

SUBMISSION by PORTUGAL in reply to Notification No. 2008 - 095 – Voluntary report on implementation of the Programme of work on marine and coastal biological diversity.

| Operational objectives of the elaborated programme of work on marine and coastal biological diversity (annex I of decision VII/5) | Progress made in implementation | Barriers to implementation | Priorities for capacity-building to address the barriers |
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| <p><i>I.I:</i> To apply appropriate policy instruments and strategies, including building of capacity, for the effective implementation of Integrated Marine and Coastal Areas Management.</p> | <p>Portugal is now preparing to the implementation of its Marine Strategy, EU (European Union) Water Framework Directive, EU Marine Strategy Framework directive, and EU Integrated Maritime Policy.</p> <p>A Marine National Strategy¹ was adopted at 12 December 2006. One of its strategic actions is “Protection and Recovery of Marine Ecosystems” with the following main measures:</p> <p>(i) “Promote the conservation, knowledge and valuation of marine biodiversity”</p> <p>(ii) “Establish a national network of marine protected areas and implement the Natura 2000 Network in the marine environment”.</p> <p>As previewed by the Strategy, it was created an inter-ministerial co-ordination commission on ocean affairs (CIAM), to ensure a inter-sectorial co-ordination in what concerns ocean issues and the fulfilment of the strategy objectives.</p> <p>Also a standing forum on ocean affairs, open to the civil society, was established at 7 May 2008 as a consultation and discussion mechanism.</p> <p>CIAM approved several programs, including plans of action: The following deserve to be highlighted:</p> <ul style="list-style-type: none"> - Spatial Planning of the Marine Zone - Environmental monitoring of the Exclusive Economic Zone | <p>Insufficient coordination among those involved and often unclear mandates.</p> <p>Insufficient integration of biodiversity concerns into sectors policies. Lack of experience in communication with stakeholders.</p> <p>No identification of financial support for the maintenance of MACOI – Portuguese Seaweeds database.</p> <p>In RAM (Madeira Autonomous Region) Coastal Zone Management Plans, in most cases, still need to be regulated. Coastal zone management is lacking an integrated and strategic approach. Due to recreational fishing and coastal urban development strong pressures, there is the need of a more adequate planning and control. Can be considered urgent:</p> | <p>Need to implement a module, linked to MACOI – Portuguese Seaweeds database, concerning the ecological state of each coastal station (P-MarMAT: Portuguese Marine Macroalgae Assessment Tool).</p> |

¹ <http://www.mdn.gov.pt/mdn/pt/Mar/estrategia/>

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| | <ul style="list-style-type: none"> - Information System on Marine Biodiversity (MARBIS-Natura 2000) - Marine Protected Areas <p>The Sustainable Development National Strategy² (20 August 2007) refers as one of its objectives “A better environment and valuation of natural heritage”. On this objective several domains are pointed out as essential for sustainable development. From a marine and coastal biodiversity perspective the most important are:</p> <ul style="list-style-type: none"> - To promote an integrated and co-ordinated spatial planning policy and management of the national coastal zone, and to ensure its protection, valuation, and recovery, and its social and economic development. - To promote an effective and sustainable management of activities based on ocean. - To conserve marine biodiversity and establish a network of marine protected areas. <p>Portugal is finishing the preparation of its national strategy for integrated management of the coastal zone. A co-ordination group on coastal zone spatial planning was established to co-ordinate, at national level, the evaluation of plans effectiveness, monitor their implementation and propose new measures. Legislation oriented to the protection of cetacean was developed:</p> <p>An older Decree-Law (No. 263/81, 3 September gives total protection to any species of cetacean (in inland waters, territorial sea, economic exclusive zone) and it is forbidden to hunt, capture or kill any marine mammal. It is also forbidden the selling of marine mammals accidentally killed in fishing gear or found dead.</p> <p>A recent Decree-Law (No. 9/2006, 6 January) adopts the Whale Watching regulation for portuguese mainland sea. 5 modalities of watching activities are established (touristic</p> | <ul style="list-style-type: none"> - Coastal Zone Management Plans adoption - whale-watching legislation and its enforcement adopted by Regional Legislative Chamber - entry into force of Funchal Marine EcoPark | |
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² <http://www.dre.pt/pdf1sdip/2007/08/15900/0540405478.PDF>

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| | <p>operations, scientific, recreational, for audio/video registration, others), and it includes rules concerning approach and watching, as well as types of boat which can be used in this type of activity.</p> <p>The Project Coastwatch³, carried out since 2003 by GEOTA, an NGO, has <i>inter alia</i> the following objectives:</p> <ul style="list-style-type: none"> - Increase the knowledge of Portuguese coast line; - Raise awareness among the youth in particular and public in general, for the impacts of human activity in the coast line and increase their involvement and participation in the topic; - Collect, through a questionnaire focused on coast environmental issues and to store and analyze such data so they can be useful for coastal protection and management. <p>The Project “Cooperative Governance of MPAs (eco-social dialogue on the capacity building of stakeholders to ocean sustainability), carried out Institute of Marine Research (IMAR)⁴, has as global objective to design a cooperative governance model to MPAs which contributes to the implementation of sustainable development policies in ocean management.</p> <p>With focus on Luiz Saldanha Marine Park, this Project will try to define, involving all stakeholders (local communities, fishermen, spear fishermen, divers, touristic operators, local and central authorities, NGOs, private sector, international agencies, etc.) a common vision to these protected areas. This will allow a more integrated management of coastal habitats and traditional fisheries with an increased effectiveness of these MPAs.</p> <p>It is intended that in the future (after the project) the adopted model may function by itself, and that the model can be useful in other national MPAs, in support of biodiversity conservation and socio-economic sustainability.</p> | | |
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³ <http://www.coastwatch-coastwatch.blogspot.com/>

⁴ <http://www.imar.pt/>

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| | <p>IMAR – Institute of Marine Research⁵ established a Portuguese Macroalgae database: MACOI – Portuguese Seaweeds⁶.</p> <p>In RAM (Madeira Autonomous Region) voluntary guidelines on good practices for whale-watching were adopted by most of the touristic operators (although is not yet regulated).</p> <p>ICNB⁷ is currently preparing its plan of action to the conservation of marine environment (2009-2013) being the main objective the compliance with its obligations, in the expected deadlines, and with an evaluation of the results through identified mechanisms.</p> <p>Five topics were identified:</p> <ul style="list-style-type: none"> - To encourage the acquisition of knowledge about species, habitats and ecosystems, and about human activities in the marine environment, necessary to the implementation of this plan of action, promoting the compilation, validation and consolidation of such knowledge, using spatial information tools and integrated metadata and databases. - To ensure the integration of biodiversity concerns in the relevant sectoral policies, through the establishment of coordination and planning mechanisms, promoting clarity on competences and responsibilities of those involved, promoting synergies and contributing to the expeditiousness of intra and inter-sectoral procedures. - To establish an internal structure, adequate to the implementation of the plan of action, ensuring the needed competences at all levels. - To evaluate, identify and designate zones with biologically or ecologically significance to the conservation of species, habitats and ecosystems, as the base for the establishment of a coherent MPA network. - To implement an effective MPA management system, | | |
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⁵ <http://www1.ci.uc.pt/imar/unit/>

⁶ <http://macoi.ci.uc.pt>

⁷ <http://portal.icnb.pt/ICNPortal/vPT2007/>

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| | integrating the available tools (including evaluation criteria and indicators) and involving the relevant users. | | |
| 1.2: To undertake direct action to protect the marine environment from negative impacts. | <p>IMAR – Institute of Marine Research developed a tool (P-MarMAT) for the evaluation of coastal waters ecological state, in line with the EU Water Framework Directive.</p> <p>In RAM (Madeira Autonomous Region), in general, commercial fishing sector, harbours and marinas are following environmental good practices. Sewage and wastewater treatment plants cover the entire coastline. There is a Contingency Plan for Marine Pollution in the Macaronesian Region regional contingency plan (Law) for marine environmental disasters, such as oil spills (INTERREG III B – PLACON Project)⁸. In RAM, to avoid damaging the sea bottom fixed buoys for mooring have been deployed in the most visited spots inside MPAs.</p> | <p>Insufficient coordination among those involved and often unclear mandates. Insufficient integration of biodiversity concerns into sectors policies. Need of additional resources for surveillance and law enforcement.</p> <p>In RAM (Madeira Autonomous Region) a high human pressure occurs mostly derived from urban expansion, including for tourism purposes (buildings, hotel facilities, harbors and marinas).</p> | <p>In RAM (Madeira Autonomous Region) there is a need to increase the maritime surveillance resources. Awareness and education programs focused on different targets need to be established. There is a need to assess the ecosystem contamination levels (e.g. heavy metals and PCB's), as well as potential bioaccumulation levels.</p> |
| 1.3: To develop guidelines for ecosystem evaluation and assessment, paying attention to the need to identify and select indicators, including social and abiotic indicators that distinguish between natural and human-induced effects. | <p>An project is being developed by CIMAR – Laboratory of Coastal Diversity⁹, studying the <u>“Latitudinal differences on the biology of key species in estuarine systems as indicators for changes caused by climatic changes”</u>. These project is being funded by technology ans Science Foundation (FCT) from 2005 to 2008.</p> | <p>Knowledge gaps.</p> | |
| 2.1: To promote ecosystem approaches to the conservation and sustainable use of marine and coastal living resources, including the identification of key variables or interactions, for the purpose of assessing and monitoring, | <p>Another project developed by CIMAR – Laboratory of Coastal Diversity¹⁰, is <u>LIMITS - Population dynamics, geographical distribution and genetic diversity of macroalgal species at their southern distribution limits</u>, is an FCT project funded from</p> | <p>Insufficient coordination among those involved. Significant knowledge gaps. Insufficient integration of</p> | <p>In RAM an onboard observatory system should be implemented for black scabbard fisheries, in order</p> |

⁸ Involved institutions: Maritime Police, Funchal harbour and Porto Santo maritime authorities, Madeira Natural Park Service (park rangers), Republican National Guard – Environmental Brigade

⁹ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

¹⁰ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

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| <p>first, components of biological diversity; second, the sustainable use of such components; and, third, ecosystem effects.</p> | <p>2005-2008. The overall objective of this project is to determine the vulnerability and conservation value of some brown algae and the communities they dominate at their distribution limit.</p> <p>Also ongoing on CIMAR – Laboratory of Coastal Diversity¹¹ is the project <u>Ecophysiological response of <i>Fucus serratus</i> to Thermal stress at its Southern Distributional Limit: Implications in a Warning up Scenario</u>. Is funded by Acção Integrada Luso-Espanhola HP2007-0081 from 2008-2009.</p> <p>MACOI database was developed and implemented in order to record the biodiversity of <i>macroalgae</i> along the Portuguese shoreline and contributing to ensure the sustainability of their use.</p> <p>In RAM fisheries activities are regulated, <i>inter alia</i>, by a system of quotas, minimum legal sizes and fishing permits control, according to EU regulations and EU Fishing Common Policy. Fish landings are also monitored by local authorities¹².</p> | <p>biodiversity concerns into sectors policies. Low technical capacity.</p> <p>There is insufficient funding support to field trips, monitoring and biodiversity surveys.</p> <p>In RAM, in what regards fisheries activities, some of the by catch species are probably heavily underestimated or even ignored since many species are discarded offshore or sold unregistered.</p> | <p>to evaluate and minimize or avoid by-catch.</p> |
| <p>2.2: To make available to the Parties information on marine genetic resources in marine areas beyond national jurisdiction and, as appropriate, on coastal and marine genetic resources under national jurisdiction from publicly available information sources.</p> | <p>In RAM there are several sample databanks for genetic analysis, namely for stock and population assessments: fishes, marine turtles, cetaceans, seabirds, etc. Most of the source populations are probably within national jurisdiction waters; some species are highly migratory, and spend only part of their life cycles within national waters.</p> | <p>Significant knowledge gaps.</p> <p>In RAM the barriers are mostly financial, e.g. for data analysis.</p> | <p>In RAM to implement a regional database of species bar-codes (for all marine <i>taxa</i>, with priority for endangered and commercially relevant species).</p> |
| <p>2.3: To gather and assimilate information on, build capacity to mitigate the effects of, and to promote policy development, implementation strategies and actions to address: (i) the biological and socio-economic consequences of physical degradation and destruction of key marine and coastal habitats including mangrove ecosystems, tropical and cold-water coral-reef ecosystems, seamount ecosystems and seagrass ecosystems including identification</p> | | <p>Significant knowledge gaps.</p> | <p>In RAM, protection measures for cold water coral reefs should be put in place.</p> |

¹¹ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

¹² Involved institutions: Macaronesian Studies Center (University of Madeira), Mariculture Centre of Calheta (Regional Fisheries Directorship), Regional Environmental Directorship, Madeira Natural Park Service

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| <p>and promotion of management practices, methodologies and policies to reduce and mitigate impacts upon marine and coastal biological diversity and to restore mangrove forests and rehabilitate damaged coral reef; and in particular (ii) the impacts of mangrove forest destruction, coral bleaching and related mortality on coral-reef ecosystems and the human communities which depend upon coral-reef services, including through financial and technical assistance.</p> | | | |
| <p>2.4: To enhance the conservation and sustainable use of biological diversity of marine living resources in areas beyond the limits of national jurisdiction.</p> | | | |
| <p>3.1: To establish and strengthen national and regional systems of marine and coastal protected areas integrated into a global network and as a contribution to globally agreed goals.</p> | <p>A new nature and biodiversity conservation regime (Decree-Law No. 142/2008, 24 July), established the framework for the national network of marine protected areas (mainland).</p> <p>In the mainland there are 22 protected coastal areas, including features like cliffs, sandbanks, reefs, coastal lagoons, bays or estuaries.</p> <p>In the Autonomous Region of Azores (RAA) there are 21 coastal sites (including, among other features: cliffs, reefs and islets) and 8 MPAs. The following areas were proposed to the OSPAR MPA network: Seamount Formigas, Corvo Island, Hydrothermal vent Rainbow, Seamount D. João de Castro, Hydrothermal vent Lucky Strike, Hydrothermal vent Menez Gwen, Faial-Pico Channel and Seamount Sedlo (the 8th and widest Portuguese OSPAR MPA with 401 253 ha was designated In 2007).</p> <p>In Autonomous Region of Madeira (RAM) the Natura 2000 network extension to the marine environment is also under development.</p> <p>RAM designated new MPAs (“Porto Santo”) in August 2008 (to enlarge the existing network already comprising the MPAs</p> | <p>Knowledge gaps. Scarce human resources. Marine environment undervalued by the community. Insufficient coordination among those involved. Insufficient financial resources.</p> <p>Lack of a marine species red list/book. Lack of a marine habitats red list/book.</p> <p>Significant efforts needed to delineate off-shore MPAs.</p> <p>In RAM there is insufficient data on most ecologically or biologically significant or most sensitive areas to be designated as MPAs.</p> <p>Additional resources are needed to implement seamounts MPAs, which are</p> | <p>In RAM more marine areas should be designated as MPAs in order to function as re-stocking areas. The research on ecosystem characterization and description needs to be improved.</p> |

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| | <p>“Garajau”, “Rocha do Navio (Ilhéu da Viúva)”, “Desertas” and “Selvagens”¹³. Other protected area with marine area is the “Ponta de São Lourenço” (which includes coastal cliffs and some islets). In RAM management plans for MPAs are in place or under development. Currently on the table there is one proposal to enlarge OSPAR area, so that RAM can be included.</p> <p>The objective of the Project CETACEOSMADEIRA II , proposed by Machico Municipality is to identify the most importante areas for <i>Tursiops truncatus</i> in Madeira coastal zones, so that Natura 2000 network areas can be established for the protection of this species.</p> <p>A project - Marine IBAs¹⁴¹⁵ (2004-2008), co-funded by EU LIFE programme, is oriented to the collection of information on distribution of marine birds, which occur near mainland, Azores and Madeira coasts. Data will allow a general view of distribution and with their combination with other information sources it will be possible to reach some detail in particular cases (such as some Azores islands or Berlengas islands). Consequently, after using <i>BirdLife Internacional</i> IBA criteria, areas considered important to some bird species are being defined. It is expected that a report will be published soon.</p> <p>The document “<i>Implementing N2000 in the marine environment - Marine IBAs: Lisbon-Vilanova conclusions</i>”¹⁶ makes a summary of target-species studied by the Project. It classifies them as coastal or off-shore birds and it identifies procedures to deal with each species, as well as with each criteria of Birdlife International IBA Programme. This programme, initially designed for a terrestrial environment programme, was adapted to the marine environment.</p> <p>The project - Marine IBAs collected information on the most important marine areas for birds which will be vital for the designation of Special Protection Areas (EU Birds Directive) in</p> | <p>located quite far from the main islands.</p> | |
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¹³ Involved institutions: Regional Environmental Directorship, Madeira Natural Park Service, Regional Fisheries Directorship

¹⁴ <http://programamarinho.spea.pt/index.php?op=projibas>

¹⁵ Carried out by SPEA (NGO), and involving as partners Institute of Marine Research-IMAR, Department of Oceanography and Fisheries (University of the Azores), IPIMAR - National Institute of Biological Resources, Madeira Environment and Natural Resources Regional Secretariat - Madeira Natural Park, Aveiro University and Institute for Nature and Biodiversity Conservation.

¹⁶ http://www.birdlife.org/ibas/1_identifying/1.5Marine_IBAs_Lisbon-Vilanova_conclusions.pdf

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| | <p>the marine environment.</p> <p>See Project M@rBIS – Natura 2000 (Marine Biodiversity Information System – Natura 2000) (2008-2011) below.</p> <p>The Project MPAs Network, coordinated by ICNB (Institute for Nature and Biodiversity Conservation) was approved by CIAM (inter-ministerial co-ordination commission on ocean affairs) and it is included in the National Program “Spatial Planning of the Marine Zone”. It intends to expand the MPA network, which already includes five MPAs of the mainland sea (Parque Natural do Litoral Norte; Parque Natural da Arrábida; Parque Natural do Sudoeste Alentejano e Costa Vicentina; Reserva Natural das Berlengas; Reserva Natural das Lagoas de Santo André e Sancha). In the future it will include other areas designated under the EU Habitats and Birds Directives. Also the connectivity among these areas is considered an important topic.</p> | | |
| <p>3.2: To enhance the conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction.</p> | | | |
| <p>3.3: To achieve effective management of existing marine and coastal protected areas.</p> | <p>The BIOMARES¹⁷ project (2007-2011), co-funded by EU LIFE programme, is lead by CCMAR¹⁸ (Algarve University) with ICNB, IPIMAR, ISPA, CSIC, and SECIL as partners. Its main objective is to conserve and recover the biodiversity of the Marine Park Prof. Luiz Saldanha (in Parque Natural da Arrábida), making available the necessary financial and technical means to implementing structures which allow recreational boating activities, such as anchoring, without degradation of sensible areas of reefs and sandbanks. It also allowed applying technical measures for the recovery of eel grass prairies.</p> <p>The Project includes several actions, such as:</p> <ul style="list-style-type: none"> - Establishment of environmentally sound anchoring points and a floating pier; | <p>Knowledge gaps. Low technical capacity. Insufficient coordination among those involved. Insufficient integration of biodiversity concerns into sectors policies. Scarce human resources. Lack of financial resources. Additional resources needed for surveillance and law enforcement.</p> <p>In RAM one of the barriers</p> | <p>In RAM a network of rescue and recovery centres for endangered marine species (seabirds, sea turtles, cetaceans and monk seals) needs to be developed. The carrying capacity of MPAs and the sensitivity of ecosystems in relation to human activities need to be studied.</p> |

¹⁷ <http://www.ccmар.ualg.pt/biomares/>

¹⁸ <http://www.ccmар.ualg.pt/>

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| | <ul style="list-style-type: none"> - Recovery of seagrass prairies (<i>Zostera marina</i> and <i>Cymodocea nodosa</i>), including collecting in donor sites and experiments on seed germination and plant development in controlled environment oriented to the increasing of populations genetic variability; - Communication and public and users awareness; - Characterization and mapping of sea bottom in the Park and its vicinity till 100m deep; - Monitoring of the effectiveness of Project and Park spatial planning measures. | are the conflicts with the fisheries sector. Additional resources are needed to the development of Management Plans. | |
| 3.4: To provide support for and facilitate monitoring of national and regional systems of marine and coastal protected areas. | | Scarce human resources. Difficulties in sustaining long term monitoring programs due to changing priorities. | |
| 3.5: To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of management of marine and coastal protected areas. | <p>The project M@rBIS– Natura 2000, coordinated by ICNB (Institute for Nature and Biodiversity Conservation) and EMEPC (Task Group for the Extension of the Portuguese Continental Shelf)¹⁹, and co-sponsored by GALP²⁰, was approved by CIAM (inter-ministerial co-ordination commission on ocean affairs) and it is included in the National Programme “Information and Knowledge Network for the Ocean”. This Project intends to develop an information and analysis system which allows to obtain the necessary data on marine biodiversity from coastal and off-shore waters under national jurisdiction to allow Portugal to fulfil its commitments and to detect the gaps to be filled by future research and monitoring programmes. The first phase of the project is the collection of existing information, published or not, which is scattered by diverse relevant institutions (national or international).</p> <p>It will be an important tool in the process of designating as MPAs areas of biologically or ecologically significant and to</p> | Scarce human resources. An integrated marine research strategy for RAM is needed. | <p>To implement the EU Strategy for Marine Research.</p> <p>In RAM there’s the need to establish structured ways of know-how transfer, mainly in marine sciences and fisheries fields, in relation with the application of the ecosystem approach, e.g. through information networks.</p> |

¹⁹ <http://www.emepc.gov.pt/in/missao.php>

²⁰ <http://www.galpenergia.com/galp+energia/portugues/noticias/historico/y2008/m03/instituto-conservacao-natureza.htm>

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| | <p>the extension of the Natura 2000 network to the marine environment. It will also allow building sensitivity maps for target species and habitats.</p> <p>The Oceano Consortium on Research & Development, was established by Ministers Council Resolution No. 124/2006 to coordinate activities among State laboratories, associated laboratories, companies, universities, and other institutions, national or not, including relevant international partners, to pursue mutual objectives and develop scientific and technical centres in a coordinated way, to promote international cooperation in oceanography, Portugal participation in community and European programmes and the sharing of vessels, planes and other equipment.</p> <p>The MACOI database is a valuable tool for Macroalgae research and related monitoring activities.</p> <p>In what concerns monitoring of the ecological state of coastal waters it was developed by IMAR a tool named P-MarMAT (Portuguese Marine Macroalgae Assessment Tool).</p> <p>NEASTG (North Eastern Sea Turtle Group), which includes Madeira Archipelago, is under development.</p> <p>In RAM training programmes on marine taxonomy have been carried out, mainly by the Univ. Madeira, targeted for graduated, MSc and PhD students. MSc and PhD projects have been developed at Univ. of Madeira, often in collaboration with local institutions, focused on MPAs, threatened and/or endangered marine species (including birds, cetaceans, monk seal and turtles), and other marine resources (phytoplankton, fish stocks)²¹. Some genetic monitoring is carried out in some <i>Pterodroma</i> species populations, marine turtles and cetaceans.</p> | | |
| <p>4.1: To promote use of techniques, which minimize adverse impact of mariculture on marine and coastal biological diversity.</p> | <p>CIMAR – Laboratory of Coastal Diversity²² is developing a project concerning Species diversification and improvement of aquatic production in seaweeds purifying effluents from</p> | <p>Insufficient integration of biodiversity concerns into mariculture sector.</p> | |

²¹ Involved institutions: Regional Fisheries Directorship, Funchal Marine Biology Station, Whale Museum, Funchal Municipality Museum, University of Madeira

²² http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

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| | <p>integrated fish farms (SEAPURA):</p> <ol style="list-style-type: none"> 1) Use of <i>Porphyra dioica</i> in integrated aquaculture systems. 2) Ecophysiological studies and the integrated aquaculture of <i>Gracilaria bursa-pastoris</i> (S. G. Gmelin) P.C. Silva from Ria de Aveiro, Portugal. 3) Cultivation of <i>Grateloupia turuturu</i> in integrated aquaculture systems. <p>In RAM south coast artificial reefs were deployed in order to improve fish stocks. Good practices protocol, complying with EU regulations on environmentally-friendly mariculture, was distributed in the sector²³. Attempts to develop mariculture techniques on native species with high commercial value such as <i>Pagrus pagrus</i> and <i>Seriola</i> sp. are under development. Effective site selection methodology for mariculture, in the framework of integrated marine and coastal area management, was developed and applied.</p> | <p>Insufficient coordination among those involved.</p> <p>In RAM fish farms currently operating are offshore cages, highly prone to heavy sea storms (an unusually strong storm occurred in April 2008 causing the destruction of some cages, allowing several tones of <i>Sparus aurata</i>, a non-indigenous species, to be released in to the wild). Priority should be given to the use of native species, avoiding alien species and forbidding the use of potential harmful species. Need of an integrated pollution prevention and control.</p> | |
| <p>5.I: To achieve better understanding of the pathways and the causes of the introduction of alien species and the impact of such introductions on biological diversity.</p> | <p>The project INSPECT²⁴- Introduced marine alien species in Portuguese estuaries and coastal areas: patterns of distribution and abundance, vectors and invading potential (2009 - 2011) will be lead by Science Faculty Foundation (University of Lisbon) with ICNB, Ports e Maritime Transportation Institute, League to Nature Protection, Évora and Azores Universities as partners. The Project has as objectives the study of occurrence patterns of marine alien species in portuguese estuaries and coastal zones, to evaluate environmental conditions prone to the establishment potential invasive species and contribute to a increasing of the public awareness on this threat.</p> <p>In a initial phase all relevant information will be collected, with a consolidation of data and taxonomical validation.</p> <p>At the same time the maritime routes including portuguese harbours will be studied, to support a sampling strategy</p> | <p>Knowledge gaps. Additional resources needed to establish long term monitoring programmes.</p> | <p>In RAM a management plan for <i>Diadema antillarum</i> population is needed. There is a need to improve understanding of climate change effects.</p> |

²⁴ http://www.fct.mctes.pt/projectos/pub/2006/Painel_Result/vglobal_projecto.asp?idProjecto=73579&idElemConcurso=860

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| | <p>definition.</p> <p>Campaigns and sampling will be directed to different taxonomic groups, namely phytoplankton, zooplankton, algae and invertebrates in mobile and rocky substrata. Sampling will take place in different coastal and estuarine systems, such as Tagus and Mira, and Sines, Ponta Delgada, Lisbon and Vila Nova de Milfontes marinas and their neighbouring areas, as well as in ballast water tanks of selected ships.</p> <p>An inventory of marine alien species identified in Portuguese water bodies, including whenever possible the following information: valid taxonomy, introduction dates and places, habitat types affected, pathways of introduction and dispersal routes, population numbers, possible impacts and prevention and mitigation measures.</p> <p>Based on the Project findings proposals on priority areas and species will be presented, to support management. It is also expected to promote cooperation among scientific community, authorities and civil society.</p> | | |
| <p>5.2: To put in place mechanisms to control all pathways, including shipping, trade and mariculture, for potential invasive alien species in the marine and coastal environment.</p> | <p>Portugal complies with relevant EU legislation²⁵ and MARPOL Convention.</p> <p>OSPAR Commission adopted voluntary guidelines to maritime sector concerning vessels entering ports and their ballast waters.</p> <p>“The General Guidance on the Voluntary Interim application of the D1 Ballast Water Exchange Standard in the North-East Atlantic” was agreed by all contracting parties (including Portugal) and entered in force at the 1st of April 2008.</p> <p>Concerning the use of alien and locally absent species in aquaculture, and in order to prevent possible negative impact on the surrounding environment, there is compliance with related EU regulation, such as the Council Regulation²⁶.</p> <p>In RAM there is an obligation of environmental impact assessments for mariculture developments with more than 1000 ton/year production.</p> | <p>Insufficient integration of biodiversity concerns into sectors policies.</p> <p>In RAM the heavy maritime traffic cruising ocean waters add difficulty to the control of the introduction (accidental or intentional) of alien species. Specific criteria and guidelines for EIA for intensive fish farms need to be established. Additional resources needed for legislation enforcement. There is a need of an action plan and mechanisms to control accidental or</p> | <p>In RAM a CEPA programme concerning IAS needs to be developed.</p> |

²⁵ http://www.emsa.europa.eu/Docs/workshops/081219_workshop_report_-_final.pdf

²⁶ http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Regulation&an_doc=2007&nu_doc=708

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| | | intentional release of alien species. Current RAM legislation needs to be revised. | |
| 5.3: To maintain an incident list on introductions of alien species. | <p>One of the purposes of the MACOI database is to store records regarding the introduction of alien species and their geographical progression.</p> <p>In RAM few marine species that might be invasive in the long term, namely algae, have been anecdotally reported. Some researchers keep track of new alien species.</p> | Significant knowledge gaps. | Need to establish a long term monitoring programme and to undertake a thorough alien species assessment. |
| 6.1: To assemble a database of initiatives on programme elements through a cooperative approach with relevant organizations and bodies, with special emphasis on integrated marine and coastal areas management. | <p>CIMAR – Laboratory of Coastal Diversity²⁷ is also participating in <u>MarBEF - Marine Biodiversity and Ecosystem Functioning</u>²⁸ (Network of Excellence. Funded by European Commission, 6th Framework Program, from 2004 to 2009).</p> <p>a. BIOFUSE²⁹ - Effects of Biodiversity on the Functioning and Stability of Marine Ecosystems.</p> <p>b. MARPACE: Pan-European Gradients in Spawning and Settlement Events.</p> <p>c. PROPE taxon: Web Accessible Taxonomic Expertise in MarBEF: Providing an e-Platform for the European Taxonomists.</p> <p>d. GBIRM: RMP in Genetic Diversity.</p> <p>f. ROSEMEB: Role of Secondary Metabolites in Ecosystem Biodiversity.</p> <p>e. MOBIDIC: Network of coastal monitoring.</p> <p>In RAM questionnaires were sent to local institutions that develop some sort of research and/or management of coastal and marine habitats³⁰.</p> | <p>Insufficient coordination among those involved.</p> <p>In RAM there is a high fragmentation of initiatives, often carried out at individual level, not at institutional level. There is the need for IT tools to spread further, including through the establishment of discussion lists or web-based platforms in order to improve knowledge transfer.</p> | In RAM there is a need to establish an online database and/or platform of research on marine related issues and perform the subsequent gap analysis. There is also the need to improve technical capacities, namely for the database building and management. |

²⁷ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

²⁸ www.marbef.org

²⁹ <http://www.marbef.org/projects/biofuse/index.php>

³⁰ Institution involved: Regional Environmental Directorate (under the NET-BIOME ERA Net initiative)

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| <p>6.2: To undertake effective collaboration, cooperation and harmonization of initiatives with relevant conventions, organizations and agencies while recognising their independent mandates.</p> | <p>CIMAR – Laboratory of Coastal Diversity³¹ is also participating in:</p> <p><u>BIODIVERSA</u>³² is an ERA-net (European Research Area) on Biodiversity. The project aims at setting up efficient trans-national co-operation in the field of biodiversity research funding. Funded by European Commission, 6th Framework Program, from 2006 to 2009.</p> <p><u>BIOSTRAT</u>³³ – Developing the EU Biodiversity Research Strategy. Funded by European Commission, 6th Framework Program, from 2006 to 2009.</p> <p><u>MARBENA</u>³⁴ aims to create the long-term infrastructure for marine biodiversity research in Europe.</p> <p><u>EPBRs</u>³⁵ – European Platform for Biodiversity Research Strategy.</p> <p>There is also a national network of researchers and institutions working in marine and coastal biodiversity <u>divMar</u>³⁶ – Rede de Biodiversidade Marinha e Costeira.</p> | <p>Insufficient coordination among those involved. Insufficiently clear mandates at national level.</p> | |

Other issues deserving to be mentioned:

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| Outreach | <p><u>MoBIDiC</u>³⁷ - Monitorização da Biodiversidade Intertidal e Divulgação Científica. This programme lead by CIMAR (Laboratory of Coastal Diversity) is focused in increasing</p> | | |
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³¹ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

³² <http://www.eurobiodiversa.org/>

³³ <http://www.biostrat.com/>

³⁴ www.vliz.be/marbena/

³⁵ www.epbrs.org

³⁶ www.ciimar.org/divmar

³⁷ http://www.ciimar.up.pt/biodiversidade/index_biocost.htm

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| | awareness involving schools in the collection of biodiversity data of Portuguese rocky shores. A database is available through internet and it constitutes an important repository for monitoring studies. | | |
| Papers ³⁸ | <p>Sousa-Pinto I, Arenas F, Vaselli S & Araújo R (2008). <u>Marine Biodiversity at Threat: research under the new scenarios</u> in CIMAR 2007: Executive Summary, Research Highlights & Publications. Ed. CIMAR Associate Laboratory, 2008. 120pg.</p> <p>Sousa-Pinto I, Pereira R, Abreu Helena & Villanueva R (2008). <u>Seaweed physiology and co-cultivation: a quest for sustainable aquaculture</u> in CIMAR 2007: Executive Summary, Research Highlights & Publications. Ed. CIMAR Associate Laboratory, 2008. 120pg.</p> | | |

³⁸ <http://www.cimar.org/cimar2008/pdf/Reports/CIMAR%202007%20Research%20Highlights.pdf>