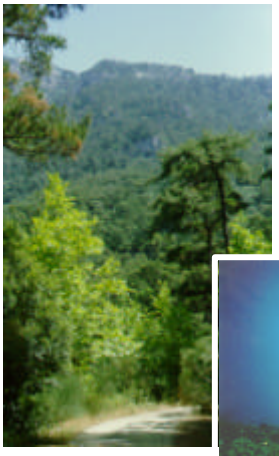
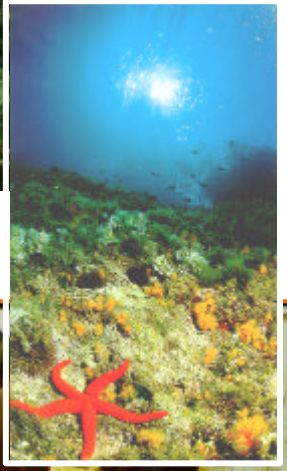
UNITED NATIONS ENVIRONMENT PROGRAMME
MEDITERRANEAN ACTION PLAN

INFORMATION NOTE ABOUT THE

STRATEGIC ACTION PLAN FOR THE CONSERVATION OF MARINE AND COASTAL BIODIVERSITY IN THE MEDITERRANEAN (SAPBIO)





Regional Activity Centre for Specially Protected Areas (RAC/SPA)
(Tunis, 2003)

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FOREWORD

This note was prepared by the Secretariat to briefly introduce the Strategic Action Plan for the Conservation of Marine and Coastal Biodiversity in the Mediterranean (SAPBIO). It includes long extracts taken from the SAP BIO and presents a summary of its main trends. SAP BIO, as reviewed and modified by the representatives from the Mediterranean countries at the 2nd Meeting of National Correspondents of the SAPBIO Project (Athens, May 2003) and the 6th Meeting of National Focal Points for SPAs (Marseilles, June 2003), is presented in Document UNEP(DEC)/MED WG.228/17.

The objectives and priority actions advocated by the SAP BIO to guarantee the conservation and sustainable use of marine and coastal biological diversity in the Mediterranean, are the result of the long process of assessment and consultation that took place during the years 2001 and 2002 in all the Mediterranean countries that are Parties to the Barcelona Convention. Most International and/or Regional Organisations concerned with the topics of SAPBIO contributed to this process.

In all, some 120 experts (including 98 national and international consultants) have made a contribution to this process, which has been run in several countries by national committees.

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PREFACE

About one hundred and fifty million people, i.e. one-third of the population in the countries bordering on the Mediterranean, live in the coastal area or on islands. Economic activity in these areas is constantly expanding. Also, the Mediterranean attracts about 200 million tourists every year, making this region the first tourist destination in the world. The result has been a continuous increase in pollution, with dreadful effects on fragile ecosystems, impacts on the residents' quality of life, and loss of biotopes and habitats. These impacts are considered as tragic for coastal and marine biodiversity. Moreover, the exploiting of Mediterranean marine and coastal natural resources is constantly growing, often leading to the dwindling of the exploited resources and, as well, damage to habitats and ecosystems.

And present and future trends in global phenomena – such as climate change, in particular – will probably further worsen the situation.

Moreover, knowledge of Mediterranean biodiversity cannot be seen as satisfactory. There are obvious gaps as regards the population/individual (genetic diversity) and species level and as regards habitats/communities. This lack of data does not make it easy to take the appropriate steps to guarantee the long-term conservation of the elements that make up the area's marine and coastal biodiversity.

Thus it is obvious that the complex threats that are hanging over Mediterranean marine and coastal biological diversity require a large range of responses through a number of public and private sectors, the implementing of national and regional actions, and the participation and commitment of all the countries and all the actors and users of the environments and their resources.

The Strategic Action Plan for the Conservation of Mediterranean Marine and Coastal Biological Diversity (SAPBIO) aims at responding to this major, complex need and thus helping rise to the challenge of reconciling the socio-economic development of the Mediterranean coastal area and the vital need to protect the area's biological diversity. It is thus in line with the implementing at Mediterranean level of the Convention on Biological Diversity and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

In its objectives, SAP BIO complies with the recommendations and approaches of the Johannesburg Earth Summit. Putting it into effect will allow the countries in the region to guarantee a high level of sustainability in the use they make of biological diversity, thus making good on the obligations they accepted under the pertinent international conventions. SAP BIO advocates concrete actions and recommends practices that aim at:

- reducing causes (lowering the stress), and modifying the conditions for preventing or mitigating impacts that are harmful for maintaining biodiversity
- promoting sector-based bioconservation-friendly policies, procedures and techniques, particularly as regards fishing, tourism, agriculture and forestry
- identify gaps, uncertainties and trends in scientific knowledge
- strengthen, update or improve the important legal structures
- train and improve the ability to elaborate and implement stratgies
- integrate SAP BIO actions within more general regional and national decision-making contexts
- establish and/or strengthen international and inter-agency cooperation
- carry out the common actions of the centres and the important programmes of the MAP concerning the wider aspects of maintaining biodiversity

- encourage and put into effect participation actions, programmes and campaigns aimed at informing the general public and increasing its awareness about maintaining biodiversity.

To monitor those actions that will be carried out as part of implementing the SAP BIO, indicators should be developed with a view to assessing the results and effectiveness of SAP BIO. The indicators should not only concern biological and ecological aspects but also cover socio-economic factors, settlement of conflicts about use, standard of living, etc.

For the enumerated actions to be effective, it is important to improve the governance systems for the sustainable use and the conservation of biodiversity in all the Mediterranean countries and Mediterranean systems. The following trends must be given consideration.

- Promoting public policies compatible with the protection of biodiversity
- Developing integrated management strategies, being aware of the importance of land/sea interactions, and of adequate management of territory
- Introducing the environment into the socio-economic issues for management strategies
- Promoting transboundary initiatives
- Promoting solidarity
- Improving and supporting activities and programmes of international conventions and initiatives

MEDITERRANEAN MARINE AND COASTAL BIODIVERSITY: Status, Threats and Trends

Overall, the rich biodiversity of the Mediterranean has not been studied enough; inventories are scarce, scientific research on it is very limited and uncoordinated (due to financial and administrative constraints) and public awareness of its functions and values should be increased. This combination of factors perhaps represents one of the key challenges in conserving the biodiversity of the region.

The availability of reliable data as well as the status of biodiversity differ between countries. Nevertheless there are several similarities and common situations as regards the species and habitats deserving particular care.

306 species belonging to Marine and terrestrial Mammals, Birds, Reptiles, Fishes, Crustaceans, Molluscs, Cnidarians, Sponges, Algae, sea Grasses and terrestrial flora and fauna appear on the list of threatened species. Notably in the list there are: the monk seal *Monachus monachus*, the sea turtles *Caretta caretta* and *Chelonia mydas*, the limpet *Patella ferruginea,* the sea grass *Posidonia oceanica* and the like.

A major feature of the Mediterranean coastal area is its exceptional diversity of habitats and landscapes.

Wetlands, steppes, river basins, rocky islands, sandy beaches, sand dunes, caves and underwater grottos, coralligenous assemblages, maerl beds, sea grass meadows, *Cystoseira* communities, vermetid reefs, marine lakes, underground water, vertical cliffs/islands, cliffs and wadis are among the most common habitats/assemblages deserving protection.

THE PRINCIPAL PROBLEMS CONCERNING MARINE AND COASTAL BIODIVERSITY

The main issues of primary importance within the marine and coastal biodiversity context are:

- Simplification of coastal and marine community
- Dwindling population of sensitive species
- Decline of endangered species
- Decreasing population of fishery target species
- Habitat destruction, fragmentation, erosion or disturbance
- Deformation of natural dynamics of biodiversity
- Biological invasion.

In addition, other issues of a general nature and with indirect impact were identified:

- gaps in knowledge, (scientific, technical, management)
- inadequate level of public and authority awareness.

- inadequacy of several existing systems for the governance of biodiversity conservation, in particular:
    - weakness in institutional and human capacity for implementing, monitoring, assessing and updating
    - insufficient participation, involvement of the general public and stakeholders
    - lack of incentives
    - gaps and conflicts in legislation

MAIN THREATS AFFECTING MEDITERRANEAN MARINE AND COASTAL BIODIVERSITY

The nature and extent of the threats hanging over the Mediterranean marine and coastal biodiversity vary from one part of the Mediterranean to another, sometimes from the country to the next. Many of these threats are linked to pollution and to the exploiting of the region's natural resources. As well as these Threats, that are dealt with in detail below, Mediterranean biological diversity is increasingly subject to the effects of global phenomena, such as the effects of the global warming, whose impacts could be felt at the level of species and ecosystem balance. In certain cases, such global phenomena could worsen the impact of other local or regional threats.

Pollution

Pollution of marine and coastal areas is a recurrently cited problem threatening biodiversity. Most of the effects of pollution for Mediterranean biodiversity are treated in the "Strategic Action Plan to Address Pollution from Land-based Activities (SAP MED)", implemented by UNEP MAP/MEDPOL.

The excessive development of certain species and the decline in seawater quality result in the specific richness being reduced.

Pollution of the coastal zone and its wetlands by solid and liquid domestic and industrial by-products is reported as a major problem by many Mediterranean countries, as the lack of appropriate treatment facilities is very common. In particular, chemical and petrochemical industries concentrated around major coastal cities are a major source of pollution. To this is now added agricultural pollution from run-off containing high concentrations of fertilisers, pesticides and other agrochemicals. Their combined impact on the health of habitats and on particular species is often quite high. It should be noted, however, that this is not an irreversible effect, and that after the removal of the sources of pollution biodiversity can be re-established to a considerable degree.

The main general consequence of these threats for marine biodiversity are, namely:

- Occurrence of eutrophication events, producing
- hypoxia/anoxia of water and sediments, algal blooms and,
- eventually, red tides
- Decreased species richness of benthic assemblages,
- due to the selection of a few opportunistic species
- Reduced density and biomass of benthic species
- Alteration (and even destruction) of seagrass beds, through direct and indirect effects

- Accumulation of persistent substances (heavy metals, organic pollutants) in marine organisms, producing deformations in larval, juvenile and adult individuals of marine species, and causing an increase in mortality.

Certain sites are known as pollution hotspots. This map shows the distribution of known Mediterranean eutrophication hotspots

Impact of exploitation of natural resources

Marine fishing

Negative impacts of inappropriate fishing activities on marine biodiversity are recorded in most of the Mediterranean countries, although the countries have approached this question differently.

The important socio-economic implications of fishery activity makes tacking this issue particularly delicate. The problem of fishing affecting marine biodiversity is likely to increase due to recent improvements in fishing and navigation technology. This situation is leading to the risk that the fishing effort is maintained despite the eventual reduction of the fishing fleet.

In the Mediterranean, the fishing fleet is assessed at some 140,000 units carrying on fishing that is essentially coastal. Offshore Fishing (outside the country's territorial waters) targets a smaller number of species.

The impacts of fishing activity on benthic and pelagic species and are:

- Direct over-exploitation of commercial species
- Indirect ecosystem effects of fishing

?? *Direct effects of over-fishing on the target species*

A feature of Mediterranean fisheries is their high level of exploitation, that often places the resources in a state of over-exploitation, and in the best of cases optimum exploitation, particularly in the three European countries which total 60% of fisheries production (Spain, France and Italy). Pressure on resources is exacerbated by the ever-growing demand for sea products, the Mediterranean hardly supplying one-third of the demand from the countries bordering on it.

?? *Indirect effects of fishing*

Among thesis effects, one can mentions those affecting populations of both target and non commercial species, such as:

- Disturbance or destruction of habitats (particularly *Posidonia oceanica* meadows and maerl bottoms).
- effect on populations (either commercial or not), due to by-catching, discarding, ghost fishing, etc.

- effect on other non-commercial (often endangered) species (chondrichthyans, sea turtles, sea birds, marine mammals…), incidentally captured in the fishing engines
- increased fishing on target, less valuable resources at lower trophic levels, due to decreases in the abundance of valuable species high in the food chain.

Many threatened species, such as chondrichthyans, sea turtles, sea birds, marine mammals, etc., experience the impact of fishing although they themselves are not the direct targets of fishing gear.

Uncontrolled recreational fishing activities

The increase of coastal tourism in the Mediterranean region is accompanied by an enormous increment in recreational sport fishing, associated to gear such as angling, handline, spearing, longline, rod-and-reel, etc. The main problem with leisure fishing is the total lack of rigorous checks on the composition, size and abundance of catch. Moreover, a real clash of use exists with commercial fishermen, since sports fishers have started to sell their catch illegally.

Impact on wetland natural resources

Wetland resources are useful for the populations living around them for food, fibres and biomass. In some cases, though, the over exploitation of these resources leads to their collapse. The main problems can be listed as follows:

- Fishing in coastal lakes and lagoons, where the use of finer nets and other methods can lead to the dramatic decrease of catch
- Excessive hunting of wetland and coastal birds
- Overgrazing of coastal areas
- Uncontrolled and excessive sand extraction from beaches and river beds
- Filling wetlands to obtain building or farm areas.

Uncontrolled expanding urbanization and construction of infrastructure

Large parts of the coastal zone are now being rapidly converted from a natural state to an urbanised one, through urban expansion, construction of economic/recreational and other facilities, and technical infrastructure, such as harbours airports and road networks. The result is the total destruction, or, at best, the fragmentation of precious habitats.

Massive urbanisation and badly thought out infrastructure modify the dynamics of the coastal sediment and thus destroy beaches and large stretches of precious coastal habitats, such as *Posidonia oceanica* meadows and maerl bottoms.

Invasive species

Some 400 alien species are recorded in the Mediterranean. These are species directly introduced by man (accidentally or on purpose), or whose arrival in the Mediterranean has been made possible by human agency. Some of these species are invasive, their potential effects are:

- Competition or predation, and subsequent replacement of native species
- Hybridising with native species
- Introduction of pathogens
- Loss of habitats.

Trade in endangered species

Several endangered or threatened populations are declining because they are taken for commercial purposes (sponges, sharks, turtles, sea horses, shells, etc.). Although many Mediterranean countries are Parties to CITES, the international trade in endangered species is widespread in several Mediterranean countries; such is the case of turtles, sea horses, used as 'souvenirs' in many countries, or even, in one-off cases, sent to the Far East because of their pretended beneficial properties in some traditional medicines.

Changes in land use

Generally speaking, Mediterranean countries have undergone drastic land use changes, from natural to bio-cultural landscapes (linked to traditional activities), and from there to urban environments. More recently, changes in agricultural use (namely from dry to irrigated practices) cause even greater threats for Mediterranean biodiversity.

Uncontrolled recreational activities (other than fishing)

About 200 m. tourists per year visit the Mediterranean region. They create an important development of recreational activities, mainly in coastal areas and shallow water (in particular during the summer).

The growing success of nature-watching tourism is a potential source of impact.

Scarcity of fresh water

Population growth results in an increasing demand for fresh water. This is exacerbated by tourist consumption, which is usually much higher than the corresponding levels for local inhabitants. Fresh water is necessary for biodiversity, particularly for wetland-related habitats and species. Wetlands in turn, when their functions are intact, play a major role in the water cycle and their degradation contributes to a water shortage, thus establishing a classic vicious circle. The problem is compounded by the pollution of freshwater sources through wastewater and agricultural run-off. Moreover the scarcity of fresh water will probably increase in some areas due to global change.

Inappropriate aquaculture practices

Aquaculture production in the Mediterranean has undergone a drastic increase in recent years. The impacts of inappropriate aquaculture can come from several sources:

- Waste of food non-consumed by fish (estimated as 10-30% of total, depending on the feeding method)
- Products of fish metabolism (faeces, pseudo-faeces, and excretions)
- Chemical treatments used to avoid the accumulation of fouling organisms on nets
- Chemical products to treat fish diseases and parasites.

Regional aquaculture production went up from 78-180 tons in 1984 to 248-460 tons in 1996.

The effects of fish farms in the sea can be multiple:

- Nutrient enrichment of the water column surrounding the aquaculture installation, causing the increase of primary production, and also the attraction of pelagic, shoaling fish species under and near fish farms
- Degradation of the bottom surrounding the farms, and, specially, increase in the proportion of fine fractions of sediments, deeply altering soft bottom and seagrass communities
- Chemical pollution and bio-accumulation of anti-fouling and pharmacological products
- “Genetic pollution” of wild populations with individuals of reared species escaping from the cages (although no studies have been done on this particular subject)
- Visual degradation of coastal landscapes
- In some cases, socio-economic effects derived from
- lack of management studies
- Invasion of natural zones by alien species (see above).

Special attention should be paid to the growing Tuna-fattening activity in the Mediterranean. As well as the effect this has on the wild tuna population, this activity leads to the degradation of sensitive habitats (*Posidonia meadows*, etc.) and an increase in the rate of nutrients in seawater.

MANAGEMENT OF MEDITERRANEAN MARINE AND COASTAL BIODIVERSITY

An analysis at national and regional level of the policies and methods applied to the management of Mediterranean biological diversity reveals certain shortcomings that require the implementing of suitable management strategies for this heritage.

In this context, the main conclusions are:

- There is an urgent need for the Mediterranean Region to apply integrated management of the coastal zone

- There is growing evidence of the need for a much deeper understanding of the socio-economic aspects of bio-conservation, but so far little has been achieved in that respect. Only sporadic attempts are being or have been made concerning the identification and application of economic instruments to support biodiversity conservation.

- Unclear jurisdictions and overlapping responsibilities between public services are often recognised as a serious hindrance to sustainable management of biodiversity.

- In all Mediterranean states, the role of non-governmental organisations (NGOs), which represent civil society, is growing. They are becoming a noticeable and worthy stakeholder in issues of biodiversity and must be taken seriously into account at both the practical and the strategic level.

- The Mediterranean states have a high degree of participation in international conventions concerned with biodiversity. All of them participate in the Barcelona Convention and the Convention on Wetlands, and many of them in the Convention on Biological Diversity, as well as the Bern and Bonn Conventions, and CITES. However, their degree of substantial involvement in the work of these conventions is not equal.

- The more affluent countries of the north of the Mediterranean basin maintain bilateral co-operation agreements with those of the south and east. Such agreements often include both financial and technical aid for the conservation of biodiversity. They provide very valuable (albeit limited) resources. There is a need, however, to have these resources increased considerably in the coming years, so that they become commensurate with the need and to have them targeted on capacity-building in the developing countries of the region. It is necessary that recipient countries request funding for biodiversity-related projects, in addition and as support to the development aid.

- Although, recently, many Mediterranean states have developed policies for the conservation and wise management of the coastal areas and of wetlands, in many Mediterranean countries, legislation relative to coastal and wetland biodiversity is often weak or out of date, and needs modernisation and alignment. Often, however, the problem is not the lack of appropriate legislation, but its low degree of implementation and enforcement. This is very evident in the increase of illegal construction along the Mediterranean coasts, in spite of legislation that strictly forbids it.

The main lines of Mediterranean strategies to conserve marine and coastal biological diversity are based on the protected areas and the management of commercial fishing.

Protected areas

There are 156 Marine and Coastal Protected Areas in the Mediterranean under the SPA Protocol, 52 of which cover marine areas. Among the signatories to the Protocol, only Italy has specific legislation for establishing marine protected areas. Most of the other countries have adopted legislative texts permitting the establishment of such areas, without detailed rules concerning regulation and management. The implementation of NATURA 2000 and the Bern Convention in coastal and marine areas will help to strengthen protection and management.

The geographical distribution of Marine Protected Areas around the Mediterranean clearly lacks balance.

In order to develop a spirit of marine and coastal environment protection in the Mediterranean region, the SPA Protocol defined a new concept, that of "Specially Protected Area of Mediterranean Importance" (SPAMI), and provided for drawing up a "SPAMI List". The Contracting Parties to the Barcelona Convention, at their last Meeting (Monaco, 14-17 November 2001) approved the inclusion of the first twelve protected areas on the list[1].

Problems affecting the conservation of biodiversity through the use of Protected Areas

Although the situation differs from one country to another, the following main issues concern many Mediterranean countries:

- Insufficient legal system, lack of adequate legislation
- Confusion of competency, or fragmentation of responsibility (leading to problems of implementation of the existing laws)
- Lack of coordination between administrations, competencies overlap
- Interference with other human activities occurring in the coastal zone, mainly tourism
- Low or no participation of stakeholders and other agents in the decision-making process
- Poor effort to improve public awareness on marine conservation issues
- Lack of effective enforcement measures in some cases
- Lack of effective scientific monitoring

[1] The Isla de Alboran (Spain), the sea bottom of the Levante de Almeria (Spain), Cabo de Gata – Nijar (Spain), Mar Menor and the eastern coast of Murcia (Spain), Cap de Creus (Spain), the Medes Islands (Spain), the Columbretes Islands (Spain), Port-Cros (France), the Kneiss Islands (Tunisia), La Galite (Tunisia), Zembra and Zembretta (Tunisia), the French-Italian-Monacan Sanctuary.

- Lack of sufficient economic resources to achieve the protection measures, so that a number of Protected areas receive only nominal management and protection
- Problems of mismanagement and deterioration caused by the limited experience of the people administrating the Protected areas
- Lack of effective conservation measures to protect particular species (monk seal, sea turtles, cetaceans, etc.) and/or communities (e.g. seagrass meadows)
- Need to set up a network of Protected areas, and therefore define of goals, mechanisms and management organization for such a network
- Need for integrated coastal zone planning and management.

Other identifiable general problems that affect the selection, installation, management and evaluation of Mediterranean Protected areas are the following:

- Need to clearly establish the specific goals of each Protected area
- Lack of scientific basis for the selection (location, habitats included, depth range, etc.) and design (size, shape, number, proportion of total surface protected, etc.) of Protected areas
- Need for appropriate monitoring and evaluation of the effectiveness of Protected areas, based on sound sampling designs (e.g. BACIP, beyond-BACI…)
- Lack of empirical evidence for potentially complex effects of Protected areas, e.g. spillover, indirect effect on ecosystems ("cascade" effects), effects on larval replenishment of commercially and/or ecologically important species, genetic effects, socio-economic results, etc.
- Need to ascertain the relationship of Protected areas with other management tools.

The management of Mediterranean commercial fishing

In most of the countries, sea fisheries have not been sustainably developed; disturbing effects have been noticed in many areas. This being so, there has recently been a general recognition of the need to lighten the pressure of fishing on the resource by reducing the effort and improving the quality of fishing gear and its use in terms of time and place. Fishing practices themselves should also be improved by developing fishing that is as rational as possible.

So far, the failure of traditional management measures (quotas, restrictions on size, controlling the effort, period closure…) to halt the over-exploiting of stocks and degrading of habitats must be recognised.

The main problems linked to the management of fishing resources are:

- the multispecific nature of fisheries in the Mediterranean
- the frequent seasonal changes in the gear used by fishing units
- the difficulty of correctly enhancing existing relations, illustrated by the frequent appearance of illegal fishing practices (e.g. trawling over phanerogam meadows, catch of small-sized individuals…)
- in certain cases, the lack of suitable legislation for managing fisheries
- technological problems linked to the kind of fishing gear commonly used, expressed in most cases by a very low selectivity
- the above-mentioned problem of rejecting or discarding certain species fished
- in many countries, the difficulty of drawing up suitable statistics on catch, due to the great number and unsupervised nature of the landing points
- the fishermen's lack of awareness of the importance of maintaining biodiversity

- the fishing sector's lack of economic perspective to envisage integrated, coordinated management, mainly due to the low level of organisation of the fishermen's associations, especially on a local scale. Nor does the rigid, hierarchic structure of these fishermen's associations make things any easier.

Other problems can be identified:

- The rapid disappearance of fishermen's traditional knowledge of the biology of target species, the spatial distribution of key habitats, and the use of older fishing gear
- The lack of a series that goes back over a long period to cover landings in many Mediterranean sites (such data would enable the 'normal' variability of exploited populations to be quantified)
- The difficulty scientists have in building dynamic economic and biological models due to (1) the lack of the appropriate basic knowledge, (2) the uncertain nature of the forecasts and predictive models themselves, and (3) the intrinsic uncertainty of ecosystems.
- Important weaknesses in the coordinating mechanisms of the various concerned parties as regards integrated management outlines (considering joint management and also joint responsibility) as part of an ecosystem approach.

The principles of the Code of Conduct for Responsible Fishing, recently adopted by the FAO, are accepted by the Mediterranean countries. But strengthening this Code requires real political will. Practical indicators and measures must still be elaborated and put into effect.

PRIORITIES AND ACTIONS

The priority actions presented hereinafter proceed from the inventorying of needs at national and regional level, particularly through analysing the situation at regional level and devising National action plans. They were identified according to the following criteria:

1) They are necessary, relevant, significant and/or pertinent
2) They are rationally achievable, being realistic from a financial point of view
3) Equity and sustainability of adopted measures are ensured
4) Legal implications do not conflict with existing international and/or national legislation
5) They include a sufficient level of flexibility in their implementation
6) They receive a sufficient level of acceptability at regional and national level
7) Biological and socio-economic consequences of their implementation are reasonably predictable (considering the precautionary principle).

The priorities actions recommended hereinafter, can be classified in the following 7 categories:

I. Inventorying, mapping and monitoring Mediterranean coastal and marine biodiversity
II. Conservation of sensitive habitats, species and sites
III. Assessing and mitigating the impact of threats to biodiversity
IV. Developing research to complete knowledge and filling in gaps on biodiversity
V. Capacity-building to ensure coordination and technical support
VI. Information and participation
VII. Awareness raising.

For each category, the time frame[2], the implementability[3] and the specific targets were identified, also taking into account the WSSD[4] objectives. Almost actions are to be implemented at national level. Regional actions will support and add synergy to the priority actions selected at national level.

[2] TF: Short Term (ST), Mid Term (MT) and Long Term (LT)
[3] Imp: Implementation Easy (A), Difficult (C)
[4] World Summit on Sustainable Development, " Plan of Implementation " - Johannesburg, September 2002.

I. INVENTORYING, MAPPING AND MONITORING OF MEDITERRANEAN COASTAL AND MARINE BIODIVERSITY

General objective

"Contribute to achieving the WSSD targets concerning establishing by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments"(Extract from Paragraph 34b, Plan of Implementation of the World Summit on Sustainable Development – Johannesburg, September 2002)

Specific targets

- GIS-based mapping of sensitive habitats by 2008 (relevant objective/s: 1a)
- Mediterranean Checklists of species by 2006 (1b,d)
- Standard monitoring protocols for socio-economic impacts, global trade, endangered species, effectiveness of protected areas by 2004 (2a; 3a; 4a; 5a)
- SAP BIO indicators by 2006 (6 a,b,c,d,e)

Activity (Priority actions)	Objective	Specific action	TF	Imp.
1) Make a complete and integrated inventory (by sub-region) of Mediterranean coastal, wetland, and marine sensitive habitats	a) Description and GIS-based mapping of the spatial distribution of the sensitive habitats:	✍ Increase availability of GIS technology ✍ Enhance national capabilities and support national and sub-national programmes to map sensitive habitats ✍ Undertake international Mediterranean campaigns with oceanographic boats of cartography of sensitive habitats ✍ Facilitate exchange of and access to maps by scientists and managers	MT	B
	b) Complete checklist of species associated with each sensitive habitat	✍ Form regional workgroups of specialists by taxon and/or habitat ✍ Set up regional programmes to make such checklists by sub-region and/or country (cf. Target d below)	MT	B
	c) Long-term routine monitoring programmes, in order to define temporal variability of abundance, biomass and other assemblage variables within sensitive habitats	✍ Convene thematic workshops by types of habitat, to elaborate standardised regional monitoring programmes ✍ Support monitoring programmes at national level, to be implemented by national workgroups in selected sites by types of habitat (at undisturbed sites, e.g. marine and coastal protected areas)	ST	A
	d) Elaborate national checklists for marine and coastal species for all the Mediterranean countries	✍ Form national workgroups of specialists by taxon and/or habitat (assisted by regional workgroups when necessary) ✍ Set up national programmes to undertake national checklists	ST	A
2) Establish of a monitoring system of endangered and threatened species	a) Implement a monitoring system for endangered species at regional level	✍ Establish standard adequate monitoring techniques and methodsof endangered and threatened species ✍ Determine sampling protocols (spatial and temporal allocation of sampling, number of samples, etc.) ✍ Implement standard monitoring protocols	ST	A
	b) Establish and update the health and risk status of endangered populations	✍ List specific threats affecting each endangered species ✍ Model population dynamics in order to forecast different scenarios concerning each species ✍ Revise periodically the conservation status of each species	MT	B
3) Promote the adequate monitoring and survey of the effectiveness of marine and coastal protected areas	a) Implement sound scientifically-based monitoring programmes on the effectiveness of marine and coastal protected areas	✍ Define planned objectives of existing protected areas to be monitored taking into account the methodology of the Afrodite project, already ongoing on several MPAs ✍ Elaborate a regional monitoring booklet defining sampling and experimental principles, as well as standardised sampling protocols established to acquire useful, comparable data ✍ Implement standardised sampling programmes in selected protected areas spanning a representative set at regional level (taking into account the methodology of the Afrodite project) ✍ Undertake a comparative analysis of protected areas results at regional level	ST	A
	b) Improve methods of management planning, implementation and monitoring	✍ Evaluate, at regional level, effectiveness of management measures in relation to planned objectives ✍ Analysis of the applicability of new management measures ✍ Refine management measures	ST	A
4) Identify, develop, and validate adequate biological and socio-economic indicators to assess the ecological health of sensitive habitats and species, and to evaluate the effectiveness of management measures	a) Elaborate a regional strategy on SAP BIO indicators	✍ Convene a regional workshop on SAP BIO indicators ✍ Form a working group in charge of elaborating and validating a set of SAP BIO indicators	ST	A
	b) Elaborate a list of useful SAP BIO indicators	✍ Define objectives of the set of indicators to be used ✍ Elaborate a catalogue of indicators (taking into account the indicators proposed by other international institutions) ✍ Specify the methodological constraints linked to each indicator ✍ Select useful indicators	ST	A
	c) Existing and new data collected to construct selected SAP BIO indicators	✍ Evaluate the availability of existing data ✍ Elaborate standardised protocols to collect new data ✍ Decide periodicity and implementation calendar of selected indicators ✍ Undertake sampling programmes to collect new data where necessary	ST	B
	d) Construct SAP BIO indicator set starting from the collected data	✍ Gather regional data ✍ Construct indicators ✍ Publish the results at regional level	MT	B
	e) Validate selected SAP BIO indicators	✍ Establish the states of SAP BIO implementation ✍ Evaluate the usefulness, accuracy and precision of selected indicators ✍ Possibly, refine list of SAP BIO indicators	MT	B

II. CONSERVATION OF SENSITIVE HABITATS, SPECIES AND SITES

General objective

Contribute to achieving the WSSD targets concerning the establishing of Marine Protected Areas consistent with international law and based on scientific information, representative networks, by 2012, and time/area closures for the protection of nursery grounds and periods, proper coastal land use (Extract from Paragraph 31c Plan of Implementation" of the World Summit on Sustainable Development - 4 September 2002, Johannesburg)

Specific targets

- Effective protection of endangered species by 2012 (relevant objectives 7a, b; 8d)
- Increase (50%) by 2012 the surface area covered by MPAs (10 a, b, c, f)
- Attain the protection of 20 % of the coast as marine fishery reserves by 2012 (10 e)
- Set up a representative Mediterranean network of marine and coastal protected areas by 2012 (11 a, b)

Activity (Priority actions)	Objective	Specific action	TF	Imp.
5) Update, coordinate and enforce legislation to conserve biodiversity	a) Fill in existing gaps in national legislation about the protection of such habitats, species and areas	- Ensure that measures adopted within the framework of regional conventions, arrangements or organizations to which countries are party are incorporated in national legislations - Clarify at national level competencies regarding the management of littoral areas	MT	A
	b) Ensure the completion, enforcement and implementation of existing and updated legislation	- Assess the general level of compliance with current legislation in the region - Develop guidelines on root cause analysis of non-compliance that would help to identify the real problems in various non-compliance scenarios - Set up of a specific national police body, for the protection of biodiversity in coastal areas (any other police task being excluded)	LT	C
6) Develop actions to conserve threatened and endangered (coastal and marine) Mediterranean species	a) Coordinate the implementation of National Action Plans (NAPs) for threatened and endangered species elaborated within the SAP BIO Project	- Organize subregional workshops - Prepare common guidelines, documents to assist countries in the implementation of the NAPs - During the implemantation phase assure the flow of information among the NAPs - Refine NAPs to protect threatened and endangered species	ST	A
	a) Increase knowledge on these species	(cf. priority #4.a,4.b)		
	b) Establish a monitoring system for these species	(cf. priority #4)		
	c) Harmonise, update, implement and enforce adequate legislation	(cf. priority #7)		
	d) Habitats on which selected species depend protected	(cf. priority #10, target d)		
7) Protect marine and coastal sites of particular interest	a) Develop and coordinate protection actions for priority sites and areas identified by National Reports	- Campaign of collection of data using the Standard Entry Data Form in identified site - Prepare detailed Action Plans to protect identified sites - Coordinate protection actions at regional level (cf. Priority #11, Target b below)		
8) Declare and develop new coastal and marine protected areas including in the high seas	a) Identify of new areas deserving protection measures in the south and eastern Mediterranean	- Identify key sites important for harbouring representative, well-conserved marine and coastal habitats (links with cf.priority # 1) further to their identification as priority sites by National Reports (cf. priority # 9) - Fill in the SDF for each identified area	ST	A
	b) Set up of new protected marine and coastal areas in the south and eastern Mediterranean	- Countries declare new M&CPA - Provide the new M&CPA with all the necessary tools to assure their functioning - Establish of a sub-regional network of south and eastern Mediterranean representative habitats (cf. Target 11.b below)	MT	C
	c) Increase the number of C&MPAs or reserves to conserve sensitive, highly endangered species	- Define habitat features of selected endangered species - Define the minimum area needed to fully protect highly endangered species - Select areas to protect these species - Prepare detailed Action Plans for these areas (declaration of MPA or implementation of other measures of protection)	LT	C
	d) **Identify and protect of new areas offshore (including the high seas) deserving protection measures**	- Identify key sites important for harbouring representative, deep marine habitats and or important pelagic ecosystem (links with cf. priority # 1) - The involved countries declare and set up offshore protected areas	MT	C
9) Develop existing Marine and Coastal Protected Areas	**a) Enhance the management of existing Protected Areas**	- Dedicate resources to funding the management of existing Protected Areas - Convene workshops of C&MPA managers to harmonise and improve management issues - Integrate specific protection measures into large-scale networks (cf. Target b below)	MT	B
	b) Establish and support protected area networks	- Integrate specific protection measures at particular locations into wider management plans, as well as into large-scale networks of Coastal and Marine Protected Areas - Coordination and harmonisation between management plans and structures of particular existing Protected Areas - Undertake specific research, monitoring and assessment under a networking scheme (cf. priority #5)	MT	B

III. ASSESSING AND MITIGATING THE IMPACT OF THREATS ON BIODIVERSITY

General objective

Contribute to achieving the WSSD targets concerning significant reduction by 2010in the current rate of loss of biological diversity (Extract from Paragraph 42 Plan of Implementation of the World Summit on Sustainable Development - 4 September 2003 – Johannesburg)

Specific targets

- Updated assessment of the potential impact of threats on Mediterranean marine and coastal biodiversity by 2008 (12a, b; 13a)
- Maintain or restore fishery stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015[20] (21 a, b, c, d, e, f ,g, h, i)
- Urgently develop and implement national and plans of action, to put into effect the FAO international plans of action, in particular the international plan of action for the management of fishing capacity by 2005 and the international plan of action to prevent, deter and eliminate illegal, unreported and unregulated fishing by 2004 (relevant objective/s: 21f). Establish effective monitoring, reporting and enforcement, and control of fishing vessels, including by flag states, to further the international plan of action to prevent, deter and eliminate illegal, unreported and unregulated fishing[20] (21a, c, e, f, h, i)
- Control and regulate the urban development of coastal area, land use planning and aquaculture practices within a wider management plan by 2010 (16a; 17a; 20a, b, c)
- Legal regulation of recreational activities by 2008 (18 b)
- Reinforce control and mitigation of the introduction and spread of alien species by 2006 (15 a, b, c)

Activity (Priority actions)	Objective	Specific action	TF	Imp.
10) Monitor of global trade and economic policies and trends from a Mediterranean perspective, to analyse their scope and probable effects on biodiversity	b) Implement monitoring systems for consequences of global trade and economic policies	- Establish monitoring protocols and standards, in order to evaluate the effects of international trade on Mediterranean biodiversity - Implement standard monitoring protocols - Propose recommendations at regional level to undertake specific actions to counter trade effects on biodiversity and sustainable development - Coordinate monitoring and action plans at regional and international level (e.g. UNCTAD/UNDP, ICTSD, etc.)	ST	A
11) Establish a regional monitoring programme following up the socio-economic impact of changes in biodiversity	c) Implement monitoring systems for socio-economic impacts of changes in biodiversity	- Establish monitoring protocols and standards, in order to evaluate the socio-economic effects of changes in biodiversity - Implement standard monitoring protocols	ST	A
12) Assess the potential impact of climate change and rise in sea level on Mediterranean coastal and marine biodiversity	a) Inventory and monitor of biodiversity elements and/or areas likely to be impacted by climate change	- Geographical identification of priority areas likely to be threatened by climate change and rise in sea level - Establish a monitoring network to describe long-term change	ST	A
	b) Acquire the necessary knowledge to model and forecast likely effects of climate change	- Ascertain the relationship between the Mediterranean Sea and the global oceanatmosphere and its response to local forcing - Monitoring long-term variability of the thermo-haline circulation, biogeochemical content and transport in the whole Mediterranean Sea - Quantify and accurately model regional hydrological cycles (evaporation, precipitation, river run-off, groundwater) - Fill in geographical gaps on key processes in the Mediterranean Sea	MT	B
13) Assess the potential impact of threats on Mediterranean coastal and marine biodiversity	a) Inventory of biodiversity elements and/or areas likely to be impacted by threats on biodiversity	- Geographical identification of priority areas likely to be affected by threats on biodiversity - Establish a monitoring network to describe long-term change	MT	B
14) Mitigate the direct impact of international trade in endangered species	a) Improve research and control on the impact of harvesting wild species	- Improve monitoring of international trade, focusing especially on species not included in CITES - Update CITES lists with Mediterranean threatened and endangered species not yet included - Set up a specific national police body, for the protection of biodiversity (cf. priority # 7b)	ST [1]LT	A [1] C
	b) Adopt market and awareness measures targeting stakeholders in the chain of catching and trade in alien species (from harvesters to consumers)	- Create an eco-label to certify that wildlife products have been legally harvested and exported - Make consumers and potential purchasers sensitive to international wildlife-trade issues, through adequate awareness measures	ST	B
15) Control and mitigate the introduction and spread of alien and invasive species	a) Develop appropriate institutional measures to fight against particular sources of alien species	- Regional project to reduce transfer of aliens via aquaculture and aquaria practices (cf. Priority #20) - Regional project to reduce transfer of alien species via ships' ballast water and sediments and hull fouling - Regional project to reduce transfer of alien species via plastic debris - Regional project to reduce transfer of alien species via fishing practices	ST	B
	b) Implement a regional coordination network to mitigate introduction and spread of alien species	- Elaborate and adopt at regional level guidelines intended to assist the relevant national authorities - Coordinate the actions taken by neighbouring states to prevent and control the introduction of non-indigenous species - Support cooperation at international level	ST	B

	c) Fill in existing gaps in knowledge about alien species	- Carry out research work, data collection, monitoring, etc. aimed at improving the available knowledge - Coordinate the actions that are necessary for the regular provision of supplementary information for the national and Mediterranean-wide reference lists of non-indigenous species - Support information exchange and concerted action at regional level - Encourage the implementation of scientifically-backed regionally-harmonised measures of prevention and control	ST	B
16) Control and mitigate coastal urbanization and construction of coastal infrastructure	a) Insert urban development of coastal areas into wider integrated management plans	- Carry out evaluations of destination sites' carrying capacity and take the necessary steps to ensure that the offer is limited to the carrying capacities thus defined - Strengthen or establish legislative tools, regulations and property management to control tourist urbanisation and protect sensitive species, habitats and sites - In particular, control the proliferation of marinas and sport harbours - Prohibit the construction of artificial beaches - Implement programmes enabling the rehabilitation of mature destination areas favouring the environment - Implement mechanisms enabling (whenever possible) a financial contribution from the tourist sector for protecting and managing natural and cultural sites	MT	C
17) Control and mitigate the effect of changes in land use	a) Promote the integration of land used planning into wider integrated management plans.	- Carry out evaluations of carrying capacity of the littoral zone concerning land use, and take the necessary steps that the offer is limited to the carrying capacities thus defined - Define (at national and sub-regional level) interference, incompatibility and synergy between different land uses in the littoral zone - Undertake the zoning of littoral areas at sub-national level - Define and promote adequate, environmentally-friendly agri-cultural practices - Define and promote adequate, environmentally-friendly water management practices - Define and promote adequate, environmentally-friendly reforestation practices - Regulate and control mining activities under an integrated management scheme	MT	C
18) Promote eco- and soft tourism, control and mitigate impact of recreational activities	a) Increase sustainable tourism, including non-consumptive and eco-tourism taking into account the spirit of the International Year of Eco-tourism 2002, the United Nations Year for Cultural Heritage in 2002, the World Eco-tourism Summit 2002 and its Quebec Declaration, and the Global Code of Ethics for Tourism as adopted by the World Tourism Organization[5]	- Promote eco-labelling and other quality environmental procedures (e.g. certification, charters, etc.) at regional level - Support private eco-tourism initiatives - Awareness programmes among tour operators, tourist businesses (travels, hotels, sport facilities, etc.) and public sector administrations on the benefits of environmentally-friendly tourist practices - Avoid ghetto-like, high-standing tourist facilities unconnected with local conditions - Promote respect for local architecture and the historical heritage - Facilitate the exchange of tourists and local populations and cultures - Minimize waste production, and energy and water consumption by tourist facilities - Promote the use of public transport - Develop all means that may lead to spreading the tourist season over the entire year - Develop international, regional cooperation	LT	B
	b) Control and mitigate the impact of recreational activities on coastal and marine Mediterranean biodiversity	- Make an analysis and collect information on the most significant environmental impacts of recreational activities and tourism - Geographical identification of priority areas likely to be affected by recreational activities - Regulation and enforcement of recreational practices, in particular of high-impacting activities (e.g. 4x4, diving, motor navigation, hunting, recreational fishing, sea-watching, etc.) - Management and regulation of access and use of beaches by the public as well as their use by professionals, in accordance with environmental factors - Study and promote the use of eco-taxes for the general public visiting protected areas, as well as other economic and financial tools to protect biodiversity - Develop the alternative use of coastal and marine areas, based on the utilization of natural landscapes	- MT	C
19) Assess and elaborate of strategies to prevent the environmental impact of sources of pollution	a) Assess and prevent the impact of desalination techniques	- Establish a regional programme to quantify and characterize the environmental impact of coastal desalination plants - Define and evaluate technical measures to minimize the impact of the desalination process (e.g. construction of pipelines for disposal of reject flow, ameliorate desalination technology, etc.) - Promote clean-energy desalination plants (e.g. solar); avoid desalination projects to mask environmentally-unfriendly energy projects (e.g. power plants, incinerators of toxic waste, etc.) - Insert the planning of new desalination plants into wider integrated water and coastal management plans	- MT	C

[5] From Paragraph 41 Plan of Implementation of the World Summit on Sustainable Development - 4 September 2002 – Johannesburg.

	b)	Control the proliferation of floating plastic objects and debris	- Establish a regional programme to quantify plastic proliferation in the Mediterranean - Geographical identification of priority areas likely to be affected by the proliferation of plastic debris in the sea - Support international agreements about the dumping of plastics in the sea - Enhance recuperation and recycling of plastics - Promote the research and application of technology to produce photo- and bio-degradable plastics - Promote and support beach-cleaning initiatives - Establish awareness campaigns (oriented to users and the general public) about the use and waste of plastic debris in the sea	LT	C
	c)	Achieve non-pollutant marine transport and navigation techniques; pay special attention to noise and hydrocarbon pollution	- Enhance and support activities under international agreements on environmental impacts of maritime casualty, concerning pollution from ships. - Enhance and support activities and regulations under international agreements on the environmental impacts of oil spills - Undertake a Regional Programme to minimize the impact of noise from ships and military engines, as well as other sources of noise pollution (mineral production, pingers, ringers, etc.) - Regulations for ballast water management to prevent the transfer of harmful aquatic organisms - Support the International Maritime Organization (IMO) convention prohibiting the use of harmful organisms anti-fouling paints used on ships; establish a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems - Support the declaration of PSSA –Particularly Sensitive Sea Areas (as defined by the IMO)	LT	C
20)	a)	Integrate of aquaculture practices into wider integrated management plans	- Carry out evaluations of carrying capacity of the littoral zone concerning aquaculture, and take the necessary steps to ensure that the offer is limited to the carrying capacities thus defined - Define (by country, and at sub-national level) interference, incompatibility and synergy between aquaculture projects and plans, and other uses of the littoral zone - Undertake the zoning of littoral areas at sub-national level - Identify zones suitable for aquaculture - Adapt aquaculture technology to be used in a case-by-case approach, taking into account zoning	LT	B
	b)	Develop research and measures to minimise the impacts of aquaculture practices on the marine and coastal environment	- Standard environmental impact assessment procedures convened 2 - Regulate of the use of pingers2 - Regional programme to reduce the invasion of alien species from aquaculture - Regional programme to minimise pollution caused by organic matter and nutrient enrichment from aquaculture farms - Regional programme to minimise the impact of wild seed to stock fish farms (e.g. red tuna) - Regional programme to minimise genetic pollution - Regional programme to minimise chemical pollution –disinfectants, anti-foulants, flesh colorants and medicines (including vaccines)	ST	B
	c)	Adopt measures to avoid the impacts of aquariology on the marine and coastal environment	- Prohibit in all the Mediterranean countries the use of potentially invasive species (e.g. caulerpas) in open or semi-open aquarium systems	ST	A
21)	a)	Improve fishing statistics	- Identify the main problems and gaps in getting accurate fishing statistics - Propose mechanisms to improve fishing statistics at regional level - In particular, design, implement and evaluate data collecting systems at national level - Establish a network of institutions responsible for acquiring statistics at national level	ST	C
	b)	Mediterranean strategy for the conservation and sustainable management of vulnerable fish and invertebrates, including sustainable related fisheries	- Assess the status of vulnerable fish and invertebrate populations subject to commercial fisheries - Determine adaptive and precautionary management schemes for the preservation of vulnerable populations - Assess the suitability of a complete ban on the exploitation of certain particularly vulnerable species at regional level - Assess (and eventually implement) the inclusion of species listed in the annexes of the SPA Protocol in the appropriate CITES lists - Develope selected case studies for different vulnerable species/groups carried out in different parts of the Mediterranean in order to draw up guidelines on vulnerable species management and conservation valid for the region	ST	A
	c)	Improve inter- and intra-specific selectivity of gear and fishing practices, addressing particularly the problems of by-catch, discard, and ghost-fishing	- Carry out research on effects of by-catch, discard and ghost-fishing on threatened and endangered species - Enhance research on fishing technology, fishing strategies and possible gear modifications to avoid by-catch, discards and ghost-fishing - Favour new consumption habits and technology to process unavoidably by-catched, under-consumed species	MT	A
	d)	Mediterranean strategy to reduce fishing-related mortality of marine mammals, turtles and sea birds	- Geographical identification of priority areas with significant impacts on cetaceans, monk seals, sea turtles and sea birds - Detailed analysis of the threat, and its significance with respect to the viability of impacted populations, based on the above and other complementary information obtained at the national level - Develop Mediterranean-specific approaches to counter the negative effects of fishing on vulnerable groups - Assess the potential relevance of existing technical improvements - Assess the applicability of spatial and temporal restrictions on impacting gear - Assess the possible implementation of no-take zones or areas with severe fishing restrictions - Assess the reliance of sea birds on discard from fishing fleets in the region - Establish an adaptive methodology based on pilot studies affecting different groups/species and implemented in selected sites around the Mediterranean	ST	A

	e)	Mediterranean strategy to reduce the impact of trawling and other towed gear on critical habitats	-	Geographical identification of priority areas with a verified high impact of towed gear	ST	A
			-	Identify shortcomings in legislation, and develop drafts for suitable improvement		
			-	Ascertain the real level of threat posed by current deep-water fishing practices, including likely short-term developments, on deep sea ecosystems in the region		
			-	Assess the effectiveness of artificial reefs to prevent illegal trawling		
			-	Assess the effectiveness of new prevention measures (cf. target h below)		
	f)	Mediterranean strategy to eliminate particularly harmful fishing practices	-	Geographical identification of priority areas with a significant occurrence of:	ST	A
			-	Identify of problems associated with the eradication of these practices		
			-	Geographical identification of priority areas with high levels of drift-net fishing		
			-	Ascertain the real level of damage inflicted on vulnerable species caught as by-catch in legal drift-nets		
			-	Identify problems associated with the eradication of legal drift-nets		
			-	Adopting measures leading either to the total banning of legal driftnets, depending on their effects on vulnerable species, or to possible remedies		
			-	Promote regional policy initiatives at GFCM level, including binding decisions regarding harmful fishing practices		
	g)	Develop and refine "traditional" control measures	-	Organize working groups (coordinated with FAO and other regional institutions) to develop and refine measures acting on 'inputs' (e.g. closed areas, closed seasons, limits on fishing time, number of vessels authorized in the fishery, characteristics of the fishing gear and equipment used, etc.)	ST	A
			-	Organize working groups (coordinated with FAO and other regional institutions) to develop and refine measures acting on 'outputs' (e.g. weight of catch or quota, minimum size of fish– mesh size, species, sex or sexual maturity of fish that may be legally harvested, etc.)		
			-	Support the implementation of refined management measures		
	h)	Develop new management techniques	-	Organize working groups (coordinated with FAO and other regional institutions) to develop and refine new management techniques (e.g. marine protected areas, artificial reefs, temporal closures –by season, area, etc., market tools, remote location and positioning of fishing ships, etc.)	ST	A
			-	Support the implementation of refined management measures		
	i)	Increase the number of marine fishery reserves to manage fishery stocks to attain the protection of 20% of the coast	-	Calculate total surface per country to be protected to reach the 20% threshold	LT	C
			-	Decide location, habitats included, size and number of marine fishery reserves based on participative schemes, taking stakeholders' needs and experience into account		
			-	Involve stakeholders in planning, managing, monitoring and exploitation issues; support their participation in the whole protection process		
			-	Undertake socio-economic and biological planning and monitoring of adopted measures		
			-	Define adaptive / flexible mechanisms to manage such areas		
			-	Coordinate management issues at regional level (cf. Target 11.b below)		
	j)	Control recreational fishing activities	-	Identify the main problems and gaps in getting accurate recreational fishing statistics	MT	B
			-	Propose mechanisms to improve recreational fishing statistics at regional level		
			-	In particular, design, implement and evaluate data collecting systems at national level		
			-	Establish a network of institutions responsible for acquiring statistics at national level		
			-	Regulate and enforce recreational fishing		

IV. DEVELOPING RESEARCH TO COMPLETE KNOWLEDGE AND FILL IN GAPS ON BIODIVERSITY

General objective

Improve the scientific understanding and assessment of marine and coastal ecosystems (From paragraph 34 of " Plan of Implementation " of the World Summit on Sustainable development – Johannesburg, September 2002)

Specific targets

- Launch research programmes before 2006 in order to fill in identified gaps (22a, b)
- Increase more than 50 the number of PHD taxonomists in the Mediterranean region by 2010 (23 a, b, c)

Activity (Priority actions)	Objectives	Specific actions	TF	Imp.
22) Improve and coordinate biodiversity research	a) Convene a workshop (under the UNEP MAP coordination) to identify gaps in knowledge of Mediterranean coastal and marine biodiversity (at genetic, species and communities/ecosystems level)	- Identify potential organisers - Identify potential participants - Agree about objectives of the workshop - Organisation of a workshop to identify gaps in knowledge of Mediterranean coastal and marine biodiversity	ST	A
	b) Create and fund research programmes at regional level, aiming at filling in gaps and completing knowledge of coastal and marine biodiversity, as well as transfer knowledge between countries	- Set up a network of excellence of national institutes of research on the issues identified through a workshop (cf. priority # 22 a) - Elaborate research programme on the issues identified through a workshop (cf. priority # 22 a)	ST	B
23) Improve taxonomic expertise in the region	a) Implement training programmes for modern taxonomists covering all groups, in order to increase the number of specialists	- Promote and co-ordinate MSc and PhD programmes - Encourage the establishment of bilateral and/or multinational grants programmes - Organise the exchange of students and specialists	MT	B
	b) Gather and circulate taxonomic bibliographic information	- Systematise exhaustive and well classified bibliographic information - Organise Internet-based information-exchange platforms	ST	A
	c) Creation of sub-regional biodiversity centres to store of representative collections of Mediterranean biodiversity, coupling published work, Internet-available descriptions and pictures of both preserved and live specimens, publication of genetic sequences identifying the species, etc.	- Set up sub-regional biodiversity centres - Recruit permanent staff for these centres	ST	C

V. CAPACITY BUILDING – COORDINATION AND TECHNICAL SUPPORT

Objective:

Strengthen cooperation and coordination among global observing systems and research programmes for integrated global observations, taking into account the need for building capacity and sharing of data from ground-based observations, satellite remote sensing and other sources among all countries[6](23a, b; 24 a, b)

Activity (Priority actions)	Objectives	Specific actions	TF	Imp.
24) Achieve 'clearing-house' mechanism to focus on marine and coastal conservation activities	a) The available clearing-house mechanisms (nationals, CBD, RAC/SPA, etc.) reinforced and developed within the framework of UNEP MAP	- Organize the organisms and institutions involved (determining roles and responsibilities) - Establish networking systems and exchange protocols: - Recruit permanent staff covering diverse skills and knowledge, to ensure completion of the clearing-house mechanism - Devote funds to organize the needed infrastructure - Co-ordinate the different conventions and related initiatives (e.g. CBD, GPA) - Provide start-up assistance to countries to develop participation in clearing-house mechanism	ST	A
	b) Ensure permanent updating of the Mediterranean clearing-house mechanism	- Promote the use of clearing-house mechanism at the regional level - Establish funding strategies in the medium- and long-term - Establish a quality-control, evaluation system	MT	A
25) Coordination and development of common tools to implement National Action Plans (NAPs)	a) Coordinate the implementation of NAPs elaborated within the SAP BIO Project (regarding the NAPs on threatened and endangered spcies cf. priority # 8)	- Organize subregional workshops on NAPs dealing with common issues - During the implementation phase assure the flow of information among the NAPs - When and if necessary refine NAPs - Establish procedures in the framework of the clearing-house mechanism to coordinate the implementation of NAPs (cf. Priority #24, Target a above)	ST	A

[6] From paragraph 119a of " Plan of Implementation " of the World Summit on Sustainable development - 4 September 2002 - Johannesburg

VI. INFORMATION AND PARTICIPATION

Objective:
Increased public participation in conservation initiatives

Activity (Priority actions)	Objective	Specific action	TF	Imp.
26) Facilitate the access to information for managers and decision-makers, as well as stakeholders and the general public	a) Enhance capacity building to ensure free access to Mediterranean environmental information	- Provide the clearing house mechanism (cf. Priority # 24) with capability to ensure access to information - Coordinate national, regional and international agencies aiming at providing and promoting the free access to environmental information[7]	ST	B
	b) Update and encourage right of access to environmental information	- Harmonise national legislations on access to environmental information - Encourage public authorities of countries to provide public access to the environmental information	ST	B
27) Promote public participation, within an integrated management scheme	a) Promote public participation	- Encourage countries public authorities of countries to facilitate public participation in environmental decision-making processes with significant environmental implications - Build up adequate mechanisms to facilitate participation by NGOs and the general public in environmental decision-making processes - Implement effective training programmes of public officials to improve their understanding of their responsibilities in granting the public access to information and facilitating public participation in environmental decision-making - Update and harmonise national legislation concerning public participation in environmental decision-making - Coordinate regional initiatives regarding public participation with other comparable national, regional and international initiatives and Conventions	MT	C
28) Preserve the traditional knowledge of stakeholders	a) Preserve, as heritage, traditional knowledge about marine and coastal elements	- Form a working group specifically addressing this issue at regional level, trying to recuperate, compile and publish traditional knowledge - Promote national and regional legislation to preserve traditional knowledge - Involve local communities in management actions for the conservation of Mediterranean biodiversity - Coordinate regional actions with other regional and international, related initiatives (e.g. UNEP, CBD, WIPO, WRI, etc.)	MT	B

VII. AWARENESS RAISING

Objective: Increase awareness raising on marine and coastal biodiversity conservation

Activity (Priority actions)	Objective	Specific action	TF	Imp.
29) Develop international collaboration in order to enhance regional public awareness	a) International cooperation and coordination on educational and awareness programmes	✍ Coordinate regional action with other subregional, regional, and international, related activities ✍ Coordinate awareness actions at regional level (e.g. through the UNEP MAP clearing-house mechanism) (cf. Priority # 24)	ST	C
30) Organise coordinated Mediterranean-level campaigns focusing on specific regional biodiversity issues (addressed both to specific stakeholders and to the general public)	a) Raise awareness on key themes	✍ Undertake studies to identify needs and gaps in public knowledge concerning threats to biodiversity, in particular: responsible tourism; trade in rare species; illegal or irresponsible fishing ✍ Produce material (leaflets, brochures, posters, CDs, TV documentaries, etc.) for circulation ✍ Produce educational material to be used in the framework of formal education ✍ Organize and/or encourage regional and sub-regional international, more-or-less specialized, youth work-camps dealing with environmental issues (e.g. restoring disturbed habitats, mapping sensitive habitats, collecting socio-economic information, compiling traditional knowledge, extracting invasive species, measuring pollution, informing tourists, etc.) ✍ Encourage national and sub-national governments about the importance of education issues to conserve biodiversity and support national NGOs in this field ✍ Involve scientific institutions and researchers in awareness actions and initiatives ✍ Organise general public, itinerant exhibitions, conferences and dissemination seminars	MT	B
	b) Main issues discussed in SAP/BIO brought to the attention of a wide public, including decision-makers, NGOs, scientists and researchers, tourist operators, fishing industry	✍ Produce brochures and posters in relevant languages on SAP/BIO themes including threats; species and sites; international cooperation ✍ Produce a regional electronic newsletter about SAP BIO and biodiversity conservation issues ✍ Convene a regional workshop to educate managers and other stakeholders, to promote critical, adaptive and flexible management approaches	ST	A

[7] e.g. INFOTERRA

PROVISIONS FOR FOLLOW-UP

Considering the nature and complexity of SAPBIO, launching its implementation implies a concerted and harmonised follow up activities at regional, national and local levels, based on mutual interdependence and interactions. Actions and prerequisites at local level, varying on a case-by-case basis, will be defined within the national programmes.

Follow-up activities at national level

Follow-up activities at national level include:

- establishing institutional arrangements,
- implementing actions pertaining to the preparatory phase,
- Refining National Investment Portfolios[8].
- Identifying opportunities and needs for cooperation, support, and/or sponsorship.
- Elaborating national funding and implementation strategies, including:
- - Formulating National SAP/BIO Operational Programmes
- national activities at the Launching Conference.

Follow-up activities at regional level

Follow-up activities at regional level include:

- those related to the provision of assistance, support, coordination and harmonisation of national follow-up activities, and
- those related to the prerequisites for implementation at regional level.
  - Establishing regional institutional arrangements.
  - Analysis of RAC/SPA's capacity for implementing SAP BIO and measures to strengthen it .
  - Formulating and implementing the preparatory phase.
  - Organising the Launching Conference.

The objectives of the Conference are to:

- inform on results of SAP/BIO and raise attention and awareness
- present the results of the preparatory phase, to attract partners and donors, establish partnership and sponsorship
- ensure media coverage and high-level national support.
- Establish institutional arrangements aimed at involving regional partners (members of the advisory committee) in implementing the SAPBIO at national and regional level.

The Conference will be organised after the completion of the preparatory phase to present all the relevant outputs and create the conditions for implementing SAP/BIO.

Its main output will be defining and establishing international co-operation and participation, looking for synergies and partnership. Potential partners for implementing SAP/BIO are: (i) scientifically or professionally competent and/or internationally trustworthy agencies, intergovernmental bodies and other international organisations, (ii) international funding programmes, in particular GEF and relevant EU programmes, and potential donors, and (iii) stakeholders, including regional NGOs and other interested or concerned representatives of the international, regional or sub-regional community.

[8] The refining of National Investment Portfolios ensure
- reducing fragmentation by grouping similar actions into larger thematic units,
- defining a time scale for each action and for grouping them together,
- a more precise calculation of the funds needed for each action,
- ranking of actions, according to their significance and the expected benefits
- analysing "implementability" i. e. of prerequisites to be met: necessary preparatory activities, technical design, funding availability.

Tentative timetable

Milestone activities:	Tentative deadline
1. Formulation of the project document for the Preparatory Phase and its adoption	End January 2004
2. Implementation of the Preparatory Phase	February-October 2004
3. Launching Conference	October 2004

Although the following tentative timetable for implementing milestone follow-up activities is based on realistic hypothesis, some amendments might be necessary. The detailed operational timetable will have to be elaborated in the project document for the Preparatory Phase.

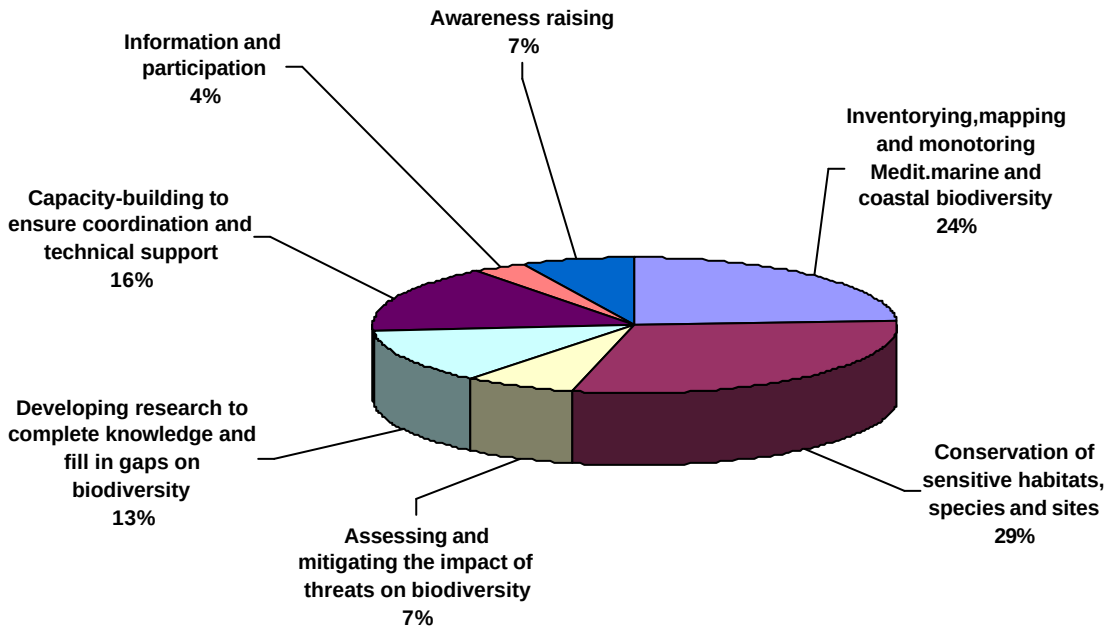
ANNEX
INVESTMENT PORTFOLIO

This Annex presents:
- summary information and assessment of all actions needing investments, per three basic categories and per countries
- the investment strategy
- approaches to funding strategies at regional and national levels.

For the purpose, all priority actions are grouped in three categories:
a) National Action Plans for specific priority issues (NAPs), as prepared by national teams
b) National Priority Actions, other than those included in NAPs (ONPAs), identified by the National Reports,
c) Regional Actions (RAs), as identified by the regional process of SAP/BIO elaboration.
Information presented in this annex is a synthesis of the respective more extensive documents:
- "Extensive SAP/BIO Investment Portfolio", presenting all individual investments per category and country in tabular form,
- "Summary of National Action Plans", and
- "Breakdown of costings for Regional Actions".

Number of actions and total of investment needed, per category

Category	No. of actions	Investments estimated, US $
1. National Action Plans	58	38,981,000
2. Other National Priority Actions	168	57,848,000
3. Regional Priority Actions	30	40,055,000
Grand Total	**256**	**136,884,000**



Breakdown of investment needed according to the 7 categories of action

National Action Plans per country: titles and costing(US$)

Albania	
1. Action Plan for the proclamation of the Marine National Park of Karaburuni area	638, 000
2. Action Plan for the rehabilitation of the Kune-Vain lagoon system	745,000
3. Action Plan for the Dalmatian pelican in Albania	893,000
4. Action Plan for building and exploitation of artificial reefs for the fisheries along the Albanian coast.	1,908,000
Algeria	
1. Action Plan for setting up a network for monitoring of Posidonia oceanica meadows	49,000
2. Action Plan for setting up a programme to the collect of data on the Monk seal ;	69,000
3. Action Plan for reducing fishing activity pressure on coastal area biodiversity hot spots	181,000
4. Action Plan for inventorying and setting up marine and coastal protected areas in Algeria	1,254,000
Bosnia and Herzegovina	
1. Action Plan for the identification and preservation of endangered marine, freshwater and terrestrial habitats and plant communities in the Mediterranean zone of Bosnia and Herzegovina	275,000
2. Action Plan for the sustainable development of the marine and adjacent waters of Bosnia and Herzegovina: cross border co-operation issue.	160,000
Croatia	
1. Action Plan for a network of Mediterranean wetlands in Croatia – management and restoration;	400,000
2. Action Plan to combat negative Impact of hunting, poaching and commercial collecting on coastal zone biodiversity, including introduction of new game species on islands;	300,000
3. Action Plan for mapping, assessment and protection of submerged karstic phenomena;	120,000
4. Action Plan on biodiversity conservation as a part of integral coastal zone management planning.	1,025,000
Egypt	
1. Bio-resources assessment of Mediterranean coastal waters of Egypt, development of Mediterranean Bio-Diversity Database, and public awareness for bio-conservation	2,753.000
2. Development and maintenance of the Matruh Nature Conservation Sector (MNCZ)	1,701,000
3. Bedouin operated bio-diversity conservation and restoration programme	2,855.000
Israel	
1. Action Plan for the conservation of marine and coastal birds in Israel	127,000
2. Action Plan for the conservation of fish along the Israeli coast of Mediterranean	420.000
Lebanon	
1. Action Plan for organising awareness campaigns for the Lebanese coastal communities and the public sector;	534.000
2. Action Plan for updating of legislation and development of guidelines for marine and coastal conservation;	180,000
3. Action Plan for determining the physical parameters of the Lebanese marine environment;	2,750,000
4. Action Plan for establishing conservation strategies for coastal habitats	1,040,000
5. Action Plan for developing monitoring strategies for coastal and marine biodiversity;	416,000
6. Action Plan for Palm Islands & Tyre Coast Nature Reserves.	412,000

Libya	
1. Action Plan for the conservation of marine and coastal birds in Libya	420,000
2. Action Plan on proposed new marine and coastal protected areas and national parks	320,000
3. Action Plan for the conservation of marine turtles and their habitats in Libya	133.000
Malta	
1. Action Plans for the conservation of cetaceans in Maltese waters	901,000
2. Action Plan for estimating the sustainability of grouper fishing in Malta	797,000
3. Action Plan for the conservation of sharks, rays and skate in the Maltese Islands	260.000
4. Action Plan for the micro-cartography, mapping and surveillance of the *Posidonia oceanica* meadows in the Maltese Islands.	86,000
Morocco	
1. Action plan for mapping Morocco's Mediterranean coast	103,000
2. Action Plan for a research programme on Morocco's Mediterranean biodiversity	225,000
3. Action Plan for elaborating programmes and projects on education and awareness, and elaborating a guide to Morocco's endangered species and ecosystems	510,000
4. Action Plan for improving the national legislation	12,000
5. Action Plan for making best use of the Mediterranean marine biodiversity	10,000
6- Action Plan for protecting species threatened by traditional fisheries	186,000
Slovenia	
1. Action Plan on Habitat cartography supported by the Geographic Information System with special emphasis on seagrass meadows	155,000
2. Action Plan for biological invasions and possible effects on biodiversity	30,000
3. Action Plan on the impact of alien populations used in mariculture on genome of wild populations of same species	33,000
4. Action Plan on Slovene commercial fishery by-catch	48,000
5. Action Plan for Sensitive ecosystems – *Posidonia oceanica* meadow (ecological conditions, cartography and monitoring based on the *GIS Posidonie* methodology)	79,000
Syria:	
1. Action Plan for the conservation of sea turtles along the Syrian coast	1,550,000
2. Action Plan for marine and coastal protected areas	2,575,000
3. Action Plan on invasive species and their impacts on marine biodiversity	1,125,000
4. Action Plan for determination of physical parameters of national marine waters	1,750,000
Tunisia	
1. Action Plan for the impact of fishing activity on littoral biodiversity	615,000
2. Action Plan for a pilot monitoring of *Posidonia* meadows;	440,000
3. Action Plan for Protecting coralligenous communities;	450,000
4. Action Plan for the co-ordination and training on legal and institutional aspects	280,000
5. Action Plan for studying invasive species	200,000
6. Action Plan on awareness raising and education on biodiversity	430,000
7. Action Plan for establishing Centre for the protection of sea turtles	400,000
Turkey	
1. Conservation of marine turtles in Turkey	2,450,000
2. Creation of marine protected areas along the Turkish coasts	375,000
3. Reducing the negative impacts of detrimental fishing practices (trawl, purse seine, spear fishing, use of explosives) on sensitive ecosystems and on vulnerable species;	183,000
4. Conservation of cetacean species in the Turkish water of the Aegean and Mediterranean Sea	645,000

Regional Actions, estimated investment, issue category and rank of priority, with breakdown for each action per rank of priority (*)

Regional Priority Action	Estimated Investment (US$)	Issue category (***)
1. Make a complete and integrated inventory (by sub-regions) of Mediterranean coastal, wetland, and marine sensitive habitats	1,150,000 H	I
2. Establish a monitoring system of endangered and threatened species	(180, 000) 30,000 H, 150,000 M	I
3. Promote the adequate monitoring and survey of the effectiveness of marine and coastal protected areas	(50,000) 40,000H 10,000 M	I
4. Identify, develop, and validate adequate biological and socio-economic indicators to assess the ecological health of sensitive habitats and species, and to evaluate the effectiveness of management measures	115,000 M	I
5. Update, coordinate and enforce legislation to conserve biodiversity	20,000 H	I
6. Develop actions to conserve threatened and endangered (coastal and marine) Mediterranean species, as identified by National Reports	110,000 H	I
7. Assist countries to protect marine and coastal sites of particular interest	1,000,000 H	II
8. Declare and develop of new Coastal and Marine Protected Areas including in the high seas	(16,300,000) 15,000,000 H 1,300,000 M	II
9. Assist countries in the development of existing marine and coastal protected areas	(5,500,000) 5,000,000 H 500,000 L	II
10. Monitor global trade and economic policies and trends from a Mediterranean perspective, to analyse their scope and probable effects on biodiversity	35,000 M	II
11. Establish a monitoring regional programme following up the socio-economic impact of changes in biodiversity	10,000 M	II
12. Assess the potential impact of climate change and rise in sea level on Mediterranean coastal and marine biodiversity	40,000 L	III
13. Assess the potential impact of threats on Mediterranean coastal and marine biodiversity	115,000 L	III
14. Mitigate the direct impact of international trade in endangered species	510,000 M	III
15. Control and mitigate the introduction and spread of alien and invasive species	6,000,000 H	III
16. Control and mitigate coastal urbanization and construction of coastal infrastructure	50,000 L	III
17. Control and mitigate the effect of changes in land use	100,000 L	III
18. Promote eco- and soft tourism, control and mitigate impact of recreational activities	3,100,000 M	III
19. Assess and elaborate of strategies to prevent the environmental impact of sources of pollution	(125,000) ** 75,000 M 50,000 L	III
20. Control and regulation of aquaculture practices	75,000 M	III
21. Assessment, control and elaboration of strategies to prevent impact of fisheries on biodiversity	(1,370,000) ** 370.000 H 1,000,000 L	III
22. Improve and coordinate biodiversity research	100,000 H	IV
23. Improve taxonomic expertise in the region	1,280,000 H	V
24. Achieve 'clearing-house' mechanism to focus on marine and coastal conservation activities	400,000 H	VI
25. Coordinate and develop common tools to implement National Action Plans (NAPs)	50,000 H	VI
26. Facilitate access to information for managers and decision-makers, as well as stakeholders and the general public	20,000 H	VI
27. Promote public participation, within an integrated management scheme	700,000 H	VI
28. Preserve traditional knowledge of stakeholders	100,000 H	VI
29. Develop international collaboration in order to enhance regional public awareness	100,000 H	VI
30. Organise coordinated Mediterranean-level campaigns focusing on specific regional biodiversity issues (addressed both to specific stakeholders and to the general public)	(1,250,000) 250,000 H 1,000,000 L	VI
Total	**40,055,000**	

(*) H = high, first priority rank; M = medium, second priority rank; L = low, third priority rank
(**) Support for other programmes
(***) Issue categories:

I. Inventorying, mapping and monitoring Mediterranean coastal and marine biodiversity
II. Conservation of sensitive habitats, species and sites
III. Assessing and mitigating the impact of threats to biodiversity
IV. Developing research to complete knowledge and fill gaps in biodiversity
V. Capacity-building to ensure coordination and technical support
VI. Information and participation
VII. Awareness raising.

Regional Priority Actions: structure of investment needed per priority ranking

Priority rank	Respective totals, US$	% of Grand Total
High priority	31,720,000	79,3
Medium priority	5,980,000	14,9
Low priority	2,355,000	5,8
Total	**40,055,000**	**100,0**

Regional activities to support national and other actions in the preparatory phase

Activity	Costing estimate, US$
1. Assistance to countries for further refining of costings	60,000
2. Preparation of the operational strategy for funding and implementation of SAP/BIO at national and regional levels (strategy, preparation of funding requests, contacts with donors and partners, etc.)	75,000
3. Information, co-ordination, capacity building workshops	60,000
4. Launching Conference (preparatory activities, preparation of national and regional reference documents, resource persons, participants expenses)	75,000
5. Co-ordination costs	25,000
Total:	**295,000**

National Action Plans, totals per countries

Country	No. of NAPs	Estimated investment, US $
1. Albania	4	4,184,000
2. Algeria	4	1,553,000
3. Bosnia and Herzegovina	2	435,000
4. Croatia	4	1,845,000
5. Egypt	3	7,309,000
6. Israel	2	547,000
7. Lebanon	6	5,332,000
8. Libya	3	873,000
9. Malta	4	2,044,000
10. Morocco	6	1,046,000
11. Slovenia	5	345,000
12. Syria	4	7,000,000
13. Tunisia	7	2,815,000
14. Turkey	4	3,653,000
Grand Total	**58**	**38,981,000**

Other National Priority Actions, per country

Country	No. of ONPAs:	Estimated Investment/country, US $ Totals
1. Albania	22	7,290,000
2. Algeria	6	748,000
3. Bosnia and Herzegovina	11	4,520,000
4. Croatia	29	7,590,000
5. Cyprus	9	3,100,000
6. Egypt	1	2,500,000
7. Greece	27	20,505,000
8. Israel	3	460,000
9. Italy	(5)	-------
10. Libya	5	1,200,000
11. Malta	17	4,540,000
12. Slovenia	13	375,000
13. Spain	(12)	-------
14. Syria	(13)	-------
15. Turkey	25	3,705,000
Grand Total	**168**	**57,848,000**

INVESTMENT AND IMPLEMENTATION STRATEGY

In order to define a realistic and fact-based investment strategy, the summary of investment data presented in the previous sections should be considered from various points of view, in particular concerning: a) the present level of actions programmes elaboration, b) readiness for implementation, excluding funding aspects, and c) the rank of priority as defined in Ch. II.

An interpretation of the above facts for three categories and actions to support the preparatory phase of action is presented in Table 5.

Facts relevant to the SAP/BIO investment strategy

Category	No. of actions	Total costing, Mil. $	Costing, justified	Programme elaboration	Implementability pending funding	Priority rank (*)
1. NAPs	**58**	**39,0**	**Yes**	**Satisfactory**	**Implementable**	**H**
2. RPAs	**30**	**40.0**	**Yes**	**Satisfactory**		**H/M/L**
(RPAs/H		(31.7)	Yes	Satisfactory	Implementable	H
RPAs/M		(6.0)	Yes	Satisfactory	Not yet implementable	M
RPAs/L		(2.3)	Yes	Satisfactory	Not yet implementable	L)
3. ONPAs	**168**	**57.8**	**Rough estimates**	**Not yet elaborated**	**Most not yet implementable**	**To be defined by countries**

(*) H = high, first priority rank; M = medium, second priority rank; L = low, third priority rank.

Due to funding aspects, capacity for implementation, and from an operational point of view, implementation of SAP/BIO needs to be phased, at regional and national level. After the adoption of SAP/BIO, a short-term preparatory phase is needed, to allow the preparation of inputs for launching and implementing the regional and national SAP/BIO components..

This preparatory phase should consist of:
- immediate contacts and preliminary agreements with partners and donors,
- refining of national investment portfolios,
- defining of funding and implementation strategies,
- provision of assistance to countries to meet the needed prerequisites, and
- harmonisation of all respective activities.

In all cases provision of permanent sources for implementation, such as market instruments for SAP/BIO and private sponsorship should be considered.

In principle, the potential national sources to be looked for are: budgets and funds at national and local level, private partnership and/or sponsorship, economic instruments and mechanisms, fund-raising, and other national or issue specific sources, if any. Providing proper approaches are applied, and if classic unattractive, outdated forms and mechanisms are abandoned, large national funds might be secured in almost all countries.

Among potential external sources to be analysed, the following might be mentioned:
a) sub-regional or multi- or bilateral co-operation (N/S or N/E type, not excluding the S/S type),
b) international funding programmes, pending eligibility: GEF, UNDP, WB, METAP, etc.
c) international foundations, private partnerships, sponsorships, grants, etc.
d) various EU sources, pending eligibility
e) other international funds, if appropriate.

Previous experience related to the implementing of similar large international programmes indicates as realistic the formulation of an outline for a large SAP/BIO Umbrella Project, where as components are envisaged:
a) regional component including: (i) regional actions to be implemented at regional level,
(ii) regional actions to be implemented in the countries themselves, and (iii) assistance to countries,
b) the countries' related components, composed of the set of national programmes.