the conclusions of an evaluation process of environmental incidences assessment in what regards the conservation objectives of that zone. This assessment may take the figure of EIA or AincA.

All Natura 2000 sites in mainland Portugal are under ICNB management.

Other management and planning tools also apply to all Natura 2000 sites in mainland Portugal..[54]

Goal 1.5: To prevent and mitigate the negative impacts of key threats to protected areas

1. Strategic Environmental Assessment

[54] Natura 2000 Network Sectoral Plan– Resolução do Conselho de Ministros n.º 115-A/2008 de 21 de Julho
Study on the Integration of Natura 2000 Network Management in the National Strategy for Rural Development 2007-2013
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Ordenamento+e+Gestão/Plano+Sectorial+da+Rede+Natura+2000/
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Ordenamento+e+Gestão/Planos+de+Ordenamento+das+Áreas+Protegidas+%28POAP%29/
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Ordenamento+e+Gestão/Planos+de+Ordenamento+da+Orla+Costeira+%28POOC%29/
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Ordenamento+e+Gestão/Infra-estruturas+Lineares+-+Manuais+de+Apoio/
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Ordenamento+e+Gestão/Ordenamento+e+Gestão+Cinegética/
http://www.horta.uac.pt/projectos/macmar/life/index.html
http://www.horta.uac.pt/projectos/macmar/ogamp/ogamp.html
http://www.horta.uac.pt/projectos/macmar/ogamp/index.html
http://www.spea.pt/ms_priolo/pt/index.php?op=plano_gestao;
http://www.dre.pt/pdf1sdip/2008/07/13901/0000200451.PDF
http://portal.icnb.pt/ICNPortal/vPT2007/O+ICNB/Rede+Natura+2000/Medidas+Rede+Natura+2000+PRODER.htm

Strategic Environmental Assessment (SEA) of plans and programs is a tool for impact assessment at the strategic level and has as its main objective to incorporate a range of environmental values in the decision making procedure on plans and programs during their preparation and before of its adoption. It ensures a strategic vision and a broad perspective on environmental issues through global integration of biophysical, economic, social and of relevant policies in a sustainability framework. The legal framework of the SEA results of Decree-Law No. 232/2007, of June 15.

2. Environmental Impact Assessments

The Environmental Impact Assessment (EIA) is a preventive tool of environmental and spatial planning policy that ensures that the likely consequences on the environment of a particular investment project are assessed and taken into account in its approval process. Its application includes the preparation of an Environmental Impact Study (EIS) and conduct an administrative process of the responsibility of the MAOT through Spatial Planning Authorities of EIA. This process includes, necessarily, a component of public participation, which is of particular significance in the whole process. The EIA process extends beyond the implementation of the project, called the post-assessment.

3. Environmental Incidences Assessment

The actions, plans or projects not directly connected with the management of a SCI, a SPA or a SAC and not needed for such management, but that may affect that area significantly, individually or in combination with other actions, plans or projects should be subject to environmental incidence assessment in relation to the conservation objectives of the zone.

Goal 2.1: To promote equity and benefit-sharing

No relevant information to report.

Goal 2.2: To enhance and secure involvement of indigenous and local communities and relevant stakeholders

- Strategic Councils – the model of management of protected areas includes the establishment of Advisory Councils with representatives of the municipalities and NGOs;
- Joint Monitoring Commission - The legislation that frames the preparation of land use plans provides for the establishment of Joint Monitoring Committees, Coordination Meetings, and Public Discussion of Land Use Plans.
- Preparation of management plans with participatory methodology.
- Availability of information, particularly on management and planning in Internet platforms.
- The process of EIA includes, necessarily, a component of public participation, which is of particular significance in the whole process.

- SEA is a continuous and systematic process, right from the beginning moment of decision making, evaluation of environmental quality of alternative views and development perspectives incorporated in planning or in a program which will serve as a framework for future projects.

Goal 3.1: To provide an enabling policy, institutional and socio-economic environment for protected areas

- Decree Law No. 39/2008, of March 7 - Legal Framework of Installation, Operation and Functioning of resorts and Rectification No. 25/2008 of May 6 - Rectifying Decree-Law No 39/2008, of March 7;
- Ordinance No. 261/2009, of March 12 - Defines the criteria and procedures for recognition by ICNB, IP of new Nature Tourism enterprises;
- Decree-Law No. 142/2008 (Official Gazette no 142 of 2008-07-24) - Establishes the legal regime of nature conservation and biodiversity, and repealing Decree-Laws No. 264/79 of 1 August and 19 / 1993 of January 23 and Rectification No. 53-A/2008 (DR No. 183, Series I, Supplement, 2008-09-22) - Amends the Decree No. 142/2008 of 24 July, establishes the legal regime of nature conservation and biodiversity
- Natura 2000 network - Sectoral Plan
- Agro-environmental measures

Goal 3.2: To build capacity for the planning, establishment and management of protected areas

- Management of Wetlands. Course organized by ICNB and taught by Dr. David Flumm (RSPB) in the Lagoa de Albufeira, Sesimbra, on 21 and 22 November, 2006.
- Management and Funding for Nature Conservation. Conference organized by ICN in Lisbon (Centro Cultural de Belém) on 23 November 2005.
- 1. Seminar on Conservation and Management of Wetlands ", 12 and 13 October 2007 at Peniche. Organized by ICNB, Association Pato, GEOTA, Regional Information Centre of United Nations Western Europe (UNRIC) and the School of Maritime Technology.

Goal 3.3: To develop, apply and transfer appropriate technologies for protected areas

- Databases on: Herpetofauna and Wetlands
- The RAA created a GIS with mapping information on all the Protected Areas in the region with the aim of centralizing information and addressing it in an integrated way.
- The DGOTDU/MAOTDR created the National System of Territorial Information (SNIT) that provides information regarding the POAP and POOC, published in Diário da República (DR) as well as graphic information (land use plants and constraints) regarding 7 POOC and 6 POAP.

Goal 3.4: To ensure financial sustainability of protected areas and national and regional systems of protected areas

- Study (2006) to assess the integration of the management of Natura 2000 in PRODER 2007 to 2013 (Protocol between ICNB and Superior Institute of Agronomy).
- The State Budget – ICNB
- The State Budget – Financial Stability Fund to Municipal Councils
- Measures contained in Environmental Impact Declaration
- The Business & Biodiversity Initiative;
- The process of identifying the" Financing needs Natura 2000" is underway;
- The preparation of a legal framework for the Fund for Nature Conservation and Biodiversity (crated in 2008) within the ICNB is underway;
- The work has started on a proposal of revision of the 1st phase of ITI and the development of ITI of 2 phase;
- Manual of financial administrative procedures. ICNB - with the aim to improve and standardize procedures.

Goal 3.5: To strengthen communication, education and public awareness

1. Programs and events

- School in Nature - the project arises from a protocol established between ICNB and the DGIDC, aiming to provide all students of the 8 th grade of basic education with training in the area of environment and sustainability;
- Management and Funding of Nature Conservation - Conference organized by ICN in Lisbon (Centro Cultural de Belém) in November 23, 2005;
- 2nd Seminar on coastal lagoon systems - Vila Nova de Santo Andre, 30 September to 2 October 2006. Organized by ICNB.
- Importance of the Salt Pans of Castro Marim for the Conservation of Nature and Sustainable Development of the Region. Seminar organized by Almargem, TradiSal and ICNB, Castro Marim in 1st June, 2007.
- 3rd Seminar on coastal lagoon systems - Seminar organized by ICNB, Association Pato, GEOTA, Regional Information Centre of the United Nations Western Europe (UNRIC) and School of Maritime Technology, in 13th October 2007 in Peniche.
- 1st Seminar on Conservation and Management of Wetlands - Organized by ICNB, Association Pato, GEOTA, Regional Information Centre of the United Nations Western Europe (UNRIC) and the School of Maritime Technology on 12 and 13 October 2007 in Peniche.

- The Avifauna of the Natural Park of Serras de Aire e Candeeiros - Seminar organized by the Natural Park of Serras de Aire e Candeeiros, Porto de Mós, 4 and 5 May, 2007.

- Wetlands and the Ramsar sites in Portugal - Seminar organized by GEOTA in Caldas da Rainha, 9 February, 2008.

- National Meeting of Wetlands - Challenges and Opportunities for Sustainable Management. Seminar organized by the Municipality of Aveiro, University of Aveiro and the Association for the Study and Protection of Cultural and Natural Heritage of the Region of Aveiro in Águeda, 1 and 2 February, 2008.

- Project Young Reporters for the Environment for 2009/10 (ongoing), with the annual theme "Biodiversity".

2. Visitation

- Visitation and Communications Program at the National Network of Protected Areas, established in 2006.

3. Interpretation Centres

- Paredes de Coura: Interpretation Centre of the protected area of the Côrno de Bico opened on 1 July, 2007.

- Interpretation Centre of the Natural Park of Montesinho, one of two entries for the Natural Park of Montesinho, housed in the historic centre of Vinhais since February 2009.

- Interpretation Centre of the Natural Park of Serra da Estrela in Torre, since 2008.

- Pole Environmental Animation, Alcochete, since February 2008.

- Castelo Branco - interpretation centres under construction.

4. Availability of information on Internet platforms

- the ICNB digital library - provides reports and publications produced, promoted or supported by the institution, resulting from studies and projects on nature conservation and biodiversity and related fields;

- Review of the SIPNAT - includes maps and characterization of species occurrence, characterization of Classified Areas (mainland Portugal) and updated data from structural projects, recently developed by ICNB closely with the scientific community, as the Red Book of Vertebrates of Portugal the Sectoral Plan for Natura 2000, the National Implementation Report of the Habitats Directive, the Atlas of Amphibians and Reptiles of Portugal, among others.

Goal 4.1: To develop and adopt minimum standards and best practices for national and regional protected area systems

- Manual of support for the analysis of projects relating to the implementation of linear infrastructures. 2008. ICNB.

- Methodological Guide - Integration of guidelines for the management of the Sectoral Plan for Natura 2000 in the Municipal Plans for Spatial Planning. 2008. ICNB.
- Manual of support for the analysis of projects relating to the installation of overhead distribution lines and electric power transmission - Bird component. 2008. ICNB
- Guidelines for environmental assessment of plans and programs in terms of nature conservation and biodiversity. 2008. ICNB
- Methodological guide for the EIA of the infrastructures of Nacional Net for Electric Energy Transportation (RNT) – Aerial lines. Portuguese Environment Agency.
- Guide for the EIA of Wastewater Treatment Stations. Portuguese Environment Agency.
- Technical Guide for the Preparation of EIA of Multi Purpose Venture Projects of Alqueva. Portuguese Environment Agency.
- Criteria for Compliance. Portuguese Environment Agency.
- Criteria for Non-Technical Summary. Portuguese Agency for the Environment.
- Order of the EIA Documents. Portuguese Environment Agency.
- Standards for the preparation of EIA documents for posting on the Internet. Portuguese Environment Agency.
- Standards for the organization of georeferrenced data. Portuguese Environment Agency.
- Regulation of Committees of EIA. Portuguese Environment Agency.

Goal 4.2: To evaluate and improve the effectiveness of protected areas management

- The preparation of the management plans of protected areas and species action plans, involving the stakeholders has enabled more effective and efficient management. The annual monitoring of its implementation allows a better assessment of its implementation.
- The Management Indicators Manual. ICNB - with the aim of documenting the achievement of indicators of financial management.
- Manual of financial administrative procedures. ICNB - with the aim to improve and standardize procedures.

Regarding the management of SCI and SPA in mainland Portugal, the Sectoral Plan for Natura 2000 Network (PSRN2000), approved by Resolution of the Council of Ministers No. 115-A/2008 of July 21, identifies a set of strategic lines to be adopted, as set out below[55]:

(1) Integration of the objectives of conservation of natural values in the territorial management tools, harmonizing these goals with a wide range of activities including urbanization, tourism, mining,

[55] See also Chapter II ENCNB Strategic Option 4 of the 4th National Report to the CBD - Portugal

infrastructure, accessibility, recreation and leisure. In line with this strategic line, the Land Use Plans of Protected Areas which affect about 680 000 ha of area classified under 2000 Natura network, regulate the use and occupation of land according to the ecological requirements of different natural values on the area covered by those plans, while cautioning at the level of spatial planning and management against any adverse impacts that the acts, actions, or activities may generate on the natural heritage.

Thus, on overlapping, in whole or in part, SCI or SPA with the boundaries of protected areas classified under the National Network of Protected Areas (RNAP), the goals of conservation and management identified by the PSRN2000 are proportionally ensured through the Land Use Plans of Protected Areas, accounting for 34% of the 1,980,253 ha designated as Natura 2000 network in mainland Portugal, under direct management of the ICNB.

Despite the geographic scope of these plans does not cover all areas classified as SCI or SPA but only those areas that are classified cumulatively within the RNAP and the Natura 2000 network, there are other legal mechanisms (e.g. EIA and SEA) , and planning and organization geared to prevent the destruction, degradation or disturbance of natural values.

In the remainder of the areas classified as Natura 2000, not covered by protected areas the Municipal Master Plans (PDM) assume a key role at the level of land use planning. The review of these plans to occur until 2014 in the face of strategic guidelines laid down by PSRN2000, has been accompanied by ICNB, to ensure the adoption of best planning options with a view to the overall objective of protecting or maintaining in a favourable conservation status the natural values that motivated the classification of the territories covered. It is also worth noting the integration of PSRN2000 in the various sectoral policies, particularly in regional development, forestry and also in coastal planning policy. The Regional Forestry Plans (PROF) are a first step to achieving this policy. Its elaboration considered the strategic guidelines laid down by PSRN2000 for areas of Natura 2000. All Natura 2000 is covered by PROFs outlining the framework for forest development, through the operation of forest management plans to be developed at a more detailed scale. When in classified areas they include program of biodiversity management, as established by the legal regime for forest management. At the level of the coastline, the Coastal Zones Land Use Plans (POOC) are concluded for the entire target territory, establishing itself as the main operational tool for spatial planning (which includes a range of maritime protection) in pursuing the objectives of protecting the biophysical integrity of the areas covered, of enhancing existing resources and conserving environmental values and landscape.

(2) Promotion of active management for conservation of SPAs and SCIs, based largely on partnerships with agriculture, forestry and grazing sectors, to the extent that maintaining a favourable conservation status of most of the natural values that are in the origin of the designation as Natura 2000 sites, are closely dependent on this type of activity. In this regard, to provide the necessary resources for implementation, integrating the objectives of biodiversity conservation in agricultural and rural development and fisheries is identified as a key measure. Thus, in SCI and SPA whose conservation targets are dependent on a management oriented to the retention or promotion of certain forestry, agriculture and animal husbandry practices, the preparation of Integrated Land Interventions (ITI) in the context of the Rural Development Plan – Mainland Portugal (2008-2013), is the most appropriate and structuring solution, based on a set of agro/forestry-environmental measures. With the goal of identifying ways of integrating the measures required for the management of classified areas of Natura 2000 (mainland Portugal) in the programming of rural development policy (embodied in PRODER), the ICNB presented the strategic report "Study on the Integration of Natura 2000 Management in the National Strategy for Rural Development 2007-2013" for agriculture and forest management in the Natura 2000 Network, to be implemented in the programming of rural development policy, which is

now in full swing implementation. The relevance and dependence on agriculture and forest management for the success of Natura 2000 is proved. In 90% of the total area of the network there is a high degree of association between the natural values to conserve and the type of agriculture and forest management practiced. Thus in 2008 the Regulation on the Application of agro/forestry-environmental components of measure nº 2.4 "Integrated Land Interventions", of Subprogram nº2 of the PRODER approved by Ordinance No. 232-A/2008, constitutes the first Phase of ITI, which covers eight ITIs covering 37% of the total area of the Natura 2000 Network: Peneda-Gerês ITI, Montesinho-Nogueira ITI, Douro International ITI, Serra da Estrela ITI , Tejo Internacional ITI, Serras de Aire e Candeeiros ITI, Castro Verde ITI and Costa Sudoeste ITI.

Based on this conceptual development the ICNB completed in 2008 a set of measures for agriculture and forest management in areas classified as Natura 2000 to be included in Stage 2 of ITI, as provided in the programming of rural development policy for the period 2007-13.

Taking into account the natural values, the main factors of threat and management guidelines related to agriculture and forestry identified in PSRN2000 and additional bibliographical sources, the universe of conservation objectives to be achieved through measures included in the ITI was defined. These objectives were defined taking also into account the potential impacts of agricultural and forestry development in accordance with the main trends identified in the territories under review within the timeframe until 2013.

The conservation objectives identified for each ITI in conjunction with the results of agro-forestry dynamics in these regions, allowed to design the necessary measures to manage the natural values that underpin the designation of the classified areas covered by these ITI (including the conditions, commitments and levels of payment).

The development of these measures involved the measurement of acceptance and adaptation to specific conditions and characteristics of farms/forests involved, along with farmers and other potential beneficiaries. A proper adherence was thus sought to ensure that the measures essential to the conservation objectives can be, in fact, achieved.

The results of this study are a sound technical basis for the development of the referred ITI, in conjunction with the Managing Authority of PRODER, the relevant entities of the MADRP and with relevant partners, in particular associations representing farmers, forest owners, hunting management companies, owners and ENGOs. The process is currently under discussion and negotiation with a view to establishing a new package of ITI (2nd phase) in 2010. The strengthening of support for the Natura 2000 network under PRODER will thus be used to ensure the enlargement of ITIs to all other classified areas for which oriented agro-forestry management is important for conservation objectives.

(3) To frame and promote the management of values associated with water courses and wetland systems in close cooperation between the authorities of biodiversity conservation and the publicly owned water management, particularly through the implementation of the Framework Law on Water, in a logic of integrated river basin management. The intervention of the authorities of biodiversity conservation in the preparation of basin plans, and planning for estuaries, lakes and reservoirs is thus foreseen;

(4) Develop management plans that define the conservation measures and actions, aiming to reconcile the conservation of natural values with the activities practiced in the Natura 2000 network, if necessary, in the face of an evaluation of existing instruments and mechanisms.

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In the RAM Plans and Programs of Action are already established and published covering the whole of the SCIs/SACs of the region and the whole of the SPAs, to the extent that its limits are identical to the corresponding SIC, and all of the SIC and SPAs designated in the RAA have management plans since 2004.

Goal 4.3: To assess and monitor protected area status and trends

No relevant information to report.

Goal 4.4: To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems

- Project "Implementation of management models for habitat with hunting purposes, in a protected area, the Peneda-Geres and in a SPA classified area" with the objectives of promoting two game species: wild rabbit and red partridge -through intervention in the Habitat; to reverse the process of homogenization of the landscape and to compare the effectiveness of measures implemented in the habitat. 2003-2006
- Conservation Genetics (iberian lynx and wild cat, iberian wolf, black stork and bats).
- Projecto de Requalificação e Valorização Ambiental do Troço Guincho/Guia – UOPG8 do POOC Sintra-Sado, em curso. Project of Rehabilitation and Environmental Improvement of the section Guincho/Guia - UOPG8 POOC the Sintra-Sado ongoing.
- Biomares Project - recover of seagrass fields in Portinho da Arrábida - ongoing.
- ALFA (2004). Natural and Semi-Natural Habitat Types of Annex I Directive 92/43/CEE (mainland Portugal): Files of ecological characterization and management for Natura 2000 Network Sectoral Plan. Report. Lisbon.

Appendix III – Progress towards the targets of the Global Strategy for Plant Conservation

Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora

National objectives

The legal framework for nature conservation and biodiversity, published by Decree-Law No. 142/2008 of July 24, refers to the organization of information on the natural heritage and classified natural values (Art. 28) giving the ICNB in conjunction with other State bodies and the authorities of the Autonomous Regions of Azores and Madeira, the responsibility of promoting the development of the SIPNAT (inventory of biodiversity and geological heritage present in the national territory and in waters under national jurisdiction), to validate the information contained therein and to ensure its management and public disclosure.

Indeed, the ICNB invested in developing the SIPNAT which is currently under revision and modernization.

Actions taken to achieve the objectives

1. For the Portuguese bryophytes, the reference list of bryophytes of Portugal, Spain and Andorra was published in 2006:

> Sérgio C, Brugués M, Cros RM, Casas C & Garcia C (2006). The 2006 Red List and an updated checklist of bryophytes of the Iberian Peninsula (Portugal, Spain and Andorra). *Lindbergia* **31**: 109-125.

2. Regarding the vascular flora of Portugal, the Lusitanian Association of Phytosociology (ALFA) has finnished an updated check list, which will be published electronically until the end of 2010. This list will cover the *taxa* of mainland Portugal, Azores and Madeira, for which it was necessary to produce three sub-national lists and then proceed with their inclusion in a sole national list, which also led to the solving of several taxonomic and nomenclatural discrepancies among the three geographical areas involved.

3. Recently, two check lists for terrestrial flora were produced in the RAA:

(i) Borges PAV, Cunha R, Gabriel R, Martins AF, Silva L & Vieira V (eds.) (2005) *A list of the terrestrial fauna (Mollusca and Arthropoda) and flora (Bryophyta, Pteridophyta and Spermatophyta) from the Azores*. Direcção Regional do Ambiente and Universidade dos Açores, Horta, Angra do Heroísmo e Ponta Delgada, 317 pp.[56]

(ii) Dias E, Maria J, Barcelos P, Pereira F, Mendes C & Nunes L (2006). *Lista de Referência da Flora dos Açores*. Ed.: Herbário da Universidade dos Açores (AZU). Departamento de Ciências Agrárias. Universidade dos Açores. ISBN 972-99474-4-9[57].

4. Recently, a check list of terrestrial flora was produced in the RAA:

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56 List available in: http://www.azores.gov.pt/Portal/pt/entidades/sram/publicacoes/Listagem+da+Fauna+e+Flora+Terrestres+dos+Açores.htm?lang=pt&area=ct

57 List available in: http://www.angra.uac.pt/GEVA/WEBGEVA/Scheklistacores/ScheklistAcoresstart.htm

Borges PAV, Abreu C, Aguiar AMF, Carvalho P, Jardim R, Melo I, Oliveira P, Sérgio C, Serrano ARM & Vieira P (eds.) (2008). *A list of the terrestrial fungi, flora and fauna of Madeira and Selvagens archipelagos*. Direcção Regional do Ambiente da Madeira and Universidade dos Açores, Funchal and Angra do Heroísmo, 440 pp.

5. Under projects INTERREG IIIB "Atlantic" (2003-2005) and "BIONATURA" (2007-2008), the Azores Biodiversity Portal was developed[58]. In this autonomous region the Regional Directorate of the Environment and the Sea and the Regional Agency for Energy and Environment were the partners involved. The coordinator of the Project was the Consejería de Medio Ambiente y Ordenación Territorial of the Government of the Canaries.

In the RAM, the Regional Directorate of the Environment created the Biodiversity Database of the archipelago, where most of this Autonomous Region priority species can be searched. Through ATLANTIS Software it is possible to consult and draw, in GIS format, georeferrenced distribution of all those species.

In the Azores a database using ATLANTIS Software organizes and analyzes all available information about the spatial information of the species.

There is also a guide on marine species of the Azores.[59]

The following publications should also be mentioned:

- Aguiar C (2002) *Flora e Vegetação da Serra de Nogueira e do Parque Natural de Montesinho*. Dissert. Dout. Eng. Agron. Universidade Técnica de Lisboa - Instituto Superior de Agronomia. Lisboa. 661 pp.

- Bernardos S, Amado A, Aguiar C, Crespí AL, Castro A e Amich F (2004) Aportaciones al conocimiento de la flora y vegetación del centro-occidente ibérico (CW de España y NE de Portugal). Flora and Vegetation of central-western Iberian Peninsula (CW of Spain and NE of Portugal). *Acta Bot. Malacit*. 29: 285-294.

- Costa JC & Aguiar C (2003) *Checklist dos sintaxa de Portugal - Continente e Ilhas*. 1ª versão. ALFA, Associação Lusitana de Fitossociologia. 26 pp.

- Crespí AL - *Flora Vascular do Norte de Portugal* (POCI/BIA-BDE/56044/2004)

- Martins A, Crespí AL, Castro A, Fernández CP, Rochas J, Bernardos S, Aguiar C & Amich F (2007) Contribuición para la caracterización florístico-ambiental del norte de Portugal. *Botanica Complutensis* 31: 99-111.

- Magos Brehm J, Maxted N, Ford-Lloyd BV & Martins-Loução MA (2008a) National inventories of crop wild relatives and wild harvested plants: case-study for Portugal. *Genetic Resources and Crop Evolution* 55: 779-796.[60]

This objective is expected to be achieved soon.

58 http://www.azoresbioportal.angra.uac.pt/

59 http://www.horta.uac.pt/species/

60 Database of crop wild relatives and wild harvested plants. www.jb.ul.pt

Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels

National objectives

The ENCNB, published by the Council of Ministers Resolution No. 152/2001 of 11 October, adopts ten strategic options, including "*to develop in the entire national territory specific actions for the conservation and management of species and habitats as well as the safeguard and enhancement of landscape and of notable elements of geological, geomorphological and paleontological*". Under this option several directives for action are set, including:

- Develop Red Books and Red Lists of threatened *taxa*, namely for vascular flora, mushrooms and invertebrates;

Actions taken to achieve the objectives

For the bryological flora of mainland Portugal, an update on the status of threat of all bryophytes within the Iberian territory was published in 2006:

Sérgio C, Brugués M, Cros RM, Casas C & Garcia C (2006). The 2006 Red List and an updated checklist of bryophytes of the Iberian Peninsula (Portugal, Spain and Andorra). *Lindbergia* **31**: 109-125.

Still ongoing is BrioAtlas, a project of the Foundation of the Faculty of Sciences of Lisbon University, in partnership with the National Museum of Natural History, the Center for Environmental Biology, the Faculty of Sciences of Lisbon University and the Research Centre for Biodiversity and Genetic Resources. It aims to develop the Red List of Bryophytes of Portugal, by 2011, as well as to update the distribution of different threatened bryophytes and to identify priority areas for conservation.

Regarding vascular flora species, particularly in mainland Portugal, there is significant gap since a red list is missing.

However, the work done with 66 threatened legumes of mainland Portugal should be noted. An assessment of its condition and threat status (Magos Brehm 2004) was made available. More recently, Magos Brehm (2008, 2009) assessed the status of threatened wild crop relatives and of species traditionally harvested in wild with ethnobotanical interest according to the IUCN Categories and Criteria, 2001 (IUCN, 2001)[61] as well as the regional assessment of their status under the IUCN Regional Criteria (IUCN, 2003).[62]

- Magos Brehm J (2004) Conservation assessment of wild legumes in Portugal. MSc Thesis. University of Birmingham, UK.

- Magos Brehm J, Mitchell M, Maxted N, Ford-Lloyd BV & Martins-Loução MA (2008b) "IUCN Red Listing of Crop Wild Relatives: is a national approach as difficult as some think?" In Maxted, N., Ford-Lloyd, B.V., Kell, S.P., Iriondo, J.M., Dullo, E. and Turok, J. (eds.) Crop wild relative conservation and use. Wallingford: CAB International. pp. 211-242.

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61 IUCN (International Union for Conservation of Nature and Natural Resources) (2001) IUCN Red List categories and criteria: Version 3.1. Gland and Cambridge: IUCN Species Survival Commission. http://www.iucn.org/themes/ssc/redlists/redlistcatsenglish.pdf

62 IUCN (International Union for Conservation of Nature and Natural Resources) (2003) Guidelines for application of IUCN Red List criteria at regional levels: Version 3.0. Gland and Cambridge: IUCN Species Survival Commission. http://app.iucn.org/webfiles/doc/SSC/SSCwebsite/Red_List/regionalguidelinesEn.pdf

Regarding autonomous regions, the result of a partnership project between the regional governments of the Canary, Azores and Madeira Islands, in the context of INTERREG III B - BIONATURA, was the publication of a book with the 100 most endangered species, considered of prioritary management in each region (flora is represented by 85 *taxa* in the Azores and 49 *taxa* Madeira):

Martín JL, Arechavaleta M, Borges PAV & Faria B (eds.) (2008) *Top 100. Las especies amenazadas prioritarias de gestión en la región europea biogeográfica de la Macaronesia*. Consejeria de Medio Ambiente y Ordenación Territorial, Gobierno de Canarias. 500 pp.

The RAA also published:

Silva L, Martins M, Maciel G & Moura M (2009) *Flora Vascular dos Açores. Prioridades em Conservação*. Amigos dos Açores & CCPA, Ponta Delgada, 116 pp.

Homem, N. & Gabriel, R (2008). Briófitos raros dos Açores/Azorean Rare bryophytes. Principia, Oeiras. 96 pp.

Borges P & Gabriel R (2009) *Predicting extinctions onoceanic islands: arthopods and bryophytes / Estimar extinções em ilhas oceânicas: artrópodes e briófitos*: Grupo de Biodiversidade dos Açores, Angra do Heroísmo. 80 pp.

The RAM also published:

Faria B, Jardim R, Madeira A, Silva N, Fernandes F & Carvalho JA (2006) *Fauna e flora da Madeira: espécies endémicas ameaçadas vertebrados e flora vascular.* Projecto Centinela, Governo Regional da Madeira, 144 pp.

Identification of future needs and priorities

The main constraints relate to limitations in terms of human and financial resources (as mentioned in the Third report), but also at the institutional level, so the inclusion of this target in investment priorities should be considered.

To invest in the production of the Red List of Vascular Flora of Portugal is considered crucial as a fundamental knowledge base, and as the foundation for regulatory measures and decision-making.

It is previewed that the elaboration of this List will start during 2011.

Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience

National objectives

As previously referred the ENCNB, under one of its strategic options defined several directives for action, including:

To adopt by the 1st of January 2002, a comprehensive action plan (in each of the Autonomous Regions and, in mainland Portugal, a global action plan for the ICNB) that includes a schedule of action plans to be developed regarding the conservation and management of priority species of fauna and flora.

Actions taken to achieve the objectives

As it is stated in National Evaluation Report of Progress of the Implementation of the ENCNB, "*to date no Global Plans of Action have been developed as foreseen in the ENCNB (either by the ICNB, or by the Autonomous Regions), which should include a schedule of action plans to be established in the framework of conservation and management of priority species of fauna and flora*.".

The handbook of good practices for drafting forestry projects (under preparation by the ICNB), to be distributed among forest owners, designers, machine operators and other entities, should be highlighted. The handbook aims to inform about the requirements to be met by forestry projects located within protected areas to ensure that forestry activities are undertaken in ways to minimize impacts on fauna, flora, habitats, soil and landscape, and to contribute to the conservation of nature.

The "Action Plan to protect the Portuguese population of rapa-saias-do-Barrocal *Picris willkommii*", promoted by the ICNB, aims to guide future actions in the occurrence area of the species so that as part of the species population can be recovered and preview the adoption of conservation measures for the species.

Note also that, within LIFE project 99 NAT/P/006441 - "Montados do Sítio Cabeção - Management of habitats and species" oriented to the protection of Cork Oak and Holm Oak agro-forest-pastoral systems,and other associated habitats, a management plan was conceived, defining for each habitat several techniques to be applied in order to promote their recovery, conservation and monitoring. The Management Plan was published in the format of a habitats management guide and distributed to local authorities, forest producers associations and official institutions related with nature conservation.

The limited knowledge on flora species (conservation status, occurrence, biology and ecology) is a constraint to the development of guidelines/protocols for the conservation and sustainable use of flora. The lack of knowledge about what are the most important limiting factors, the threats and the most effective conservation measures is frequent. As stated in National Evaluation Report of Progress of the Implementation of the ENCNB: *The gap in scientific knowledge of the national natural heritage is unequivocally proven, particularly when it comes to define and implement measures of conservation and management of natural values, and to base decision-making processes. To bridge this gap is one of the priorities in the implementation of the ENCNB.*

However, in relation to the flora species listed in Annex II and to the habitat types listed in Annex I of the Habitats Directive, the PSRN2000 stands as a strategic guidance document to the management of natural values occuring in the Natura 2000 network. The PSRN2000 identifies management guidelines for these natural assets in files of characterization and management of species and habitats. For its strategic nature it can not contain all the specifications necessary to implementation, but it will steer at a macro level and at national level (having been adopted at 1:100.000 scale), the uses and management regimes compatible with the maintenance, in a favourable conservation state, of the natural values for which the Sites were designated, with a view to a sustainable use of the territory[63].

In the Autonomous Region of Azores a Sectoral Plan for the Natura 2000 Network was also already approved (Regional Legislative Decree No 20/2006/A of June 6, amended by Legislative Decree No Regional 7/2007/A of April 10). Management Plans for 23 SCIs (recently classified as Special Areas of Conservation through the Regional Regulatory Decree No. 5/2009/A, 3rd of June) were developed, containing conservation measures and actions to ensure the favourable conservation state of natural

63 http://www.icn.pt/psrn2000/

habitats and species present in those protected areas.

The Autonomous Region of Madeira did not prepare nor approve a Sectoral Plan for Natura 2000 Network.

Identification of future needs and priorities

As recommended in the National Report on the Interim Evaluation of the Implementation of the ENCNB, the elaboration of action plans for species and habitats of priority conservation is necessary.

However, both in mainland Portugal and in the autonomous regions, the effectiveness of the implementation of these action plans is dependent upon:

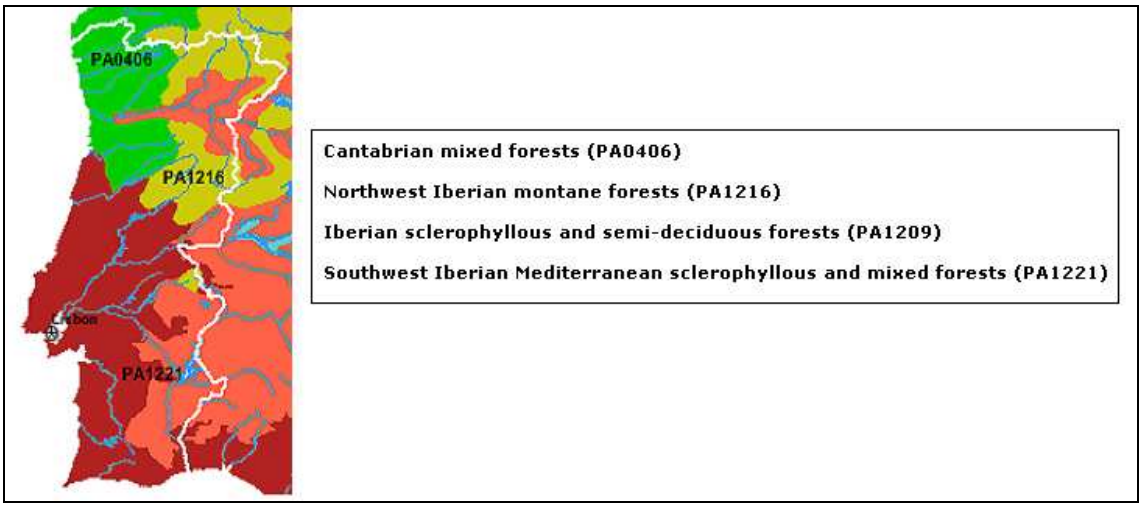
- Acquisition of information on plant species and communities, and particularly on the most appropriate management for their conservation;

- Definition of a strategy for national action, in terms of priorities for knowledge acquisition and implementation of conservation measures.

Target 4: At least 10 per cent of each of the world's ecological regions effectively conserved

When analyzing the territory under the perpective of the Terrestrial Ecoregions as defined by WWF[64] (and adopted by UNEP), six areas are comprised by Portugal.

In the Azores, *Azores temperate mixed forests* (PA0403), and in Madeira, *Madeira evergreen forests* (PA0425), and in mainland Portugal, four regions as shown in the following picture.[65]



10% of the surface of each of these "ecoregions" is covered by protected areas targeted for conservation of nature, including the RNAP and areas desiganted under Natura 2000 Network.

64 http://www.unep-wcmc.org/posters/information_series/cbd_series/lowres/2010%20CBD%20Targets-LR.pdf
65 http://www.nationalgeographic.com/wildworld/terrestrial.html

National objectives

Although a sufficient percentage of the different ecological regions is under a protection regime it is important to take into account that on the field protection is dependent on effective management.

In this context, it is necessary, as identified in the National Report on the Interim Evaluation of the Implementation of the ENCNB, "to provide the SIC and SAC with operational management plans in accordance with the priorities established in PSRN2000". This necessity is particularly relevant in mainland Portugal and in the autonomous region of Madeira.

Target 5: Protection of 50 per cent of the most important areas for plant diversity assured

National objectives

One of ten strategic options adopted by the ENCNB is "*Establishing the Fundamental Network for the Conservation of Nature (RFCN)*" aimed at preserving the most significant natural heritage values. The RFCN includes the areas designated as Natura 2000 Network and within the National Network of Protected Areas, but also other areas designated under international commitments, and even by REN, the DPH and the RAN.

Actions taken to achieve the objectives

The Natura 2000 Network areas (designated in accordance with the Habitats Directive) cover 17% of terrestrial mainland, while the RNAP occupies 8%, largely overlapping Natura 2000 Network sites.

Although there is no concrete comprehensive study aimed at identifying plant diversity hotspots in Portugal, it is assumed that more than 50% of the most important areas for the conservation of flora and plant communities are covered by areas currently under protection.

It should be noted that the areas of the Natura 2000 network, designated in accordance the Habitats Directive, integrate various regions which are historically and widely recognized as important for the conservation of flora and plant communities, such as the Serra da Estrela, the mountains of Peneda and Gerês, the southwest and west coasts, the limestone uplands of Estremadura, or the north-eastern part of the country. Furthermore, recent studies conducted by academics informed the process of establishment of the Natura 2000 network.

In the RAA, the areas designated under the Natura 2000 network, in accordance with the Habitats Directive, cover 11.4% of the archipelago terrestrial territory and regional protected areas occupy 19% of the territory, largely overlapping the Natura 2000 Network sites. These areas provide for a percentage of protection of the most important areas to plant diversity, which is clearly above 50%.

In the RAM, areas classified under the Natura 2000 network under the Habitats Directive cover 27.5%, and regional protected areas cover about 80% of the archipelago terrestrial territory.

On 7 October 2009 the Decree No. 1181/2009 was published, regulating the designation of private protected areas at the request of the owner, through a special process of nomination and recognition by the national authority for nature conservation and biodiversity, provided in article 21 of the Legal Framework for Nature Conservation and Biodiversity (Decree-Law No. 142/2008 of July 24).

Thus, the microreserves now have a legal framework, allowing, for example, the recognition of microreserves currently managed by the ENGO Quercus as private protected areas. Microreserves main aim is to preserve localized natural and semi-natural habitats and plant species, invertebrates and small vertebrates considered rare, threatened or endangered.

Already designated microreserves that are dedicated to the conservation of plant biodiversity (habitat or species of flora considered rare, threatened or in danger of extinction) rely on the scientific validation of their establishment processes, proposed management measures and monitoring of their implementation by the Lusitanian Phytosociology Association (ALFA), according to the protocol signed between Quercus and ALFA. The following microreserves have been designated:

- Turfeira, Serra da Freita
- Monte do Outeiro, Cuba – area for the conservation of *Linaria ricardoi*
- Peninha, Serra de Sintra – area for the conservation of various species of flora, namely *Armeria pseudarmeria* and *Dianthus cintranus* subsp. *cintranus*
- Sítio dos Prados, Serra da Estrela – area for the conservation of one population of *Narcissus pseudonarcissus* subsp*. nobilis*
- Sítio dos Chãos, Ferreira do Zêzere – area for the conservation of semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) (habitat type 6210 – Habitats Directive)
- Cerros de Mombeja – conservation of holm oak forests in soils derived from plutonic rocks in the southern region of Portugal (where it is assumed that the Portuguese endemism *Armeria neglecta* can still occur)
- Carvalhal, Herdade do Freixo do Meio

The private reserve of the Sociedade Broteriana oriented to the conservation of *Lavandula latifolia* (wild genes reserve) should also be mentioned.

Regarding management measures aimed at the conservation of flora and plant communities in protected areas, the following should be stressed:

(i) land use plans for protected areas, by regulation

(ii) management actions aimed at the conservation of flora and vegetation in protected areas

(iii) *in situ* conservation actions directed at legally protected species and habitats within LIFE projects

(iv) management actions for endangered species of flora - developed in target seven

Relevant projects co-financed by EU LIFE programme, in the context of this target:

- [1998-2000] LIFE 97 NAT/P/004082 – "Management and conservation of the laurel forest od Madeira "
- [1999-2003] LIFE B4-3200/98/518 – "*Asphodelus bento-rainhae* – Management and

conservation measures" – including the preparation of a management plan for the species in Sítio Serra da Gardunha.

- [1999-2003] LIFE Natureza B4-3200/98/498 – "Conservation of four rare species in Valongo "- including the implementation of a series of actions to manage and conserve the habitat of three species of flora: *Culcita macrocarpa, Trichomanes speciosum* and *Lycopodiella cernua*.66

- [1999-2003] LIFE 99 NAT/P/006431 –"Conservation of Rare and Prioritary Plant Species of Madeira"- the expected results consisted primarily in the medium and long-term conservation of the genetic diversity of prioritary and rare species endemic of Madeira, the strengthening of populations of prioritary and rare species endemic of Madeira; and in habitat restoration in Porto Santo.67

- [2000-2003] LIFE 99 NAT/P/006441 - "Montados do Sítio Cabeção – Management of habitats and species" – aimed at the conservation of cork oak and holm oak forests as well as of habitats associated with these forest-agro-pastoral systems.

- [2000-2003] NAT/P/006436 – "Recovery of Laurel Forest in Funduras (Machico - Madeira)"

- [2002-2006] LIFE - Natureza III P\8048 – "National plan for conservation of endangered flora (1st Stage)"- aimed to implement conservation actions for eight species of Portuguese flora considered seriously threatened, with a very limited distribution: *Convolvulus fernandesii*, *Linaria ricardoi*, *Marsilea quadrifolia*, *Narcissus scaberulus*, *Omphalodes kuzinskyanae*, *Plantago algarbiensis*, *Plantago almogravensis* and *Tuberaria major*.68

- [2002-2006] LIFE02/NAT/P/8478 - "Serra da Estrela: management and conservation of prioritary habitats " – seeks the recovery and conservation of prioritary habitats in Sitio da Serra da Estrela, present in Biogenetic Reserve and in the surrounding area, promoting their sustainable use by the local population, through traditional forms of natural resource use

- [2003-2008] LIFE 03/NAT/P/000018 – "Active and participatory management of Monfurado Site"- a project aimed at promoting the conservation of natural values present in the Monfurado Site, bearing in mind the need to reconcile their protection with the main activities existing in the Site (agriculture, livestock, forestry, hunting); including an Intervention Plan in the Rural Space of Monfurado; management trials for the expansion of populations of species of flora of Community interest *Hyacinthoides vicentina* and *Festuca duriotagana* and of populations of *Quercus faginea* and *Quercus pyrenaica*.69

- [2004-2008] LIFE04NAT/PT/000212 – "Conservation of species and habitats in the Portuguese West coast " – including the elaboration of a conservation plan of *Asplenium hemionitis.*70

- [2004-2008] LIFE04/NAT/PT/000214 - "Nortenatur – Management and conservation of habitats in the SCIs of São Mamede Nisa/ Laje da Prata "- aims to implement a set of management actions for the conservation of prioritary habitats and other natural habitats

66 http://www.cmvalongo.net/life/life.htm

67 http://www.sra.pt/jarbot/por/infgera/life99/life_99.htm

68 http://www.icn.pt/pnc_flora_perigo/

69 http://www.cm-montemornovo.pt/wwwGAPS/

70 http://www.cm-sintra.pt/pnsc/Introdução.html

associated with them, including the promotion of sustainable management of cork oak, holm oak and pyrenean oak, stimulating the regeneration of these systems and consequently of all priority or associated habitats in these forest systems.

- [2009-2013] LIFE 07 NAT/P/000630 "Sustainable laurel "- has as its main objective the protection of existing natural habitats in Special Protection Area Pico da Vara / Ribeira dos Guilherme, in the RAA.[71]

Identification of future needs and priorities

As mentioned in target 4, although a significant proportion of the key areas for plant diversity is under the jurisdiction of protected areas it should be taken into account that its effective protection is dependent on proper management of these areas. In this context the National Report on the Interim Evaluation of the Implementation of the ENCNB recommends "to provide the SCIs and SPAs with management plans operating in accordance with the priorities established in PSRN2000.

As mentioned in target 7, a national atlas of flora species would be an essential tool for assessing the level of protection of important plant areas and to support the definition of target areas of prioritary management (issue already highlighted in the Third National Report to CBD).

Target 6: At least 30 per cent of production lands managed consistent with the conservation of plant diversity

National objectives

Several objectives defined in various national plans and strategies contribute to this target:

In ENCNB: Strategic Option 6 - To promote the integration of nature conservation policy and the principle of sustainable use of biological resources in land use planning policy and in the various sectoral policies, including agricultural and forestry policies.

In PSRN2000: This Plan identifies the need for a proper management of agricultural and agro-forestry areas and of agriculture, forestry and pasture tillages and advocates a linking between conservation and rural development policies as a strategic issue for the conservation of biodiversity. Regarding the management of SIC and SPA, it is still identified as a key guidance the active conservation management through the establishment of partnerships with the agricultural, forestry, pastoral and fisheries sectors, especially with owners and managers. The contractual practice should be closely linked to the availability of means for its implementation, the integration of biodiversity conservation objectives in the management instruments of agricultural and fisheries policies, and in line with the EU Agricultural and Fisheries Policies reforms.

In the National Strategy for Forests:

In the general Law on Forest Policy and in the National Forest Strategy: among the guiding principles of forest policy enshrined in the General Law on Forest Policy (Law No. 33/96, 17th of August) is the principle of conservation, which states that the forestry operations must comply with the maintenance of the forest as an inseparable resource from other natural resources such as water, soil, air, flora and

71 http://www.spea.pt/life_laurissilva/Pagina_Inicial.html

fauna, in view of its contribution to the fixation of carbon dioxide and as a repository of biological and genetic diversity. It also aims to promote and ensure a sustainable development of forest areas and of all forestry industry activities.

The Strategy also mentions the preparation of regional forestry norms to be included in PROF and PGF as a priority action. These norms should determine the most appropriate ecological characteristics and reflect the principles of multiple use, social use, biodiversity and sustainable development of forest.

These principles are reinforced in the National Forest Strategy, with special emphasis on the role of protected areas. One of the Strategy objectives is to ensure the protection of forest areas prioritary for biodiversity conservation and to maintain biodiversity in protected areas while stating that whichever the adopted management model (mono or multifunctional), the management, conservation and sustainable development principles should be applied in every forest type.

Actions taken to achieve the objectives

1. Agro-forestry-environmental measures

For the EU financial period 2007-2013, the PRODER was approved under the FEADER. PRODER axis 2 (Improving the Environment and Rural Landscape) aims to support the sustainable development of rural areas, mobilizing farmers and other actors in rural areas to voluntarily adhere to specific production methods anto to the maintenance of biodiversity through agri-environment and forest payments. In terms of nature conservation and biodiversity, the more relevant measure of axis 2, is measure 2.4 .- Integrated Land Interventions (ITI), dedicated to promoting the management of agricultural and forestry systems that are appropriate for the conservation of biodiversity values and landscape in designated areas of the Natura 2000 Network. The regulation (Ordinance 232-A/2008 of 11th of March, as amended by Ordinance No. 964-A/2008 of 28th of August) establishing the regime for implementing the agro-environmental and forest-environment components of Measure 2.4, ITI, was published in 2008, providing for the application of eight ITI, covering 6425 km2 of mainland Portugal. It is planned to implement new ITI to other classified areas.

However, according to the Report of Assessment of the Measure 2.4 of PRODER (2009), the adhesion rate between 2007 and 2008 to agri-environment and forest measures of ITI in classified areas is very low, staying below 5% of the total area of intervention. Whereas PRODER is the instrument that par excellence, enables the integration of biodiversity conservation in agricultural practices in classified areas, for the period 2007-2013, the results are unsatisfactory. Nevertheless, it should be noted that there is a percentage (not estimated) of the agriculture, forestry and pasture territory where management is traditionally compatible with conservation objectives and are not dependent on agri-environment and forest measures.

Detailed information on agro-environmental measures – Strategic Option 5 of the ENCNB

During the Third CSF (2000-2006), the implementation of agri-environmental measures in order to safeguard the biodiversity associated with traditional agro-systems present in core areas of conservation, provided support to about six hundred and forty thousand hectares in Portugal related to agricultural production systems (of which seventy-three thousand relate to the classified area of Natura 2000) under the Program RURIS. In 2005, 7 Zonal Plans were applied in 7 Protected Areas, within which were considered a range of types of support to agriculture in order to conserve the environment. The application of the mentioned Zonal Plans was suspended in 2006.

For the EU financial period 2007-2013, the PRODER was approved under the FEADER. PRODER axis 2 (Improving the Environment and Rural Landscape) aims to support the sustainable development of rural areas, mobilizing farmers and other actors in rural areas to voluntarily adhere to specific production methods anto to the maintenance of biodiversity through agri-environment and forest payments. In terms of nature conservation and biodiversity,

Axis 2 of PRODER provides relevant measures in terms of nature conservation and biodiversity, in particular measures 2.1 - Maintenance of agricultural activity in disadvantaged areas (inside and outside the Natura 2000 Network), 2.2 - Development of Modes of Production (change of modes of agricultural production, protection of domestic biodiversity and conservation and improvement of genetic resources), 2.3 - Agroforestry and Forest Area Management (minimizing risk, planning and recovery of populations and environmental value of forest areas), and especially 2.4 - Integrated Territorial Interventions (promoting the management of agricultural and forestry systems appropriate to the conservation of biodiversity values and landscape maintenance in designated areas of Natura 2000 Network).

The regulation (Ordinance 232-A/2008 of 11th of March,) establishing the regime for implementing the agro-environmental and forest-environmental components of Measure 2.4, ITI, was published in 2008, providing for the application of eight ITI, for the areas covered by the former Zonal Plans. The support for the Natura 2000 Network will be used, inter alia, for payments for environmental services provided by farmers. The application of new ITI is foreseen for other protected areas.

As for the implementation of agri-environmental and forest measures, only eight ITI are constituted under the PRODER. The rate of adherence to these ITI is however very low and given that PRODER is the instrument par excellence that enables the integration of biodiversity conservation in agricultural practices in the areas classified, for the period 2007-2013, efforts should be made to increase the levels of adherence to this measure, including the forest-environmental component in all ITI and in some ITI in particular (e.g. Serra de Aire e Candeeiros and Costa Sudoeste which recorded the lowest levels of adherence). In this sense, an analysis of the problems that have occurred in the implementation of existing ITI should be made, also counting with the contribution of information that the local structures of support could provide.

In the authonomous regions for the period 2007-2013, the forest and agro-environmental measures of axis 2 (Improving the Environment and Rural Landscape) are applied in the Azores through the PRORURAL and in Madeira through the PRODERAM[72]. In 2000-2006, the autonomous regions have implemented agri-environment measures through their PDRs.

2. Forest Management Plans (PGF)

The forest management plans (PGF) are the basic tool of forest planing at a local level, and regulate, in time and space, the operations of exploration, with a view to the sustainable production of goods and services from forested areas, determined by economic, social and ecological conditions.

All public forests and a substantial portion of private ones (the minimum area is defined in the respective PROFs, ranging between 25 and 100 ha) are necessarily subject to the development of a PGF, including all those who apply to projects of intervention with public funding.

72 - http://prorural.azores.gov.pt/ ; http://www.gpp.pt/drural/pdr/PDR_Madeira/PRODERAM.pdf

When in protected areas, the PGF also includes the Biodiversity Management Program (PGB), which should highlight the contribution of the farm to the conservation of biodiversity. The PGB should contain information on a sufficiently detailed scale on the status and location of natural values, particularly those that lead to the classification of the protected area, and identify a set of forest interventions consistent with the conservation of those values, and, where possible, so as to improve their conservation status. It should also define a set of indicators to assess the effectiveness of the implemented measures. The PGB is thus a document to make biodiversity conservation activities and other activities on forest lands compatible.

3. Actions developed under LIFE projects

Despite being localized initiatives, on time and space, the actions implemented under LIFE projects worth of mentioning include:

- Project LIFE 03/NAT/P/000018 – "Active and participatory management of Monfurado Site" whose aim was to promote the conservation of natural values present at the Monfurado Site, bearing in mind the need to reconcile its protection with the main activities on the Site (agriculture, livestock, forestry, hunting).

- Project LIFE 99 NAT/P/006441 - "Montados do Sítio Cabeção – Management of habitats and species" - aimed at the conservation of Cork Oak and Holm Oak forest-pastoral systems and habitats associated with these systems.

- Project LIFE04/NAT/PT/000214 - "Nortenatur –Management and conservation of habitats on the SCIs of São Mamede and Nisa/Laje da Prata" - aims to implement a set of management actions for the conservation of prioritary habitats and other natural habitats associated with them, including the promotion of sustainable management of cork oak, holm oak and Pyrenean oak forest-pastoral systems, stimulating the regeneration of these systems and consequently of all associated priority habitats in these forest systems.

- Project LIFE02/NAT/P/8478 - "Serra da Estrela: management and conservation of prioritary habitats" - aimed at the recovery and conservation of prioritary habitats in Serra da Estrela SCI, present in the Biogenetic Reserve and its surrounding area, promoting their sustainable use by local people, through traditional uses of natural resources. Among the objectives, it was also sought to restore habitats that are indirectly important to the revitalization of traditional forms of forest-agro-pastoral management.

4. Agricultural and Forestry Certification

The certification has become an important component of agriculture and forest management, ensuring the increase in area managed in an environmentally sound manner and thereby contributing to increased biodiversity. This issue is further addressed in target 12.

Although it is possible to identify the actions that were taken in Portugal in order to contribute to this objective, an accounting of the area of agro-forestry-livestock land managed in a manner consistent with the conservation of plant diversity it is not possible.

Identification of future needs and priorities

Recommendations identified in the Report on the Evaluation of the Implementation of the ENCNB:

- Analyze and evaluate the suitability of agro/forest-environmental components provided in the ITI in force, under the PRODER;

- Complete and approve the ITI, as previewed under PRODER.

Other fundamental questions are:

- The need for interministerial coordination and convergence among the agro-forestry and the environmental government sectors. Moreover, the PSRN2000 identifies the "*link between the conservation and rural development policies as a strategic issue for the conservation of biodiversity*", without which Portugal will be unable to meet its obligations under the process of Natura 2000 Network.

- The need for national mapping of natural values (plant species and communities), updated and on an appropriate scale which allow its integration into plans and programs of the agro-forestry sector, particularly in the preparation of PGF and in the certification procedures.

Target 7: 60 per cent of the world's threatened species conserved in situ.

In Portugal there is no Red List of Vascular Flora. There is no assessment of threat status of species of flora, the first step towards in situ conservation was not taken, to the extent that endangered species are not yet identified. Furthermore, knowledge about the distribution of plant species in general is limited.

In these circumstances, the essential information for developing strategies and implementing measures for in situ conservation of endangered species is not available, which also hampers the assessment of this objective.

In respect of flora species listed in the Annexes of the Habitats Directive, identified as meriting protection within the European Union, it is noted that (i) their territories of occurrence (especially species listed in Annex II) are mostly inside areas protected by the Natura 2000 Network (ii) national legislation (transposition of the EU Habitats Directive to domestic law) provides for the protection of plant species listed in Annexes II and IV, namely prohibiting their destruction in the wild.

Nevertheless, most of these species still lack conservation measures on the ground.

The microreserves (see reference in target 5) play a role which must be highlighted in the *in situ* protection, preserving important populations of rare species.

In addition to regulatory measures some actions of *in situ* conservation in protected areas were developed, such as (i) the conservation of endangered species of flora in the National Park of Peneda-Gerês (*Narcissus pseudonarcissus* subsp. *nobilis*, *Iris boissieri* and *Melittis melyssophyllum*) by reducing the grazing pressure and the protection of populations (ii) and monitoring and safeguarding the population of *Narcisus fernandesii* in the Natural Park of Guadiana Valey.

However, we must assume that the development of specific actions for nature and biodiversity conservation integrated into the programming of the activities of protected areas focused mainly, in the mainland, in species of fauna in detriment of wildlife species of flora and geology, and in its majority were not object of a necessary and adequate planning/scheduling in advance. This situation, which must be overcomed, is due mainly to the fact that ENCNB is not translated in action plans that indicate the

required actions, human resources and financial resources.

In the RAA *in situ* conservation actions were developed, taking place mostly in areas of the Natura 2000 Network:

- Restoration of natural habitats through the reintroduction of plant species:: *Juniperius brevifolia, Vaccinium cylindraceum, Laurus azorica, Angelica lignescens, Myrsine retusa, Erica azorica, Calluna vulgaris, Picconia azorica, Myrica faia, Leontodon* sp.*, Tolpis azorica*, *Festuca petraea*, *Azorina vidalii*, *Prunus azorica*, *Frangula azorica* e *Viburnum subcordatum*, *Solidago sempervirens*, *Tolpis suculenta*, *Ilex azorica*, *Woodwardia radicans*, *Ranunculus cortusifolius*, *Lotus azoricus* and *Dracaena draco* subsp. *draco* (Pico, Flores and Graciosa Islands).

- Placement of fencing to protect the single population of *Marsilea azorica* (Terceira Island).

Some *in situ* conservation initiatives aimed at flora species listed in the Annexes of the Habitats Directive, under LIFE projects:

♦ [1999-2003] LIFE B4-3200/98/518 – "*Asphodelus bento-rainhae* –Conservation and Management Measures" - included the development of a management plan for the species in the SCI Serra da Gardunha.

♦ [1999-2003] LIFE Natureza B4-3200/98/498 – "Conservation of four rare species in Valongo" - included the implementation of a series of actions to manage and conserve the habitat of three species of flora: *Culcita macrocarpa, Trichomanes speciosum* and *Lycopodiella cernua*.

♦ [2002-2006] LIFE - Natureza III P\8048 – "National Plan for Conservation of Endangered Flora (1st Fase)" - aimed to implement conservation actions for eight species flora which are considered seriously threatened, with a very limited distribution: *Convolvulus fernandesii, Linaria ricardoi, Marsilea quadrifolia, Narcissus scaberulus, Omphalodes kuzinskyanae, Plantago algarbiensis, Plantago almogravensis* and *Tuberaria major*.

♦ [2004-2008] LIFE04NAT/PT/000212 – "Conservation of Species and Habitats in the Portuguese West Coast" - included the development of a conservation plan for the species *Asplenium hemionitis*.

♦ [2003-2008] LIFE 03/NAT/P/000018 – "Active and participatory management of SCI Monfurado"- included tests of management to the enlargement of populations of species of flora of EU interest *Hyacinthoides vicentina* and *Festuca duriotagana*.

♦ [2000-2003] LIFE 99 NAT/P/006441 - "Cork oak forest-pastoral systems of SCI Cabeção - Management of habitats and species" - included management measures which promote the occurrence of *Halimium verticillatum* and the reintroduction of *Leuzea longifolia*.

Identification of future needs and priorities

As stated in target 2 it is indispensable to invest in the production of the Red List of Vascular Flora of Portugal, which will identify endangered species to be object of *in situ* conservation.

In a second phase, an atlas of endangered species should be an essential tool to underpin the identification of prioritary territories (already highlighted in the Third National Report to the CBD). In general, it is still necessary to invest in acquiring knowledge. Apart from chorological data, population data are needed, information on the ecology of the species, threat analysis and studies on management

for species conservation. It is also necessary to establish a monitoring program.

The RAA already has key information for developing strategies and implementing measures for the *in situ* conservation of endangered species, but the implementation of such measures is needed. In particular it is necessary legislation on the protection and enhancement of the natural heritage of RAA, where the protection of rare and endangered endemic species, currently without legal status of protection, will be contemplated.

It is crucial to invest in the implementation of action plans for species which are prioritary for conservation (the development of these action plans is referred in the future priorities of target 3).

It is also important to ensure the integration of nature conservation policies in land use planning policies, particularly in IGT, especially at the level of PDMs. In this context, the Municipal Ecological Structure (as defined in Decree Law 380/99, 22nd of September, revised by Decree Law 46/2009, 20th of February), has a central role as a *territorial resource that brings together areas, values and fundamental systems for environmental protection and enhancement of rural and urban areas* which should integrate *areas of environmental protection and enhancement to ensure the safeguarding of ecosystems and the intensification of biophysical processes*. In this context, it is considered that the definition of the municipal ecological structure should consider the presence of endangered species, once these are identified in the Red List.

Target 8: 60 per cent of threatened plant species in accessible *ex situ* collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes

There is no Red List of Vascular Flora in Portugal and the assessment of threat status of flora species in not done. So it is not possible to evaluate the percentage of threatened species in accessible *ex situ* collections and recovery programs.

Some national Botanical Gardens have established banks of plant germplasm. In mainland Portugal there is one bank dedicated to native flora at the Botanical Garden of the Lisbon University, which is oriented for conservation actions and is collaborating in this aspect with the ICNB through a protocol signed in 2008. Other bank on the Botanical Garden of Ajuda which is being established.

JBUL-ICNB Protocol

The protocol of cooperation signed between the ICNB and Botanical Garden of Lisbon University, aims to develop *ex situ* conservation measures, including collection and preservation of seeds, oriented to the conservation of flora species that are endemic, rare, vulnerable, endangered or in risk of extintion or that are legally protected. The seed bank will constitute a repository of the genes of the species with the greatest need of conservation measures, which can be used where appropriate to carry out actions of restocking or stock enhancement.

Initial efforts will be directed to species listed in the Annexes of the Habitats Directive. A plan of action for the conservation of wild flora, framing these efforts was drafted in 2009.

In the area of genetic resources for food and agricultural, it is also noteworthy the Portuguese Bank of Plant Germplasm, in Merelim, Braga, among others of a smaller dimension. In 2004, this bank had about 14,000 *accessions* belonging to 114 species[73] .

73 http://marisamota.com/recursos.html

In the RAA and RAM BASEMAC INTERREG Project stands out. The Botanical Gardens of Faial and of Madeira, participated in BASEMAC which general objectives were the creation and the development of a network of seed banks in the geographic area of Macaronesia through actions such as: improving infrastructure and facilities of seed banks; seed harvesting in all the islands of the Macaronesian archipelagos of the Azores, Madeira and the Canary Islands; developing a scientific methodology for the conservation and management of species (strategies of sampling, multiplication, viability tests and genetic variability); developing a database of genetic resources; and disseminating information.

Also in the RAA, the Botanical Garden of Faial has developed procedures for the collection and germination of seeds of rare species such as *Angelica lignescens*, *Azorina vidalii*, *Cerastium azoricum*, *Corema*, *Daboecia*, *Lotus azoricus*, *Myosotis maritima*, *Sanicula azorica*, *Silene uniflora* and *Veronica dabneyi*.

In the RAA is should also be noted the conservation of a living collection of 55 endemic species to the Azores and the germination tests on 26 species endemic to the Azores. The genetic studies on species of natural and endemic flora to the Azores for the genetic characterization of their populations through molecular markers, as well as for its propagation, is in the process of approval by the Regional Administration.

With regard to the availability of nurseries oriented to the preservation and recovery of plant biodiversity the following should be highlighted:

- Nurseries in Nature Reserve of Serra da Malcata. These nurseries are integrated into the structure of the Environmental Education Center of Sr.ª da Graça. They aim at the propagation of plant species with an interest in conservation terms, namely *Quercus pyrenaica*, *Quercus rotundifolia, Prunus lusitanica, Sorbus aucuparia*, *Viburnum tinus, Fraxinus angustifolia* and *Sorbus latifolia.* Plants have been transferred to several entities involved in the recovery of degraded areas, particularly after the occurrence of forest fires.

- Nurseries in the Natural Park of Arrábida under a protocol between the ICNB, the Power Plant of Setúbal, the National Institute of Engineering, Technology and Innovation (INETI) and municipalities in the area of Arrábida. This protocol ended in 2002 but was reactivated by EDP and INETI under the project " Appreciation of industrial termic effluents in protected agriculture – fase 2 - Production of plants from native and protected species in Portugal", which runs between 2007 and 2011. This new protocol has a national coverage and its main objective is the production of plants from native species, protected or endangered. The collaboration with the ICNB is maintained through the collection of seeds and the use of specimens in the recovery of degraded areas.

- In mainland Portugal there are several forest trees nurseries under the administration of AFN. In the RAA there are several forest trees nurseries under administration of the Regional Directorate of Forestry of the Regional Secretariat for Agriculture and Forestry, which have been stringly promoting the propagation of native species with forestry importance, mostly endemic.

Note also the LIFE project "Sustainable laurel forest" which builds on a previous LIFE project "Restoration of the Azores Bullfinch *Pyrrhula murina* habitat in Special Protection Area (SPA) Pico da Vara/Ribeira do Guilherme" which had as its main target the Azores Bullfinch habitat recovery, through the conservation and restoration of threatened Azores laurel forest, characterized by a high degree of endemism of its plants. One of the actions aimed at setting up a nursery for the production of native plants.

Regarding recovery programs (population increase and reintroduction) the following actions should be highlighted:

- Within the LIFE project - B4-3200/98/518 – "*Asphodelus bento-rainhae* – Conservation and Management Measures" actions to boost five sub-populations of *Asphodelus bento-rainhae*.

- Within the LIFE project - Type III P\8048 - "National Plan for Conservation of endangered (Fase 1)" reproduction in nursery of the following species: *Omphalodes kuzinskyanae, Plantago almogravensis, Plantago algarbiensis, Tuberaria major, Linaria ricardoi* and *Convolvulus fernandesii*, to increase populations size.

- Within the LIFE project 99 NAT/P/006441 " Cork oak forest-pastoral systems on SCI Cabeção - Management of habitats and species" an action for reintroduction of the species *Leuzea longifolia*.

- Within the LIFE project 04NAT/PT/000212 - "Conservation of Species and Habitats in the Portuguese West Coast " actions of re-population of *Asplenium hemionitis* from specimens grown in nurseries.

- In the RAA, natural habitat recovery through the reintroduction of plant species: *Juniperius brevifolia, Vaccinium cylindraceum, Laurus azorica, Angelica lignescens, Myrsine retusa, Erica azorica, Calluna vulgaris, Picconia azorica, Myrica faia, Leontodon* sp.*, Tolpis azorica*, *Festuca petraea*, *Azorina vidalii*, *Prunus azorica*, *Frangula azorica* e *Viburnum subcordatum*, *Solidago sempervirens*, *Tolpis suculenta*, *Ilex azorica*, *Woodwardia radicans*, *Ranunculus cortusifolius*, *Lotus azoricus* and *Dracaena draco* subsp. *draco* (Pico, Flores e Graciosa Islands).

- In the RAA, recovery of a population of *Veronica dabneyi* and a population of *Myosotis azorica* (Seed Bank of the Botanical Garden of Faial).

Identification of future needs and priorities

As identified in previous targets, it is crucial the investment in the production of the Red List of Vascular Flora of Portugal, which will identify the threatened species to be subject to *ex situ* conservation and recovery programs.

Some constraints must be overcomed, particularly at the level of financial sustainability, enhancing resources and promoting the coordination between existing structures. In particular, the strengthening of resources for implementation of the protocol between the ICNB and the Botanical Garden of Lisbon University could contribute very significantly to achieving this goal.

It is also noteworthy the need to guarantee that the various institutions operating in this field and make genetic material available to international exchange for scientific purposes, should take into consideration the provisions of the Convention on Biological Diversity, namely in what regards to the sovereignty of the Portuguese State over its national genetic resources. This means that these institutions should comply with the Code of Conduct of the International Plant Exchange Network, to only provide genetic material to botanical gardens recognized as such by the criteria of Botanical Gardens Conservation International. They should also ensure that there is no transfer of the genetic material made available for further commercial purposes and regularly check the property and location of such material (for example through the documentation system provided by IPEN).

The impact of harvesting undertaken by these institutions in the conservation of threatened native flora, should also be evaluated in advance, including erosion of populations of species protected under the Habitats Directive (92/43/EEC) and ensure that harvests are duly licensed by the competent authorities

(in mainland Portugal the ICNB and in the autonomous regions of Azores and Madeira, the respective Regional Directorates for Environment) and framed in the derogation processes foreseen in the legal framework.

Target 9: 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained

National objectives

The ENCNB lists 10 OPE, including "*develop in the entire national territory specific actions for the conservation and management of species and habitats as well as safeguard and promote the landscape heritage and notable features of geological, geomorphological and paleontological elements*". Under this option a DA is set:

m) Pursue, under the coordination of relevant departments of the MADRP, the development of *in situ* and *ex situ* conservation actions of genetic resources in agriculture and aquaculture, especially those of native species and plant varieties and animal breeds, as well as ecosystems in which they have developed.

Actions taken to achieve the objectives

MADRP undertook conservation actions for traditional portuguese varieties of fruits and vegetables:

- Characterization of traditional Portuguese varieties of fruit and vegetables and registration in the National Catalogue of Varieties

- MADRP coordination meetings with various entities, to organize field collections of fruit species (*ex situ* conservation). Tables describing the various species involved were prepared and technical support was provided (activity developed until 2006).

MADRP was involved in the project "European Plant Genetic Resources Information Infra Structure", funded by the EU, which ran from 2000-2003. The project established an infrastructure of information of plant genetic resources held *ex situ* in Europe and created an European catalog with passport data of these collections[74].

Between 2002 to 2005, MADRP also participated in the project "European Crop Wild Relative Diversity Assessment and Conservation Forum", funded by the Fifth Framework Program of the EU. The project sought to establish the conditions necessary for long-term conservation and raise awareness of the need to increase the use of plant genetic resources in Europe.

Decree-Law No. 118/2002, of 20th of April, was published establishing the legal regime of registration, conservation, legal protection and transfer of autochthonous plant material of actual or potential interest to agricultural, agro-forestry and landscape activities including local varieties and wild material, as well as the traditional knowledge associated with it. Decree-Law No. 118/2002 is applied to all local varieties and other wild occurring autochthonous material of plant species with actual or potential interest to agricultural, agro-forestry and landscape activities, regardless of its genotypic composition with exception of the varieties that are protected by intellectual property rights or on which there is an

74 EURISCO - http://eurisco.ecpgr.org/

ongoing process for the allocation of such protection. Presently regulation of this legislation is being drafted.

Under the Regulations of the European Council (EC) No 1467/94 and No 870/2004, oriented to the conservation of plant genetic resources, the National Institute of Agricultural Research is involved in the conservation of genetic resources from melon, grape, cabbage, corn and rice, and in the AEGRO project which aims to establish general principles of *in situ* management (in genetic reserves and farms) of plant genetic resources.

It is also noteworthy in terms of *ex situ* conservation of genetic diversity of cultivated species, the existence of the Portuguese Bank of Plant Germplasm, in Merelim, Braga. In 2004, the bank had about 14,000 *accessions* belonging to 114 species[75].

Under PRORURAL (2007-2013)[76] aids are provided for the intervention and conservation of traditional orchards of the Azores with the objective of preserving plant genetic heritage through the conservation of traditional species.

The "Second National Report on Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture" which iin 2008 presented the state of play on plant genetic resources is a key document for assessing Portugal's contribution to this target.[77]

The following excerpt was taken from this report:

1.1 – The state of diversity and relative importance of all major crops for food security

Two of the most important crops in Portugal are grapevine and olive tree.

Grapevine is important all over the country, where 340 cultivars are officially authorized for wine making. Besides these ones, ten other cultivars are important because they are used for direct eating. A national field collection was installed, during the 1990 decade, for preservation of the autochthonous cultivars. In order to maintain the genetic variability existing within the cultivars (clonal variability) a further 70 collections were established in the farmers´ fields.

Olive is grown in 9% of the agricultural area (INE, 2008), with several autochthonous varieties still grown in the mainland. Portuguese traditional cultivars, like Galega and Cordovil de Serpa, are being replaced by Spanish cultivars, particularly in the Alentejo region, due to higher yield and less susceptibility to abiotic stress. However, some large farms in Alentejo and Ribatejo (e.g. Herdade do Freixo do Meio and Companhia das Lezírias) have programmes for the preservation of traditional Portuguese cultivars.

Despite the genetic erosion that occurred during the last fifty years, there still is a great diversity of apple and pear landraces, mainly in the rural areas from the northern regions of the country. The cultivars most protected from erosion are those with high commercial value as for example, Casanova de Alcobaça, Riscadinha de Palmela, Porta da Loja and Bravo de Esmolfe for apples and Carapinheira, S. Bartolomeu, Pérola, Amêndoa and Pêra Rocha for pears.

Almonds accounts for 40% of all dry fruits production, covering an area around 37000 ha.

75 http://marisamota.com/recursos.html

76 http://prorural.azores.gov.pt/

77 http://www.pgrfa.org/gpa/prt/Portugal2.pdf

The main production areas are in Trás-os-Montes, especially in the hot lands, and in Algarve which is the traditional production area. In the past 15-20 years, Algarve has lost much almond area due to replacements by Citrus among other reasons. In Trás-os-Montes almond trees are having an increasing importance for tourism, being already a factor of attraction to visit the region during blooming time. Especially in the Upper Douro river valley almond is a crop with a long tradition, however, because 50% of the orchards are older than 30 years, the productivity is quite low.

Cereals and pastures and forages are also major crops corresponding respectively to 11% and 59% of the agricultural area. Cereal landraces represent an important reservoir of biodiversity and source of interesting genes to introduce into modern cultivars.

1.2 – The state of diversity and relative importance of minor crops and underutilized species for food security

Grass pea (*Lathyrus sativus*) is a neglected annual pulse crop belonging to the family Fabaceae. This species has been widely cultivated since antiquity for food and feed uses. The most interesting traits of this crop are the adaptability to nearly all types of soils and the tolerance to adverse climatic conditions. Plant germplasm collections are important sources of diversity for plant breeders. At INIA1 a *Lathyrus* breeding programme is carrying out.

1.3 – The state of diversity of wild plants for food production

Riparian woody have several wild plants of food value. As examples we can refer the hazel nut (*Corylus avellana*), hops (*Humulus lupulus*), laurel (*Laurus nobilis*), cherry (*Prunus avium*), plum (*Prunus spinosa*), pear (*Pyrus bourgeana*), blackberry (*Rubus ulmifolius*), elder (*Sambucus nigra*), blueberry (*Vaccinium myrtillus*) and grapevine (*Vitis vinifera* subsp. *sylvestris*).

In addition to the woody species there are also herbaceous plants of importance as food plants, ornamentals or forages. As examples we can refer the strawberry (*Fragaria vesca*), the pennyroyal (*Mentha pulegium*), the watercress (*Rorippa nasturtium-aquaticum*), the narcissus (*Narcissus* spp.), and the clover (*Trifolium resupinatum*). In the stone pine forestry's it is frequent to see the myrtle (*Myrtis comunis*), the lentisk pistache (*Pistacia lentiscus*), the wild olive tree (*Olea europaea* var. *sylvestris*) and the asparagus (*Asparagus* spp.).

2.1 – Plant genetic resources inventories and surveys

2.1.1 – Traditional cultivars

The inventorying of traditional cultivars has been conducted by governmental Institutions (Research Institutes, Universities) and non governmental organizations (NGOs), always with the cooperation of the Agricultural Regional Services. Olive tree and grapevine are important crops and several autochthonous varieties are still grown in the mainland.

Recently (2000-2002), following the Global Plan of Action (FAO, 1996) a strategy Plan which aims to integrate the environmental components into the agricultural and forestry activities was established. One of the scheduled activities was the inventorying of traditional cultivars still grown by farmers.

More than one hundred of traditional fruit trees were inventoried specially of pear, apple, fig tree, cherry tree, chestnut tree, almond and carob tree.

From 2001-2006 a medicinal and aromatic plants survey and inventorying was carried out in Entre Douro e Minho, Trás-os-Montes, Beira Litoral, Beira Interior, and Alentejo. The survey included information on indigenous knowledge, identification and assessment of threat to genetic diversity. Ecotypes of species from the genus *Mentha, Origanum, Thymus, Cynara, Foeniculum, Apium, Hypericum* and *Coriandrum* were identified as being threatened.

A surveying and inventorying (2004-2006) was conducted in Central and Northern Portugal concerning maize, common bean and rye. The survey included information on indigenous knowledge, identification and assessment of the threats to genetic diversity. In the Azores and Madeira Archipelagos an inventorying of the traditional crops grown in the Islands was undertaken with the Project "Germobanco Agrícola da Macaronésia" (2002-2006).

The following tables summarize the traditional cultivars that are still grown in the Islands.

Traditional cultivars of several crops from the Azores Islands

Crop	Number of traditional cultivars
Apple *Malus domestica*)	74
Pear (*Pyrus communis*)	19
Plum (*Prunus salicina*)	6
Chestnut tree (*Castanea sativa*)	15
Sweet potato (*Ipomoea batatas*)	30
Yam (*Colocasia esculenta*)	18
Milho (*Zea mays*)	14
Common bean (*Phaseolus vulgaris*)	17
Broad bean (*Vicia faba*)	1
Onion (*Allium cepa*)	1

Traditional cultivars of several crops from the Madeira Islands

Crop	Number of traditional cultivars
Apple (*Malus domestica*)	20
Sweet potato (*Ipomoea batatas*)	37
Milho (*Zea mays*)	21
Common bean (*Phaseolus vulgaris*)	95
Wheat (*Triticum aestivum*)	47
Onion (*Allium cepa*)	9

The efforts developed by NGOs should also be referred. For instance, "Colher para Semear" is mostly active in inventorying and preserving traditional crops. It published a list of about 350 landraces of 22 species, yearly available to members. A Catalogue was also prepared for landraces of fourteen important crops of "Península de Setúbal", south of Lisbon.

In conclusion, the Portuguese on farm inventory is under development but at present no information is available on line.

Scientific projects oriented to knowledge on cultivar species:

- M. A. Pinheiro de Carvalho, University of Madeira - AEGRO project aiming to establish general principles of *in situ* management (in genetic reserves and farms) of plant genetic resources (2007-2010)
- Teresa Maria Santana Barreto Soares David - Mediterranean ligneous species in cork oak forestry-pastoral sytems: survival to dryness (POCI/AGR/59152/2004)
- Eliseu Betencourt - Project PGR Forum - *European Crop Wild Relative Diversity Assessment and Conservation Forum* (Fifth Framework Program of EU): establish the necessary conditions for long-term conservation and raise awareness of the need to increase the use of plant genetic resources in Europe (2003-2005)
- Helena Maria da Conceição Cotrim - Characterization of populations of genotypes of *Cynara cardunculus* L. var. *altilis* DC used as yeast n the production of Portuguese cheeses with protected designation of origin (POCI/BIA-BDE/55681/2004)

Identification of future needs and priorities

Recommendations identified in the Report on the Evaluation of the Implementation of the ENCNB:

- Regulate Decree-Law No. 118/2002, of 20th of April, related to plant genetic resources and associated traditional knowledge;

- Promote administrative measures to ensure the management of access (and benefit sharing) and exploitation of genetic resources of indigenous flora.

Target 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems

National objectives

One of the DA contained in the ENCNB is "*To develop and implement the national plan to control or eradicate alien species classified as invasive, as envisaged by law, and to develop control and eradication actions towrads these species.*"

Actions taken to achieve the objectives

The Decree-Law No. 565/99, of 21st of December, regulates the introduction into the nature of non-native species. During the 10 years of application of this law, several gaps and inconsistencies in its application were detected and currently a proposal for its revision is being discussed.

ICNB and MADRP, in collaboration with other stakeholders (Municipalities, Universities, Agrarian Schools), had promoted in many protected areas (Parque Natural Vale do Guadiana, Parque Nacional Peneda-Gerês, Reserva Natural Dunas de S. Jacinto, Paisagem Protegida Serra do Açor, Parque Natural de Sintra-Cascais, Paisagem Protegida da Arriba Fóssil da Costa da Caparica, Reserva Natural do Paul do Boquilobo, Pateira de Fermentelos, Parque Natural da Ria Formosa) actions of control and eradication of invasive alien species, with special emphasis on actions oriented to *Acacia* sp., *Carpobrotus edulis*, *Cryptomeria japonica*, *Pittosporum undulatum*, *Arundo donax*, *Lantana camara* and *Eichhornia crassipes*.

Also to be noted is the project of Águeda Municipality, in collaboration with the MAOTDR, to he control / eradication of *Eichhornia crassipes* in Pateira de Fermentelos.

The INVADER Project[78] (by the Department of Botany, University of Coimbra, and Agrarian School of Coimbra and ICNB) has developed a collection of files "Invasive Plants in Portugal - Handnotes for identification and control", which encompasses the thirty species of plants considered invasive by law in Portugal. This project also assessed the potential for recovery of dune systems invaded by *Acacia longifolia*, having proposed a sustainable and consistent action plan, which aims to reduce the areas invaded by *Acacia longifolia* and recovery of affected ecosystems, towards a better management and protection of coastal areas (summary of the project downloadable in

The INVADER II Project[79] is currently underway, promoted by the University of Coimbra, and Agrarian School of Coimbra and ICNB, which aims to draw up an action plan for the control of *Acacia longifolia*, including mechanical and biological control, as well as the development of education and environmental awareness.

Under PRODER Action 2.3.3. "Environmental Improvement of forest areas", support was given to the control of invasive woody plants.

Here we highlight some of the projects undertaken and in progress in RAA:

- Regional Plan for the Eradication and Control of Invasive Flora Species in Sensitive Areas (PRECEFIAS) 2004-2009, approved through Resolution 110/2004 of 29th of July, from the Azores Regional Government, which aim is to eradicate and control sixteen species of invasive plants in sensitive areas on all islands of the Azores archipelago (*Pittosporum undulatum*, *Hedychium gardnerarum*, *Hydrangea macrophylla*, *Arundo donax*, *Gunnera tinctoria*, *Clethra arborea*, *Carpobrothus edulis*, *Lantana camara*, *Ailanthus altíssima*, *Polygonum capitatum*, *Drosanthemum floribundum*, *Acacia melenoxylon*, *Ulex europaeus*, *Ipomoea indica*, *Rubus ulmifolius*, *Pteridium aquilinum*). PRECEFIAS was implemented through monitoring and controlling the locations where interventions and installation of test fields have occurred to study various eradication techniques of *Pittosporum undulatum, Hydrangea macrophylla* e *Arundo donax*;

- Removal of *Hydrangea macrophylla* and habitat restauration with reintroduction of *Rumex azoricus*;

- Control of invasive alien species *Pittosporum undulatum*, *Arundo donax, Carpobrotus edulis* and *Lantana camara*, and reintroduction of *Erica azorica*, *Picconia azorica*, *Myrica faya* and *Ipomea indica*;

- Cutting of specimens of introduced exotic *Cryptomeria japonica* for the recovery of natural habitats;

- Under the Project LIFE 07 NAT/P/000630 "Laurissilva sustentável" (2009-2013) several actions to control exotic vegetation are previewed [C2: Control of *Pittosporum undulatum* and *Acacia melanoxylon* e and restoration of macaronesian woods area; C3: Control of exotic vegetation (*Gunnera tinctoria, Clethra arborea* and *Dicksonia antarctica*) in the prioritary habitat highland bogs and mires; C4 – Control of exotic vegetation (*Pittosporum undulatum, Acacia melanoxylon,*

78 http://www1.ci.uc.pt/invasoras/index.php?menu=66&language=pt&tabela=geral

79 http://www1.ci.uc.pt/invasoras/projectos/invader2/2indice.htm

Gunnera tinctoria, Clethra arborea and *Hedychium gardneranum*) in the prioritary habitat laurissilva forest].

In RAM, through Parque Natural da Madeira, the following projects were developed:

- Programme for the Eradication and Control of invasive plants within the Laurissilva Forest and its neighboring areas (2005, 2006, 2007, 2008);

- Eradication of *Carpobrotus edulis*, in Ponta de São Lourenço (2005, 2006, 2007, 2008) and monitoring and eradication of *Nicotiana glauca*, in Selvagens Islands (2005, 2006, 2007, 2008);

- Implementation of a project to restore the terrestrial habitat of Deserta Grande Island, with the main objective of controlling the domestic goat population, with sustained surveillance and monitoring.

In the autonomous regions it was also published a book on invasive terrestrial fauna and flora, where 100 species are defined as the most harmful, sorted according to their priority for management:

- Silva L, Ojeda EL & Rodriguez-Luengo JL (eds.) *Invasive Terrestrial Flora & Fauna of Macaronesia. TOP 100 in Azores, Madeira and Canaries.* ARENA, Ponta Delgada, 600 pp.

This book is a product of the partnership between the regional governments of the Canary Islands, Azores and Madeira, under the Project INTERREG III B - BIONATURA.

Identification of future needs and priorities

- Complete and adopt the revised Decree-Law regulating the introduction into nature of non-indigenous species (recommendation already contained in the National Report on the Interim Evaluation of the Implementation of the ENCNB).

- Develop the National Plan for Control and Eradication of Invasive Species, with priority given to taxa *Eichornia crassipes* and *Acacia* spp.

- Promote cooperation protocols with ENGO and Municipalities for the elaboration and implementation of local / regional plans of control and eradication of invasive species.

- In RAA, draw up the law on the protection and enhancement of natural heritage of the region, which integrates the regulations on import and possession of exotic species of fauna and flora.

Target 11: No species of wild flora endangered by international trade

National objectives

One of the OPE of the ENCNB is "*To increase international cooperation*". Under this OPE it was defined the following DA:

- *Strengthen the system of implementation and enforcement of CITES and other relevant conventions.*

Actions taken to achieve the objectives

Regarding the flora species listed in Annexes of the Habitats Directive, legally protected at EU level, the national legislation (Decree-Law No. 140/99, of 24th of April, and Decree-Law No. 49/2005, of 24th of February) provides for the protection of plant species listed in Annexes II and IV, including by banning

their possession, transportation, or sale. A species listed in Annex V of the Habitats Directive, *Spiranthes aestivalis*, is still included in Annex A of CITES. Thus, there is no legal trade of native flora species listed in the referred Annexes II and IV. Data on illegal trade is not available.

The remaining flora species are exempt, i.e. they are not included in annexes to multilateral conventions or to EU Directives for Nature Conservation and Biodiversity. Their trade is not controlled and it is not possible to evaluate the impact of international trade on the conservation of these species of flora.

For imports, it must be noted that the maritime customs control is very poor with hardly any knowledge of the specimens, including woods, entering Portugal via this route.

Identification of future needs and priorities

- Improve efficiency of customs inspection.

- Implementation of a *National enforcement group for CITES* in Portugal, foreseen under Decree Law No. 211/2009, of 3rd of September, which will allow for a more effective implementation of this Convention.

- To undertake studies for the assessment of the volume of trade in species not included in multilateral conventions and EU directives for nature conservation and biodiversity, in order to detect potential species to be monitored, or to be proposed for inclusion in CITES annexes.

Target 12: 30 percent of plant-based products derived from sources that are sustainably managed

National objectives

One of the ENCNB's OPE is "*Promote the enhancement of protected areas and ensure the conservation of their natural, cultural, and social heritage*". Under this OPE it is defined the following DA:

- *Stimulate processes of sustainable economic development in protected areas e promote the sustainable use of natural resources, particularly respectful of the natural heritage of these areas, near local populations and economic agents;*

Actions taken to achieve the objectives

In the sustainability context, it should be mentioned certification, which guarantees to consumers that a product arises from a sustainable production.

In the agricultural area is foreseen the certification of agricultural products produced sustainably, including through the certification of Organic Agriculture, Integrated Pest Management and Integrated Production.

Regarding agriculture it needs to be highlighted the National Plan for the Development of Organic Agriculture (2004-2007)[80] published in 2004 by the MADRP, which aimed at creating conditions that allow operators to produce and transform with improved quality, effectively sustaining their business and improving the marketing of organic products.. This Plan proposes 73 guidelines, actions and measures, whose implementation is attributed to various bodies of the MADRP, counting also with the involvement of Universities, farmers associations and other public and private institutions.

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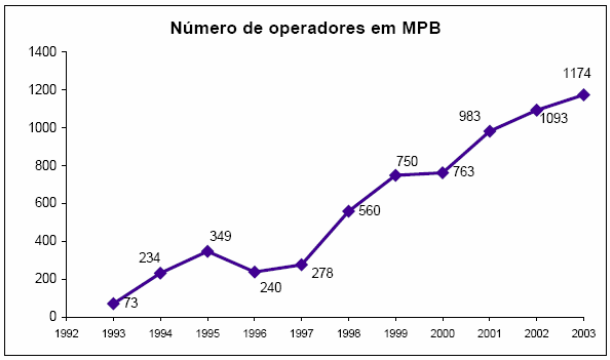
80 http://www.biologicaonline.net/pt//attachments/DataBase/resumo_agr-bio.pdf

In this plan was noted that in Portugal, despite favorable context to organic production, agro-ecological potential, diversity of fauna and flora and many traditional forms of production close to organic production, the number of producers, although growing, slightly exceeds one thousand (in a universe of about 400,000 producers). Also according to the state of play in 2004, since 1986 there is domestic production in organic farming, recognized as such. The number of operators has increased significantly, although growth was not always uniform (see figure). Since 1996 the areas and operators in organic farming began to be checked and certified by a private certification body, which led to a reduction in the number of producers and production areas. Since then, the number of producers and their areas increased, being in October 2003 more than 1,100 manufacturers and 120,000 ha.



Number of producers in Organic mode
(in National Plan for the Development of Organic Agriculture (2004-2007)**)**

Forest certification is a tool that aims to promote a responsible forest management, encouraging the use of forests by ensuring that the choices made ensure its environmental sustainability, economic and social development. Thus, the certification of a forestry area must ensure that the manager performs the management of this area consistent with the conservation of natural values contained therein.

Regarding forest certification, in Portugal there are two systems:

- PEFC (Programme for the Endorsement of Forest Certification Schemes), created in 1999, with the objectives of the certification based on pan-european criteria for sustainable forest management, agreed at the 3rd Ministerial Conference on the Protection of Forests in Europe (Lisbon, June 1998). In Portugal, the PEFC certification is based on the 4406 Portuguese Standard - Sustainable Forest Management Systems, published in 2003 by the IPQ and revised in 2005, which is recognized by PEFC.

- FSC (Forest Stewardship Council), which developed 10 Principles and 56 Criteria, adopted in 1994 and supplemented in 1996. Their compliance ensures the required minimum level for responsible forest management anywhere in the world. These are adapted to local scale, to the ecological and socio-economic conditions of each country, leading to the establishment of national initiatives.

In 2009 Portugal had a total certified forest area of 361,005 hectares out of a total forest area of 3.78 million hectares. 192,819 hectares were certified by the Forest Stewardship Council (FSC) while the remainder was certified by the Programme for the Endorsement of Forest Certification Schemes (PEFC) under which 168,186 hectares were certified. In total, 9.54 per cent of the forest area in Portugal was certified.

The application of agro- and forest-environmental measures helps to achieve this target, in particular through Axis 2 (Improvement of the Environment and Rural Landscape) by PRODER (Rural Development Programme in mainland Portugal) of PRORURAL (in RAA) and PRODERAM (in RAM), an axis which aims to support sustainable development in rural areas, mobilizing farmers and other actors to voluntarly adhere to specific production methods and to the maintenance of biodiversity through agri-environmental incentives. This issue is developed in target 6.

It should be registered the contribution of the agricultural and forestry good practices handbooks developed by the MADRP:

- ***Principles of Forestry Good Practices***, published in 2003 by the MADRP, under Programme AGRO_Measure 7.

- ***Good Practices on the Management of Cork Oak and Holm Oak***, published in 2006 by the MADRP / General-Directorate on Forest Resources.[81]

- ***Basic Handbook on Agricultural Practices – Soil and Water Conservation***, which contains basic rules to be considered for a balanced and responsible management of irrigation, use of plant protection products and fertilizers, preventing also the degradation of water quality and available quantity. It was published in 2000 by the MADRP.[82]

  - adapted to RAM in 2001 by the Regional Secretariat of Environment and Natural Resources.[83]

  - adapted to RAA in 2001 by the Regional Secretariat of Agriculture and Fisheries.[84]

- ***Code of Good Practices to the protectionof water against the pollution with nitratesfrom agricultural sources***, published in 1997 by the MADRP.[85]

The mechanisms of evaluation of this target are insufficient, being particularly difficult to quantify.

Identification of future needs and priorities (commons to target 13)

These recommendations are identified in the National Report on the Interim Evaluation of the Implementation of the ENCNB:

- *Disseminate and promote sustainable economic development processes near local populations and businesses, including agriculture and forestry, aimed at a resposiblel use of natural resources;*

- *Promote the application of incentives, financial or otherwise, for the benefit of various local stakeholders, encouraging the implementation of sustainable development models;*

81 http://portal.min-agricultura.pt/portal/page/portal/MADRP/PT/servicos/mediateca/publicacoes/publicacoes/ficheiros/LIVRO_BPG-SbAz.pdf?_template

82 http://portal.min-agricultura.pt/portal/page/portal/MADRP/PT/servicos/mediateca/publicacoes/publicacoes/ficheiros/Man_Basico_Praticas_Agri.pdf

83 http://www.gov-madeira.pt/sra/geomedia/balcaoverde/Documentos_Tecnicos/Manual_Boas_Practicas_Agricolas.pdf

84 http://www.azores.gov.pt/NR/rdonlyres/C865EA03-52C6-4ED7-A7FC-D5A75905A8FB/387/ManualBPA1.pdf

85 http://portal.min-agricultura.pt/portal/page/portal/MADRP/PT/servicos/mediateca/publicacoes/publicacoes/ficheiros/CBP_Agricolas.pdf

Target 13: The decline of plant resources, and associated indigenous and local knowledge innovations and practices, that support sustainable livelihoods, local food security and health care, halted.

National objectives

One of the ENCNB strategic options is "*promotion of the utilization of protected areas and ensure the preservation of its natural, cultural and social heritage*.". Under this option the following DAs are set:

- *Stimulate processes of sustainable economic development in protected areas and promote the responsible use of natural resources with local people and economic agents, respecting the natural heritage of these areas;*

- *Deepen the knowledge on traditional economic activities that are environmentally sustainable, such as bee keeping, growing and harvesting of aromatic and medicinal herbs or even traditional salt exploitations, as well as on sub-national and local products and encourage their maintenance, dissemination and valorization, including through the certification of origin, eco-labeling and legal protection of quality products not covered by EU legislation;*

- *Promote the recovery and maintenance of traditional systems use and processing of resources inn a compatible way with nature and biodiversity conservation.*

Actions taken to achieve the objectives

As stated in the Report on the Evaluation of the Implementation of the ENCNB, few initiatives have been taken with the specific aim of stimulating sustainable economic development processes, or of promoting the responsible use of natural resources next to local communities and economic agents in protected areas. Special attention could be given to the registration in mainland Portugal, of the trademark "Parques de Portugal" (Parks of Portugal) and in the Azores, the development of a Strategy for Sustainable Economic, Social and Ecological Development in Natural Protected Areas of Macaronesia. Another initiative that aims to stimulate sustainable development on protected areas in mainland Portugal is the National Fair of Natural Parks and Environment. This exhibition dedicated to protected areas in Portugal has as main objective to mobilize the civil society for the issue of biodiversity, to raise awareness on protected areas and encourage their sustainable development, while promoting their quality products.

Trademark “Parques de Portugal"

The registration of the trademark " Parques de Portugal" is a stimulus for protected areas, in order to foster sustainable economic development processes. This action was intended to create a distinctive brand for natural protected areas. The “Parques de Portugal" are territories in which the ICNB, in collaboration with other entities and agencies, aims to foster and support sustainable development, with measures to ensure the maintainance of human poulations in protected areas and to increase the quality of life for those who live there. Trademark “Parques de Portugal" will allow the identification of products, services and facilities associated with these territories, giving them an added value. It addresses the tourism sector and the promotion of Portuguese protected areas and the environmentally sustainable services and production activities, developed within these natural protected areas.

Similarly few specific initiatives were taken for deepening knowledge on traditional economic activities (e.g. bee activity, sea salt production, cultivation of aromatic and medicinal plants) as well as on promoting the recovery and maintenance of traditional systems of use and processing of resources in a

compatible way with nature and biodiversity conservation. However, this objective contributes to the implementation, both in mainland Portugal and in the RAA of Rural Development Programmes 2000-2006 (RURIS and PDRU) and the Agri-Environmental and Rural Development Plan 2007-2013 (PRODER and PRORURAL) (see reference in the target 6).

In addition there is the LEADER initiative, with particular focus on the transnational cooperation project - "Biored Club" which promotes awareness of natural and cultural heritage on the territories covered as well as of goods and services including agro-food products, handcraft and even rural tourism . This project aims at boosting economic activities that are both traditional and eco-compatible.

The following initiatives should also be highlighted:

- Projects approved by the National Strategic Reference Framework (QREN) - POR/N, in 2008: 1196_Agro-forest-pastoralism on the viability of protected areas (Municipality of Ponte de Lima); 453_ Integrated Management Plan of SCI Montemuro (Association of Municipalities of the Southern Douro Valley); 354_Promotion of the Sustainability of Landscapes of the Minho Valley (Intermunicipal Community of Vale do Minho).

- In the scope of the valorization of regional and local products, including through the certification of origin there are seventy two "Protected Denominations of Origin" and “Protected Geographical Indications” in protected areas, including olive oil and aromatic and medicinal herbs of the Natural Park of Serras de Aire e Candeeiros and of the Peneda-Gerês National Park.

- In the scope of the valorization of agricultural products produced in a sustainable manner, the certification of Organic Agriculture, Integrated Management and Integrated Production.

- in the scope of Medicinal and Aromatic Plants a project was developed on the use of national flora species with aromatic and/or medicinal characteristics. It is of great importance for socio-economic groups living in protected areas. However, some of these plants are endemic or very rare and should not be removed from nature. In these cases the cultivation emerges as an alternative to be develop.

- The project AGRO DE&D No. 800 - 'National Network for the conservation and use of aromatic and medicinal plants' (2003-2007) was developed and executed. This project was coordinated by the Portuguese Germplasm Bank (MADRP).

Highlighted initiatives in the RAM:

- In collaboration with the Horticulture Division of the Regional Directorate of Agriculture and Regional Development, the Department of Biology of the University of Madeira and the People's House of the Parish of Ilha, the Natural Park of Madeira developed the Ethnobotany Project of the parish of Santana Island. A survey of local medicinal and aromatic plants was carried out, identifying and cataloging its uses, as well as the traditions and the agrarian technologies associated, contributing to the increasing knowledge on the rural heritage and the recovery of knowledge for future generations (2005, 2006) . The result of this work was published in Sequeira *et al.* (2008) “Plantas e Usos Tradicionais nas Memórias de Hoje” (Plants and Traditional Uses in Todays Memoirs". At this stage a garden of medicinal and aromatics herbs, in organic production mode, is under construction to offer wider variety to visitors. In 2008, an Ethnobotany Project with similar objectives was started

in the parish of Fajã da Ovelha , Calheta.

- The Natural Park of Madeira continued the dissemination of Organic Agriculture in areas within the Natural Park of Madeira, next to the schools and the general population, with grant support at different levels, such as to the certification of farmers products on those areas (2005-2008).

Initiatives to be highlighted in the RAA:

- Creation of a system of incentives for the Cultural Landscape of the Pico Island Vineyard (protocols for maintenance of "corrals" DRR n.º 7/2006/A of February 9, rehabilitation of "corrals" DRR n.º 12/2004/A of 24th April and correction of discrepancies, DRR nº 11/2004/A of April 24).

- SOSTENP project - Strategy of Sustainable Economic, Social and Ecological Development in Natural Protected Areas of Macaronesia. This project is integrated in the Interreg III-B, which ended in June 2006, under which strategies were set for rural development for the archipelagos of Azores and the Canary Islands which, in one hand, prevent the abandonment of rural areas and, secondly, take advantage of natural protected areas, causing people to reverse the negative opinion they have about natural protected areas. The natural resources of the Island of Graciosa, were studied such as biodiversity, with characterization of native and endemic flora and fauna, geodiversity, characterizing the geomorphology, volcanic caves and grottos, inventory of traditional cultivars and hiking trails, as an incentive to sustainable tourism.

Identification of future needs and priorities (common to target 12)

These recommendations are identified in the National Report on the Interim Evaluation of the Implementation of the ENCNB:

- *Disseminate and promote sustainable economic development processes near local populations and businesses, including agriculture and forestry, aimed at a resposiblel use of natural resources;*

- *Promote the application of incentives, financial or otherwise, for the benefit of various local stakeholders, encouraging the implementation of sustainable development models;*

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

National objectives

The following are OPE of the ENCNB:

- *Promote education and training on Nature and Biodiversity Conservation*

- *Provide information, and promote awareness and participation of the public as well as mobilize and encourage civil society*

Actions taken to achieve the objectives

1. ENVIRONMENTAL EDUCATION PROGRAMS

In general

The activities of "environmental education" are generally present in Portuguese schools curricula. On issues related to vegetation the main focus falls on "forest" and "forest fires". A lot schools have herbaria, gardens and educational gardens with aromatic and medicinal plants. A significant number of schools organize field trips where the botanical themes are present.

in ICNB

All Protected Areas carry out actions in this issue: exhibitions; thematic sessions; arboretuns; dissemination of information on local flora through guided tours to different groups of public; volunteer camps; interpretation centers; school contests; guided tours for school groups; production of calendars; initiatives focusing on priority species; activities to disseminate information on the marine flora; and weedseradication and control.

The majority of protected areas has "nature trails" where the theme of flora and vegetation is always present and dominant in some cases. Some of these trails are equipped with specific signals (e.g. reading tables) and there are also flyers and brochures describing them.

LIFE projects

LIFE projects are oriented to the maintenance or restoration of natural habitats and/or species populations to the favourable state of conservation in areas protected under the Natura 2000 Network. These projects have consistently an element of environmental education.

2. EPHEMERIDES

Celebrations

As part of celebration days - Water, Earth, Environment, Forest, in addition to international days (Biodiversity ...) or national (Conservation ...) - several events are organized in which the importance of plant diversity conservation is present.

Green Days (ICNB coordination)

Annual editions of the Green Days seek to engage organizations and individuals in the organization of activities associated with visiting an area classified under Natura 2000 Network or the discovery of habitats and species included in the Annexes of the Habitats and Birds Directives. Many of the Green Days had as main theme the plant communities: cork oak forestry-pastoral systems, oak forests, riparian galleries, old-forests, bogs, etc. Often, the removal of alien invasive species is organized in areas of the Natura 2000 Network.

3. PUBLISHING ACTIVITY

Publishing in general

In Portugal, as a result of the general ignorance about plant diversity, the small number of authors (specialists or not) writing about plants, the scarce number of readers and the low importance given to

the issue by publishers, the issue "flora and vegetation" is not much attractive and therefore there is a general shortage of publications, magazines and books dealing with plants. It adds that the majority of the published material in this domain is from foreign sources and that not even a good Field Guide of "Plants of Portugal" is available.

Nevertheless, it is deemed worthy of note in a 2007 the publication, by the Luso-American Foundation for Development and the newspaper Público, of a series of nine volumes on "Trees and Forests of Portugal" which brought collaborations of many of the best Portuguese experts in this domain.

Publishing activity by the ICNB

As part of its activity the ICNB has published several works related to plants. The current catalog contains more than 20 titles related to this matter. Adding to this type of publications there are brochures and pamphlets for free distribution co-financed by the EU.

4. ORGANIZATION OF TEACHING

General education system

In Portugal, at various levels of education, we have gone from a system in which the traditional disciplines (botany) are increasingly being integrated into global disciplines ("study of the environment"). This situation led to the relativization of the importance of plant diversity - the natural habitats, the diversity of flora and its importance is quite neglected in school curricula, relegating it to an ancillary aspect of the environmental sector where more general themes are highlighted, such as the role of Amazon rainforest.

“Ciência Viva” programme

Ciência Viva is a program based in the experimental teaching of sciences and the promotion of science education in school, in the management of a National Network of Ciência Viva Centres designed as interactive spaces of science dissemination, in campaigns for scientific dissemination, stimulating scientific associations and providing opportunities for public to witness scientific experiments and to have direct and personal contact with experts in different fields of knowledge. The program contains themes directly related to flora and vegetation.

University system

Despite the existence of various schools and courses where the theme "vegetation" is dominant, there is a gap between university teaching and research and the dissemination of information on plant diversity conservation. Botanic gardens (including those of Coimbra and Lisbon), despite their financial constraints, have contributed through various initiatives to increase the interest of citizens in plants. In the RAA and RAM the role of the Botanic Gardens of Faial and Madeira should be highlighted as they have supported and developed various activities aimed at the general public.

5. ELECTRONIC INFORMATION

Blogs

In Portugal there was a rapid evolution in the number of blogs dedicated to the theme "flora and vegetation" contributing to an increased projection of this theme. In a quick reading it can be said that

the number of Portuguese blogs focusing or predominantly concerned with plants is about fifty and many of them, by the quality of images and texts, are excellent tools for learning and dissemination.

ICNB portal

Under the ICNB web site portal the dissemination of the importance of conservation of plant diversity is present through information on some LIFE projects ("Estudos e Projectos") and several online publications placed in the digital library "Biblioteca Digital".

Authonomous regions

In the RAA, the webpage of SRAM in the Regional Government Portal, includes updated content and information on activities, events, programs, projects and campaigns developed, sponsored or supported by SRAM[86]. To support its educational activity, the SRAM has produced a series of information, awareness raising and environmental education materials spanning multiple environmental issues (nature conservation/protected areas, waste, water, marine resources, biodiversity, etc.). These are distributed in the region to NGOs, schools, scouts, local authorities and other entities that request them to implement diferent activities. The ecothecs also promote the release of several educational materials.

In the RAA the coordination work of the Regional Network of Ecothecs of Azores should also be highlighted. The network aims to support and inform the general public about environmental problems, with the purpose of training citizens, both on their role as observers or stakeholders, to be able to reflect and act in a conscious, critical, demanding and effective way in the society.

In the RAM, apart from the web page of the Regional Directorate of Environment[87] which contains institutional information and educational and informational material, the web page of the Natural Park of Madeira[88] provides a collection of information on Protected Areas of the RAM, and the management and nature conservation activities and projects developed by the Park.

6. LOCAL AUTHORITIES ACTIONS

Over the past few years some Portuguese local authorities made an effort in "environmental" terms which translated into the creation of protected areas of local and sub-national level, the establishment of teaching or urban gardens, creation of walking trails or bike lanes, installation of walkways designed to preserve sand dune areas and associated vegetation, creation of interpretation centres, or production of publications. These are actions that in general contribute to public awareness on nature conservation and biodiversity and where the theme of plant diversity is often dealt.

7. CIVIL SOCIETY

Environmental NGO activities

The weakness of the associative practice in Portugal means that the Portuguese NGOs do not have an adequate base of support nor the power to influence as many of their foreign counterparts. However their actions on the field (area management, recovery activities) are relevant. They are also responsible for environmental education activities, publications and interventions in public discussions on projects

86 www.Azores.gov.pt

87 www.dramb.gov-madeira.pt

88 www.pnm.pt

(industrial, tourism, infrastructure ...) where the possibility of degradation of biodiversity is evident or potencial. The adoption of public positions regarding potencial impactes on indigenous vegetation is common.

Businesses projects: the Business and Biodiversity initiative

Under the program "Business and Biodiversity" (introduction of biodiversity in companies strategies and policies) presently stand out a dozen companies that develop programs focusing on plants. These include aspects as diverse as annual award for best practice in the management and enhancement of cork oak forestry-pastoral systems, conservation of mediterranean temporary ponds, restoration of native vegetation, recovery of riparian galleries as ecological corridors, conversion of vineyards to organic production mode, and evaluation and monitoring of protected flora.

Media

Media shows a much wider interest in fauna species than in habitats and flora species. However, there are references to flora and vegetation in the context of news related to options for land management (PDM, POOC, POAP). There is a regular coverage (national and sub-national) of studies or decisions involving impact over natural values and of isolated acts of destruction of vegetation areas by private construction businesses, which result in fines to those involved. Media cover to forest fires with information about the natural values involved should also be mentioned, and the damage to habitats with native species and woods, forests and woodlands of particular value is usually highlighted. The national television channel presents a weekly magazine that gives prominence to environmental issues (Biosfera), but not specifically to plant diversity issues.

Final note

The information dissemination concerning plant biodiversity, particularly in mainland Portugal, is still modest. Fauna is usually used in actions oriented to the promotion of nature conservation and biodiversity. RAA is an exception since there flora has greater proeminence in promoting nature conservation and biodiversity.

Identification of future needs and priorities

These recommendations are identified in the National Report on the Interim Evaluation of the Implementation of the ENCNB:

- Establish professional training programs on conservation of biodiversity for local government officers and technicians of municipalities integrated in protected areas.

- Strengthen the relationship between the Ministry of Environment and Spatial Planning and the relevant departments of the Ministry of Education.

- Promote the timely programming and support initiatives of education and training, including video/TV - documentaries on the natural heritage, protected areas, endangered species, sustainable practices (agricultural/forestry) and opportunities for economic valorization of endogenous resources, among other.

- Develop curricula, of technical nature, in the area of Nature Conservation and Biodiversity, which can be integrated into curricula of secondary or primary schools in rural areas, and primarily in protected areas.

- Consolidate the Information System on the Natural Heritage (SIPNAT), making it operational and effective.

- Revise and strengthen the promotion and creation, in a planned manner, of programs for the dissemination of information on natural heritage and public discussion of matters related thereto.

- Strengthen the relationship with the Museums and Botanical Gardens.

Target 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

National objectives

To promote education and training regarding the conservation of nature and biodiversity is one of the strategic options of the ENCNB.

Actions taken to achieve the objectives

Under the referred strategic option environmental education and awareness programs have been developed. The promotion of vocational training was weak, particularly in what regards conservation of flora and vegetation.

Nevertheless, the number of national experts in this subject has increased due to the training of graduates, masters and doctoral degrees in the area. However, the constraint lies essentially in the fact that most experts in flora and vegetation do not produce work specifically oriented to achieve the targets of this strategy.

Identification of future needs and priorities

- Raise awareness of the scientific community for the importance of their contribution to the GPSC.

- Provide relevant public authorities with the means to comply with the GSPC.

- Integrate the targets of the GSPC in political priorities.

Target 16: Networks for plant conservation activities established or strengthened at national, regional and international levels

<u>AT INTERNATIONAL LEVEL</u>

In the frame of the Habitats Directive, Portugal participates as a member on the committee of implementation of this Directive and in several associated scientific working groups.

In the frame of the Commission meetings on conservation, characterization, collection and use of genetic resources in agriculture, Portugal participated in the meetings of the sub-group "Plant genetic resources in agriculture", particularly in the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

In relation to forestry, it should be noted Portugal's participation in the Standing Committee on Forestry and Forest Group of the European Council.

Portugal participates in working groups under the European Cooperative Program of Plant Genetic Resources (ECPGR).

ECPGR

The European Cooperative Programme for Plant Genetic Resources (ECPGR) (formerly "European Cooperative Programme for Crop Genetic Resources Networks - ECP/GR) was founded in 1980 on the basis of the recommendations of the United Nations Development Programme (UNDP), the Food and Agriculture Organization of the United Nations (FAO) and the Genebank Committee of the European Association for Research on Plant Breeding (EUCARPIA). ECPGR is a collaborative Programme among most European countries, aimed at facilitating the long-term conservation on a cooperative basis and the increased utilization of plant genetic resources in Europe. ECPGR operates through broadly focused Networks dealing with groups of crops or general themes related to plant genetic resources.

ECPGR is structured into nine Networks (six Crop Networks and three Thematic Networks). The activities of the Networks are implemented by Working Groups and Task Forces, belonging to the Crop and Thematic Networks, respectively.

Portugal is represented in EPBRS (European Platform for Biodiversity Research Strategy), a forum where scientists, policy makers and other stakeholders identify the lines of strategic research that is essential to (i) the sustainable use of biodiversity, (ii) the maintenance of environmental functions that provide goods and services, (iii) preserve, protect and restore the natural environment (iv) stop the loss of biodiversity.

The Botanic Gardens Conservation International (BGCI) is a network for the protection of plant diversity in more than 600 botanic gardens in more than 120 countries. The following portuguese botanical gardens are members of BCGI:

Jardim Botânico da Universidade de Coimbra

Jardim Botânico do Faial

Jardim Botânico da Ajuda

Parque Botânico da Tapada da Ajuda

Jardim Botânico da Universidade de Lisboa

Jardim Botânico Tropical

Jardim José do Canto

Four of these portuguese botanical gardens registered its commitment to the International Agenda for Botanic Gardens in Conservation, proposed by BCGI: Jardim Botânico da Universidade de Coimbra, Jardim Botânico da Ajuda, Jardim Botânico da Universidade de Lisboa, Jardim Botânico Tropical.

No âmbito da IPEN network, que facilita a troca de material vegetal entre os *member gardens*, respeitando a regulamentação da CBD sobre o acesso e partilha de benefícios, estão registados e adoptaram o código de conduta do IPEN os seguintes jardins botânicos portugueses:

Under IPEN network, which facilitates the exchange of plant material between the *member gardens*, observing the rules of the CBD on access and benefit sharing, the following portuguese botanical

gardens are registered and have adopted the IPEN code of conduct:

Jardim Botânico da Universidade de Coimbra

Jardim Botânico do Faial

Jardim Botânico da Madeira

Jardim Botanico da Ajuda

Jardim Botânico da Universidade de Lisboa

Jardim Botânico Tropical

Parque Botanico da Tapada da Ajuda

The Ibero-Macaronesian Association of Botanic Gardens (AIMJB), a network of botanical gardens in Portugal and Spain, which aims at the collaboration between its members, promoting and coordinating joint projects and promoting the exchange of knowledge, experience, documentation and plant material, has as its members the following portuguese botanical gardens:

Jardim Botânico da Universidade de Lisboa

Banco de Sementes do Instituto Superior de Agronomia

Jardim Botânico do Faial, Açores

Jardim Botânico da Madeira

Jardim Botânico da Ajuda

Jardim Botânico de Coimbra

Jardim Botânico Tropical

Jardim Botânico da Universidade de Trás-os-Montes e Alto Douro

Jardim Botânico da Universidade do Porto

Jardim Botânico Casa da Cerca

The Jardim Botânico da Universidade de Lisboa is associated to ENSCONET (European Native Seed Conservation Network).

Portugal integrates the Planta Europa network through the Lusitanian Association of Phytosociology (ALFA).

Appendix IV – Acronyms

ABS -	Access and Benefit Sharing
AFN –	National Forests Authority
AincA -	Environmental Incidences Assessment
ALFA -	Lusitan Association of Phytosociology
APA -	Portuguese Environment Agency
ASAE -	Authority for Food and Economic Security
BAP -	EU Biodiversity Action Plan
BRIPA -	Brigade for the Protection of Nature
B&B -	Business & Biodiversity
CA -	Monitoring Committees
CAP -	Common Agricultural Policy
CBD -	Convention on Biological Diversity
CCDR -	Regional Development and Coordination Committee
CCI -	Interministerial Coordination Committee
CFP -	Common Fisheries Policy
CIAM -	Interministerial Commission for Sea Affairs
CNADS -	National Council for the Environment and Sustainable Development
CPLP -	Community of Portuguese Speaking Countries
CRUP -	Council of Rectors of Portuguese Universities
CSF -	Community Support Framework
DA –	Directives for Action of the National Strategy for the Conservation of Nature and Biodiversity
DAC -	Development Assistance Committee
DGIDC -	General Directorate for Innovation and Curriculum Development
DGOTDU -	General Directorate for Land Use Planning and Urban Development
DPH -	Public Water Domain
EEZ -	Exclusive Economic Zone
EIA -	Environmental Impact Assessment
EIS -	Environmental Impact Study
EMAM -	Task Group for Maritime Affairs
ENCNB -	National Strategy for the Conservation of Nature and Biodiversity
ENDR -	National Strategy for Rural Development
ENGIZC -	National Strategy for Integrated Coastal Zone Management
ENGO –	Environmental Non-Governmental Organization
ENM -	National Strategy for the Seas
EPNAZE -	Teams for the Protection of Nature and the Environment in Specific Areas
ERDF -	European Regional Development Fund
ESDP -	Special Land Use Plans
EU -	European Union
FCT -	Foundation for Science and Technology
FEADER -	European Agricultural Fund for Rural Development
GIS -	Geographic Information System
GNR -	National Republican Guard
GTDAA -	Working Group for the Future of Seized and Collected Animals
IAS -	Ivasive Alien Species
IBA -	Important Bird Area

ICNB - Institute for Nature Conservation and Biodiversity
IFN - National Forest Inventory
IGT - Instruments of Land Management
INTERREG - Community initiative that aims to stimulate interregional cooperation in the European Union. It started in 1989, and is financed under the ERDF. The current programme is Interreg IV, covering the period 2007–2013.
IPEA - Inventory of Speleology Heritage of Azores
IPIMAR - Institute of Fisheries and Marine Research
ITI - Integrated Land Interventions
JBUL - Botanical Garden of the Lisbon University
MADRP - Ministry of Agriculture, Rural Development and Fisheries
MAI - Ministry of Internal Affairs
MAOT - Ministry of the Environment, Land Use Planning and Regional Develompement
MAOTDR - Ministry of the Environment, Land Use Planning and Regional Develompement
MCTES - Ministry of Science, Technology and Higher Education
MDN - Ministry of National Defence
ME - Ministry of Education
MPA - Network of Marine Protected Areas
ODA - Official Development Assistance
OECD - Organization for Economic Co-operation and Development
OPE - Strategic Options of the National Strategy for the Conservation of Nature and Biodiversity
OSPAR - Oslo and Paris Conventions for the protection of the marine environment of the North-East Atlantic
PDM - Municipal Master Plans
PDR - Rural Development Program
PENT - National Strategic Plan for Tourism
PEOT - Special Land Use Plans
PGF - Forest Management Plan
PIC - Prior Informed Consent
PIDDAC - Programme of Investments and Development Expenditure of the Central Administration
PMOT - Municipal Land Use Plans
PNA - Natural Park of Arrabida
PNLN - Natural Park of Northern Coastline
PNM - Natural Park of Madeira
PNPOT - National Programme of the Land Use Planning Policy
PNRF - Natural Park of Ria Formosa
PNSAC - Natural Park of Serra de Aire and Candeeiros
PNSACV - Natural Park of Southwest Alentejo and Costa Vicentina
PNSC - Natural Park of Sintra-Cascais
PNTN - National Program of Tourism of Nature
POAAP - Public Water Reservoirs Land Use Plans
POAP- Protected Areas Land Use Plans
POEM - Maritime Areas Spatial Plan
POOC - Coastal Zones Land Use Plans
PRODER - Program for Rural Development on Mainland Portugal
PROF - Regional Plans for Forestry Planning

PROMAR - Fishing Operational Program
PRORURAL - Rural Development Programme of the Autonomous Region of Azores
PROT - Regional Land Use Plans
PSRN2000 - Sectoral Plan for Natura 2000 Network
PSP - Public Security Police
QREN - National Strategic Reference Framework
RAA – Autonomous Region of Azores
RAN - National Agricultural Reserve
RAM - Autonomous Region of Madeira
REN - National Ecological Reserve
RER - Regional Ecological Reserve
RFCN - Fundamental Network for the Conservation of Nature
RNAP - National Network of Protected Areas
RNB - Natural Reserve of Berlenga
RURIS - Rural Development Program
SAC - Special Areas of Conservation
SEA - Strategic Environmental Assessment
SEPNA - Office for the Protection of Nature and the Environment
SCI - Sites of Community Importance
SIPNAT - Information System on Natural Heritage
SNAC - National System of Classified Areas
SNIT - National System of Territorial Information
SPA - Special Protection Areas
SRA - Regional Secretariat of the Environment - RAM
SRAM – Regional Secretariat of the Environment and Sea – RAA
VMS - Vessels Monitoring System