



**United Nations
Environment
Programme**

EP



UNEP(OCA)/MED IG.12/9
6 December 1999

Original: ENGLISH

MEDITERRANEAN ACTION PLAN

Eleventh Ordinary Meeting of the Contracting Parties
to the Convention for the Protection of the
Mediterranean Sea against Pollution and its Protocols

Malta, 27-30 October 1999

REPORT

**OF THE ELEVENTH ORDINARY MEETING OF THE CONTRACTING PARTIES TO THE
CONVENTION FOR THE PROTECTION OF THE MEDITERRANEAN SEA AGAINST
POLLUTION AND ITS PROTOCOLS**

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Introduction

1. The Tenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols (Tunis, 18-21 November 1997) accepted the offer of the Government of Malta to host the Eleventh Ordinary Meeting of the Contracting Parties. Accordingly, the Eleventh Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols was held at the New Dolmen Hotel, St Paul's Bay, Malta, from 27 to 30 October 1999.

Attendance

2. The following Contracting Parties to the Barcelona Convention were represented at the Meeting: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, European Community, France, Greece, Israel, Italy, Lebanon, Libyan Arab Jamahiriya, Malta, Monaco, Morocco, Slovenia, Spain, Syrian Arab Republic, Tunisia and Turkey.

3. The following United Nations bodies and specialized agencies were represented by observers: Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO); International Atomic Energy Agency Marine Environmental Studies Laboratory (IAEA/MESL); International Maritime Organization (IMO); Mediterranean Technical Assistance Programme (METAP); United Nations Industrial Development Organization (UNIDO); World Health Organization (WHO)

4. The following intergovernmental and non-governmental organizations were represented by observers: Accord entre la France, l'Italie et la Principauté de Monaco relatif à la Protection des Eaux du Littoral Méditerranéen (RAMOGE); Amigos de la Tierra; Arab Office for Youth and Environment (AOYE); Association des Chambres de Commerce et d'Industrie de la Méditerranée (ASCAME); EcoMediterranea; European Chemical Industry Council (CEFIC); Convention on Wetlands (RAMSAR); Friends of the Earth; Greenpeace; Institut Méditerranéen de l'Eau; International Centre for Advanced Mediterranean Agronomic Studies Centre International des Hautes Etudes Agronomiques Méditerranéennes; International Marine Centre (IMC); MedCities, MEDCOAST; Med FORUM; Mediterranean Information Office for Environment and Sustainable Development (MIO-ECSDE); MEDMARAVIS (Research and Conservation of Island and Coastal Ecosystems in the Mediterranean); Society for the Protection of Nature (SPNI); World Wide Fund for Nature (WWF).

5. UNEP headquarters was represented by the Assistant Executive Director. The Coordinating Unit and all the MAP Regional Activity Centres were also represented.

6. A complete list of participants is attached as Annex I to this report.

Agenda item 1: Opening of the Meeting

7. As required by Rule 21 of the Rules of Procedure for Meetings and Conferences of the Contracting Parties, the President elected by the Tenth Ordinary Meeting, H.E. Mrs Faiza Kefi, Minister for the Environment and Land Use Planning of Tunisia, declared the Meeting open.

8. The Meeting was privileged to hear addresses by the H.E. Francis Zammit Dimech, Minister for the Environment of Malta, H.E. Mrs Faiza Kefi, Minister for the Environment and Land Use Planning of Tunisia, and Mr Lucien Chabason, Coordinator of the Mediterranean Action Plan (MAP), speaking on behalf of Mr Klaus Töpfer, Executive Director of the United Nations Environment Programme (UNEP). The full text of their statements is attached as Annex II.

Agenda item 2: Rules of Procedure

9. The Meeting noted that the Rules of Procedure for Meetings and Conferences of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols (UNEP(OCA)/MED IG.43/6, Annex XI), as amended by the Eighth Ordinary Meeting, would apply to its deliberations.

Agenda item 3: Election of officers

10. In accordance with Rule 20 of the Rules of Procedure and in conformity with the recommendations of the informal meeting of the heads of delegations, the Meeting unanimously elected the following Bureau:

President:	H.E. Francis Zammit Dimech	(Malta)
Vice-President:	Mr Gabriel Gabrielides	(Cyprus)
Vice-President:	Mr Pierre Roussel	(France)
Vice-President:	H.E. Mr Valerio Calzolaio	(Italy)
Vice-President:	H.E. Mr Abdul Hamid Al-Mounajed	(Syrian Arabic Republic)
Rapporteur:	H.E. Mr Ashur Mohamed Emgeg	(Libyan Arab Jamahiriya)

Agenda item 4: Adoption of the Agenda and organization of work

11. The Meeting unanimously adopted the provisional agenda (UNEP(OCA)/MED IG.12/1) and approved the proposed timetable in the annotated provisional agenda (UNEP(OCA)/MED IG.12/2). The representative of Turkey suggested that the Meeting should discuss under item 10 (any other business) the Turkish proposal for a new Regional Activity Centre focusing on training. The agenda is attached as Annex III to this report.

Agenda item 5: Credentials of representatives

12. In accordance with Rule 19 of the Rules of Procedure, the Bureau of the Contracting Parties met on 28 October 1999 under its President to examine the credentials of the representatives of the Contracting Parties attending the Eleventh Ordinary Meeting of the Contracting Parties. It found the credentials in order and so reported to the Meeting, which approved the Bureau's report on 28 October 1999.

Agenda item 6: Progress report of the Executive Director on the implementation of the Mediterranean Action Plan in 1998-1999

13. Mr. L. Chabason, Coordinator of MAP, introducing the report of the Executive Director (UNEP (OCA)/MED IG.12/3), drew attention to the new structure and integrated format of the document, which aimed to improve the clarity and comprehensiveness of the reporting procedure. The new format identified the major issues and related problems, the response by MAP in the form of a progress report covering the ongoing biennium 1998-1999, gaps remaining to be bridged and specific recommendations relevant to the issue in question, together with budgetary allocations. In his introduction, he gave a brief overview of the state of

progress in the major areas of activity during the biennium, as described in the "Coordination" and "Components" sections of the report.

14. With regard to the legal and institutional framework, none of the new or amended legal instruments had entered into force in 1999, despite the appeals that they be ratified expeditiously. Nonetheless, work had been initiated to carry out measures in support of the new Protocols and amendments, pending their entry into force. Concerning the institutional framework, a proposed functional chart taking into account the new developments in MAP activities had been produced by the Secretariat at the request of UNEP. Concerning information and communication, a new MAP Information Strategy had been produced by the Secretariat and reviewed by a group of experts and the Bureau. Finally, there had been a number of significant staffing changes in the Coordination Unit and he expressed his thanks and best wishes to the outgoing staff and to those taking up new tasks.

15. With regard to the Mediterranean Commission on Sustainable Development (MCSD), the thematic working groups established under the coordination of task managers and with support of the MAP Secretariat continued their work. MCSD had finalized its task related to the areas of "sustainable development indicators", "tourism and sustainable development" and "information, awareness, environmental education and participation". In conformity with the recommendations of the MCSD, the Secretariat was currently focusing on the production of a report dealing with Agenda MED 21+5.

16. Cooperation had continued with a large number of United Nations agencies, Convention Secretariats, intergovernmental organizations, non-governmental organizations and other institutions, and significant efforts had been devoted to that task. Within the framework of the strategy for cooperation, even greater efforts needed to be made to further strengthen cooperation with relevant bodies.

17. The Coordinator drew attention to the detailed description of activities undertaken in the area of pollution prevention and control, contained in section II (A) of the report. He highlighted the important work carried out by the Regional Activity Centres in the areas of pollution prevention and control, the conservation of biological diversity, sustainable management of coastal zones and the integration of environment and development.

Agenda item 7: General discussion on environment and sustainable development in the Mediterranean region

18. At the invitation of the President, Ministers, heads of delegation and observers made statements on the environment and sustainable development in the Mediterranean region. All speakers who took the floor thanked the Maltese Government for their warm hospitality.

19. H.E. the Minister of Physical Planning and Environment of **Bosnia and Herzegovina** thanked all the Mediterranean countries which had helped his country in its reconstruction efforts during the post-war period. Since the end of the war, Bosnia and Herzegovina had been going through a transitional stage marked by its intention to join the Council of Europe and other European organizations. During that period, the protection of the environment had been one of its main priorities. However, the complex political relations deriving from the Dayton Accords had resulted in highly complicated procedures for the adoption of environmental legislation. Under the Accords, responsibility had been vested in the two entities and ten cantons, each of which had its own laws. So there was a great need to harmonize all their separate efforts.

20. At the present time, the implementation of the Barcelona Convention and its Protocols in domestic legislation was on the agenda and efforts were expected to continue for at least two years. Draft laws in the different areas covered by the Convention and its Protocols were being developed with the substantial support of the European Union. A MAP office in the country followed all issues relating to the Convention and the activities of MAP. Cooperation with other Mediterranean countries was proceeding through participation in meetings, seminars and training courses organized by MAP. A national action plan was being drawn up with the primary aim of strengthening human resources.

21. In the forthcoming biennium, Bosnia and Herzegovina hoped to be in a position to join in all efforts undertaken in the Mediterranean region for the protection of the environment and sustainable development.

22. H.E. Secretary of the People's Committee for Shabiat, Governor of Tripoli, **Libyan Arab Jamahiriya** said that his country paid the utmost attention to the subject of sustainable development, which was the cornerstone of prosperity and development for all countries. At the same time, a balance had to be struck between the conservation of natural resources and the protection of the environment. The Libyan Arab Jamahiriya was seeking to establish a legal and institutional framework to achieve the objectives of sustainable development.

23. In that connection, steps had been taken in his country to institute water management through the establishment of a general water authority, to create a service for the ecological discharge of municipal wastes, to protect coastal areas, to prohibit trade in rare or threatened species and to preserve biological diversity. In addition, an environmental agency was attempting to achieve the sustainable development of tourism and to prevent the pollution of the Mediterranean.

24. For several years, the embargo to which his country had been subjected had prevented the implementation of various development projects, which he hoped could go ahead now that the embargo had been lifted. He also emphasized that regional and international cooperation was essential if sustainable development was to be achieved.

25. The Libyan Arab Jamahiriya was at present taking the necessary legal steps to ratify the amended Barcelona Convention and its Protocols. His greatest hope was that the Mediterranean region would become a model of peace and security.

26. H.E. the Minister responsible for International Cooperation for the Environment and Development of **Monaco** said that his country, as a member of the Bureau and of the Steering Committee of the Mediterranean Commission on Sustainable Development (MCSD), regretted the fact that the Mediterranean States had approached the ratification of the amended Barcelona Convention and its Protocols, in particular the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA and Biodiversity Protocol), so slowly and hoped that the process would be speeded up.

27. With regard to the prevention and control of pollution, the primary concern of the Barcelona Convention, he welcomed the work of coordination and promotion carried out by MEDPOL and REMPEC and the collaboration that had arisen between Monaco, RAMOGE and MEDPOL in the monitoring of pollution using biomarkers. With special reference to maritime pollution, the work performed by REMPEC for the revision of the Protocol Concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency (Emergency Protocol) had been very useful, but a

voluntarist approach was necessary to combat effectively illicit discharges by oil tankers at sea. In addition to the introduction of a tanker fleet with segregated ballast, which would necessarily be a gradual process, it was essential to equip ports with installations for the storage and treatment of ballast water at a reasonable cost. In that context, over and above the funding made available by GEF and FFEM, the implementation of the Strategic Action Programme would require the countries where "hot spots" were located to demonstrate political will by providing extra resources.

28. On the subject of the preservation of biological diversity, SPA/RAC had carried out excellent work in the field of classification, the list of references, the updating of action plans for the protection of marine turtles, monk seals and cetaceans and the new plan of action for marine vegetation. It was most important that member countries should make every effort to put the relevant recommendations into effect. The efforts made by SPA/RAC to coordinate its activities with European and world processes were equally constructive, since that was the only way of enabling Mediterranean structures to become the means of implementing international recommendations in the region. Monaco also welcomed the establishment within the General Fisheries Commission for the Mediterranean of an environment and ecosystem subcommittee responsible for the interface between the conservation and the exploitation of species. Monaco was providing the interim secretariat for the ACCOBAMS Agreement, signed by 14 countries and already ratified by four. There too, it was essential to speed up the ratification process. In addition, in collaboration with France and Italy, Monaco had drawn up an agreement for the creation of a marine mammal sanctuary in the Corso-Liguro-Provençal basin and he hoped that other countries of the western Mediterranean basin would associate themselves with the project.

29. He commended the support given to the MCS D by the Regional Activity Centers, especially Blue Plan, and the crucial role that they had played in drawing up Mediterranean indicators for sustainable development. Coastal urbanization posed a serious problem for the environment and sustainable development in the Mediterranean. The issue should therefore be given priority attention by the MCS D, whose strategic review for the year 2000 would have a strong stimulant effect in that regard.

30. In the field of cooperation and coordination, the need for intersectoral coordination was becoming increasingly evident at both national and intergovernmental levels. The Coordinating Unit had made commendable efforts to that end in spite of shortage of staff: it should be given all the resources it needed. In that context, proposals to set up new Regional Activity Centres should not be approved if they would greatly increase the burden placed on the Coordinating Unit.

31. The Mediterranean region faced not only environmental and development problems, but situations of tension and even of open conflict. There were therefore grounds for giving priority consideration to the enactment of legislative measures to protect the Mediterranean from the consequences of armed conflict.

32. As part of its efforts to develop effective cooperation with its neighbours in the eastern and southern Mediterranean basin, Monaco had hosted the Fourth Meeting of the MCS D and would be proud to welcome the Twelfth Ordinary Meeting of the Contracting Parties.

33. H.E. the State Secretary of Water Affairs of the Ministry of the Environment and Spatial Planning of **Slovenia** said that his country had 46.6 km of coastline in the gulf of Trieste, which it shared with Italy and Croatia. Marine transport, agriculture, industry, urbanization and tourism were all having significant impacts on the environment, often leading to the degradation of natural resources and habitats. In drawing up and implementing spatial development plans,

Slovenia took into account the principles of sustainable development and had designated a quarter of its coast a protected area. In 1992, a large system of preserved salt pans had been included in the Ramsar List of Wetlands of International Importance and in 1996 a regional park in the Reka basin had been included in the UNESCO World Heritage List.

34. In order to implement sustainable development in the protected areas, Slovenia had introduced a river basin management plan for the river Dragonja, bordering on Croatia. The Dragonja valley was one of the best preserved in the Adriatic. Over the past 50 years, unlike in other Mediterranean countries, the share of forest cover had increased substantially to attain 60 per cent

35. With its short coastline, Slovenia was eager to apply the principles and methods of the integrated river basin and coastal area management plans, which involved active participation by the public. He believed that this complex process, covering natural, social and economic aspects, would provide a sound basis for the sustainable development of the Slovenian coastal area.

36. A regional development agency was to be established in Koper in the course of the year with a view to harmonizing economic development initiatives with the capacity of the environment. By setting up the agency, Slovenia would fulfil a requirement of the national environment action programme which called for a regional public administration to improve the management of the coastal area. Using the experience gained from its participation in the MCSD, the agency would apply the relevant guidelines, including the monitoring of environmental indicators.

37. REMPEC had provided valuable assistance to Slovenia for the project on risk assessment and associated capacity building for preparedness and response to maritime-related accidents involving liquid chemicals in bulk for the port of Koper. Once implemented, the project would raise safety standards in the port.

38. At international level, the Trilateral Commission on the Protection of the Adriatic Sea (Italy, Croatia and Slovenia) met regularly and had working groups on Adriatic Sea quality, a contingency plan and the eco-safety of maritime transport. In June 1999 it had been decided to prepare a study on the northern Adriatic to determine whether it should be designated a sensitive area. The initiative was in accordance with the new generation of CAMPs and Slovenia proposed that implementation under MAP should begin in 2000-2001. The plan was a good example of trilateral cooperation in the northernmost Mediterranean gulf.

39. The representative of **Spain** said that his country naturally felt a special attachment to the Barcelona Convention. The decisions taken by the Parties at their current Meeting should ensure that Mediterranean policies became the basis for environmental policies in their respective countries. Mediterranean policies, however, implied the ratification of the amendments to the Convention and its Protocols and he urged all Parties to ratify them as rapidly as possible. The fact that Spain had not yet ratified the Protocol for Protection of the Mediterranean Sea Against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Offshore Protocol) or the Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal (Hazardous Wastes Protocol) should not be interpreted as a lack of interest on the part of Spain. Consultations were taking place to initiate the ratification process as soon as possible.

40. He expressed support for the implementation of the Strategic Action Programme and hoped that priority would be given to combating pollution caused by the discharge of substances that were toxic, persistent and liable to bioaccumulate.

41. Turning to the MCSD, he recalled that Spain was a co-task manager for the working group on tourism and sustainable development, together with the Chambers Group for the Development of Greek Isles. Because of its contribution to economic and social development, tourism had become a sector of primary importance. For the Spanish Government, reconciling the economic and environmental aspects of tourism was a priority. It was seeking to develop guidelines for environmentally friendly tourism and to remedy the errors made in the past, without causing economic upheavals in the sector that might have serious social consequences. To that end, in 1998 the Spanish Ministry of the Economy and Finance and the Ministry of the Environment had signed an agreement to formulate a sustainable tourism programme.

42. Spain was supportive of the valuable work carried out by SPA/RAC and had also adopted its own national strategy for the sustainable use of biological diversity, with special emphasis on the conservation of the marine environment. With a view to applying that strategy, it had adopted a work programme on the conservation of the marine environment whose activities included identifying, defining and monitoring sites in conformity with international agreements, the conservation of marine species, measures to support the management and conservation of marine areas and species, and participation in relevant forums. The strategy also provided for sectoral plans in the areas of fisheries and tourism. Another tourism-related activity was the preparation of a code of conduct for the protection of cetaceans in the course of whale-watching activities.

43. Spain welcomed the proposal on sustainable coastal zone management, but its effectiveness depended on the preparation of a regional or international legal instrument because integral management involved coastal zones in more than one country. He cited a number of aspects that should be covered by such an instrument.

44. Finally, he said that Ministry of the Environment had signed a framework collaboration agreement with the Catalonian authorities to contribute US\$625,000 to finance the activities of the Cleaner Production Centre as a MAP activity centre.

45. H.E. the Minister of State for Environmental Affairs of the **Syrian Arab Republic** emphasized the importance of the activities currently being undertaken for the protection of the environment and the promotion of sustainable development in the Mediterranean. These were being carried out in collaboration with international environmental and other organizations and with NGOs, which played an extremely important role in raising the awareness of citizens and decision-makers on matters relating to environmental protection. However, despite the action taken, some countries were not applying the standards developed. There were many reports, including those by Greenpeace and MAP, which showed that the waste dumped at sea by Israeli ships was an important polluting factor in the Mediterranean. In-depth studies of the effects of such dumping on marine life and on the inhabitants of the region were required.

46. The information provided by the Executive Director in the Progress Report gave some hope that the standards of the Barcelona system would be applied. However, more support was required for environmental programmes in the region so that factors harmful to the environment could be identified and there would be increased awareness of what needed to be done to protect the Mediterranean basin and its flora and fauna. MAP should therefore identify high-risk areas and work in collaboration with the individual countries to prevent any further deterioration

resulting, for example, from activities in the areas of fishing and tourism and by public agencies.

47. He emphasized that the Syrian Arab Republic included environmental issues in all of its development plans. As one of the first nations in the region to adhere to the Barcelona Convention, it had introduced water treatment plants to protect the sea from pollution and avoided dumping industrial waste into the sea. It had established a public information system on the prevention of pollution and the protection of marine life, was taking action to protect river waters from salination and had designated a number of coastal areas as specially protected areas. In conclusion, he called for the development of peace, security and trust for all peoples in the Mediterranean, including the reinstatement of the rights of the Palestinian people in accordance with the relevant United Nations resolutions, as a prerequisite for an improvement in the environmental situation.

48. H.E. the Minister for the Environment and Land-Use Planning of **Tunisia** recalled that her country had been working within MAP for 25 years to develop an effective and efficient framework for North/South solidarity for the protection of the environment in the Mediterranean. But it was particularly over the past ten years that environmental policy had become central to the national development strategy and MAP's activities had become a national priority. Her country had made great progress in reducing land-based pollution, particularly through the installation of urban wastewater treatment plants. It had also established a national programme for the management of solid waste and was introducing a public system for the sorting and recuperation of packaging, particularly in plastic. A special fund had been established to control industrial pollution and major environmental projects requiring large-scale investment were being carried out along the coastline, particularly to improve the environmental situation of lakes and lagoons. Important projects to protect biodiversity, including the identification of more specially protected areas, were key elements in the Tunisian policy of the conservation of the Mediterranean biological heritage. Finally, a national emergency plan had been approved in 1995 for responses in the event of accidents resulting in pollution.

49. In recognition of the importance of a concerted global framework for environmental protection in the Mediterranean, Tunisia had been closely involved in the renovation and restructuring of MAP, including the revision of the texts of the Barcelona Convention and its Protocols and the work of the MCSD. It had developed a programme of activities with each of MAP's structures. In this respect, she paid tribute to the work of the Regional Activity Centres.

50. She emphasized that the programme of activities proposed by MAP for the biennium 2000-2001 was of great importance. In this regard, she called upon MEDPOL to place greater emphasis on promoting skills at the local and national levels for the surveillance of pollution levels and the identification of appropriate technologies. Blue Plan should endeavour to strengthen capacities for the development of indicators and national reports on the environment. PAP/RAC, which had developed excellent tools for the integrated and sustainable management of coastal areas, should continue to support their application, for example through pilot projects. SPA/RAC, which should be congratulated on the documentation produced for the Meeting, should give greater support to the countries of the South for the implementation of action plans, including the management and promotion of specially protected areas. She also thanked those countries which had supported the remote sensing and cleaner production centres and paid tribute to the work of REMPEC and 100 Historic Sites.

51. In conclusion, she reaffirmed that the Mediterranean required peace and security. A positive response should therefore be given to the request by the Palestinian Authority to participate in MAP's work. The Mediterranean people expected effective programmes and she called on all participants to respond to that call. Finally, she noted that her country would host

the delegates once again in 2000 for an in-depth examination of the strategic assessment of MAP and MCSD activities on the occasion of MED 21+5.

52. H.E the Minister of the Environment of **Turkey** congratulated MAP on its constant effort at renewal and the manner in which it kept abreast of topical subjects in time for the various global events. MAP was an exemplary programme at the global level. Based on its 25 years of experience, MAP now needed to prepare for the new millennium in a number of ways. It would need to strengthen its links still further with the United Nations Commission on Sustainable Development and develop the Barcelona system into an even more effective tool among Mediterranean countries. This would need to be based on the formulation of strategies defining the role to be played by each country and on greater efforts at the national level to ratify and implement the various instruments of the Barcelona system.

53. He recalled that his country would be proud to host the Seventh Meeting of the Mediterranean Commission on Sustainable Development in 2001. In this respect he emphasized the importance of selecting with great care the topics to be examined by the MCSD. These should include the response to natural disasters so that the countries in the Mediterranean region were better prepared to cope with their consequences. The importance of this subject had recently been demonstrated very clearly by the events in the Eastern Mediterranean. He also welcomed the proposals for the restructuring of MAP, which included greater collaboration with international financial institutions and broader consultation with civil society, to ensure that there was a broader basis of popular support for the relevant programmes.

54. He also welcomed the greater importance that was now being given to the protection and sustainability of biodiversity. As a country based in three distinct geographical areas, Turkey faced particular problems in this respect and was proud of the action that it had taken to protect marine turtles and monk seals. He called for a broader and more effective strategy for specially protected areas, including the development of inventories and other tools to enhance cooperation at all levels. The proposed regional activities centre in Turkey, for which the feasibility study had been completed, would play an important role in achieving greater public involvement through training and public awareness activities. At the threshold of the new millennium, his country hoped for a greener and more peaceful Mediterranean region.

55. H.E. the Under-Secretary of State of the Ministry of the Environment of **Italy** expressed his conviction that the Barcelona system could indeed achieve tangible results at the regional level. However, he was aware of the management difficulties within MAP, due essentially to the shortage of financial resources. He therefore recommended real cost-effectiveness and outcomes analysis for all activities, combined with a better utilization of MAP staff and regional activities centres. He also expressed appreciation of the new approach, which involved stronger cooperation with international organizations and other conventions with a view to greater synergy and reducing duplication.

56. With regard to the legal instruments, Italy had now ratified the amended Barcelona Convention and its Land Based Sources, Dumping Specially Protected Areas and Biodiversity Protocols and he hoped that they would enter into force in the very near future. For the implementation of these provisions, his country had adopted a series of measures. These included a new framework law on water and several special laws for the financing of wastewater treatment and site remediation programmes. The number of specially protected areas and marine protected areas was being increased, with the involvement of local communities. Important initiatives were being undertaken in the framework of two trilateral agreements: one

for the protection of cetaceans in the Corso-Liguro-Provençal Basin between France, Monaco and Italy and the other for the harmonization of protective measures in the North Adriatic Sea, with a view to its declaration as a particularly sensitive area between Italy, Slovenia and Croatia. A ban would be introduced at the beginning of 2002 on the use of pelagic driftnets for fishing and he expressed the wishes that this kind of measure will be followed not only by the Mediterranean EU Countries. Italy had also adopted preparedness measures, based on the 1994 Antalya Declaration, concerning emergency response in the event of spillages of oil and other hazardous substances.

57. He also drew attention to the need for action to combat soil degradation, deforestation and desertification, which were all covered by MAP Phase II. As present President of the UN Convention to combat desertification/Annex IV related to the Mediterranean, Italy was active in promoting the "ad hoc" action plan for combatting desertification in the Mediterranean Countries. He mentioned the necessity of setting up a network of existing national resources for cataloguing disasters, their environmental impact and emergency cooperation measures. The Ministry of the Environment in Italy had recently taken measures to set up a national observatory covering conventions and other international instruments of cooperation in the region, which would fulfill a clearing-house function for information, focus financial support, avoid duplication and monitor the implementation of Italy's commitments at the legislative and institutional levels. In conclusion, he hoped that his recommendations would be taken into account with a view to improving the Barcelona system and he guaranteed his country's collaboration in promoting its objectives.

58. The representative of **Greece** drew attention to the important progress made over the past few years in the implementation of the Barcelona Convention and its Protocols. He emphasized that the Mediterranean was a sea of history and civilization that required well-coordinated protection plans, implemented in a friendly and cooperative international environment, to support its fragile environment. Over its 25 years of existence, MAP had made a considerable contribution to: increasing knowledge of the common marine environment in the Mediterranean; creating and strengthening mechanisms for its protection; reducing the acute pollution affecting the area in the 1970s; and building a common understanding among all Mediterranean countries. This was of particular importance in view of the common dependence of the Mediterranean countries on tourism and the agricultural economy, and the high number of environmental problems facing the region.

59. He drew attention to the significant measures taken in his country to give effect to its environmental policy. These included the regular monitoring of a large number of sites, the development of a policy for the integrated environmental management of islands, a first identification of endangered species and habitats throughout the country and, in close collaboration with NGOs, internationally recognized exemplary work for the protection of the monk seal and sea turtles. In addition, his country had hosted important technical meetings on such subjects as caulerpa and the action plans for marine turtles and marine mammals.

60. Regarding the important issues before the Meeting, he said that, despite its national resource constraints, Greece supported the increase in the programme's budget and welcomed the new manner of presenting the budget activity by activity. The MCSD had carried out excellent work, but he emphasized the need for a serious discussion on how the MCSD's recommendations should be followed up before they lost their impetus and became obsolete. It would also be important to reach a decision, in accordance with the rules of procedure, on the date that the new Steering Committee would be elected. On the subject of collaboration with NGOs he believed international NGOs should function as focal points for their member organizations and that they should play a very important role in disseminating information on MAP activities to other NGOs and the public at large.

61. Finally, he re-emphasized the importance of the ratification and full implementation of the revised instruments in the Barcelona system and noted that his country's instruments of ratification would be transmitted to Parliament in the near future. The delay had been due to the decision to submit all the instruments for ratification at the same time. In conclusion, he assured the Meeting of his country's commitment to contributing to the protection of the common Mediterranean heritage and its sustainable development.

62. The representative of **Albania** said that his country had approved its National Environmental Action Plan in 1994, but the rate of implementation of the activities under the plan was related to the development of the country. Contemporary developments and policies on the European and global levels, as well as the new institutional status of the National Environment Agency (NEA), under the control of the Council of Ministers, required the updating of the Plan. That activity was under way, funded partly by the Phare Programme and partly by the World Bank. The priorities for immediate action included institutional strengthening, completion of the legislative framework, introduction of economic instruments, natural resource management, public awareness and participation, and development of local environmental action plans.

63. The NEA was currently working for the drafting of new laws and regulations, particularly pertaining to air and water quality, biodiversity conservation, a national environmental fund and waste management. A draft law on protection of the marine environment had been prepared in line with the requirements of the Barcelona Convention. In addition, Albania had started procedures for the ratification of the amendments to the Barcelona Convention and expected to ratify its Protocols by the end of the current year.

64. Albania had prepared its national monitoring programme according to site-specific trend monitoring on the Adriatic coast. Development of the programme had revealed an urgent need for it to be assisted by provision of financial support and up-to-date laboratory equipment.

65. Like others, Albania played a role in the elaboration of the GEF project to determine priority actions for the elaboration and implementation of the Strategic Action Programme for the Mediterranean. Within the framework of that project, which reflected the national needs and priorities of countries, Albania called for special attention, since its institutional structures and legislative framework were still weak. The country also called for special attention and assistance from the Regional Activity Centres in the implementation of the action plans that had been developed by MAP for the protection of certain species of Mediterranean flora and fauna.

66. The representative of **Algeria** said that his country, like other developing countries, faced the challenges posed by globalization, the problem of the external debt and the constraints of readjustment policies. Nevertheless, the country had put in place major institutional arrangements charged with environmental issues at ministerial level. It had rationalized and adapted the framework law for environmental protection in line with socio-economic developments and the evolution of environmental regulations and laws. And it had prepared a draft National Environmental Action Plan, integrated into the projected social and economic development of the country. For Algeria, the priorities lay in the management of water resources; control of land-based pollution and the struggle against erosion and desertification; the management and recycling of industrial and urban waste; integrated coastal zone management; conservation of biological diversity; and preservation of natural areas and habitats. Those priorities implied the urgent implementation of the National Environmental Action Plan; the establishment of a national environmental monitoring and evaluation network, using reliable data and performance indicators; and the strengthening of mechanisms for public awareness and information, research and training.

67. Algeria currently sought to set up the appropriate institutions, in line with the requirements of MAP, to enable the attainment of sustainable development. In that context, he wished to thank MAP and particularly its Regional Activity Centres and the Blue Plan, for the assistance provided.

68. Although Algeria's priorities were in harmony with the MCSD programme, there was a problem with respect to transfer of technology, particularly in view of the diversity of landscapes of the different Mediterranean areas and the glaringly different levels of development of the countries bordering it. Such a transfer was not just a simple movement of equipment, but required the appropriate structures and adequate regulations in the receiving country, as well as qualified human resources. The rapid and effective implementation of such measures called for sustained cooperation, and in that connection Algeria was working towards broader cooperation in the regional exchange of data and experience and the transfer of technology. In addition, it was proposed to set up a national centre for awareness-raising and outreach. In conclusion, the representative of Algeria invited all those involved to provide their support, as a testimony to true Mediterranean solidarity.

69. The representative of **Croatia** reported that her country had ratified the amendments to the Barcelona Convention and the Dumping Protocol and was in the process of preparing to ratify the SPA and Biodiversity Protocol. Croatia also supported the development of the MAP information strategy, the raising of public awareness and public participation in matters related to protection of the Mediterranean environment.

70. Within the framework of the trilateral commission among Croatia, Italy and Slovenia for the protection of the Adriatic, activities had been aimed at strengthening regional cooperation to apply integrated coastal management. Croatia had also developed a Biodiversity Strategy and Action Plan and was currently preparing the Environmental Strategy and the National Environmental Action Plan. It had also prepared a comprehensive monitoring programme for the Adriatic, parts of which were included in MEDPOL II. Together with the United Nations Economic Commission for Europe (UN/ECE) the State Directorate for the Protection of Nature and Environment had prepared an Environmental Performance Review for Croatia, which also covered issues of marine protection and made recommendations for further protection activities.

71. In conclusion, she said that the new era within Map Phase II gave an opportunity for open dialogue and consultation, among all relevant partners, on policies for promoting the sustainable development of the Mediterranean basin and to harmonize activities to improve its environment.

72. The representative of **Cyprus** said his country was currently finalizing a five-year National Environmental Action Plan. Issues of particular concern included integrated watershed and coastal zone management, water recycling, waste management, assessment of the impact of tourism, monitoring and control of marine pollution, and sustainable exploitation of fishery resources. In tackling the issues, Cyprus was giving priority to the institutional framework for environmental planning, appropriate legislation, policy coordination and strengthening actions and processes for the various sectoral problems. Areas subject to great pressure, such as cultural preservation and protection of wild land and habitats, were at the focus of attention. Conservation of biological diversity was receiving special emphasis through the protection of endangered species and habitats, the establishment of reserves and the conservation of genetic resources. Cyprus welcomed the new SPA and Biodiversity Protocol and was in the process of preparing its ratification. Drawing attention to the need to protect the Mediterranean Sea from pollution and the coastal areas from degradation, he pointed out that 55 per cent of the coastal area of Cyprus was under occupation and therefore out of the control of the Government.

73. Cyprus had signed and ratified the Barcelona Convention and its four Protocols and was in the process of ratifying the Offshore Protocol. The amendments to the Barcelona Convention and the Dumping Protocol had already been endorsed by the Council of Ministers and would soon be sent to Parliament for ratification. He looked forward to the ratification of the Offshore and Hazardous Wastes Protocols and the amendments to the LBS Protocol.

74. Under MAP, Cyprus had been greatly assisted in setting up its marine pollution monitoring system. The MEDPOL Programme was a guiding light in the country's efforts to assess and control marine pollution. Cyprus had consistently participated in the activities of REMPEC. The agreement among Cyprus, Egypt and Israel concerning the Subregional Contingency Plan for Preparedness and Response to Major Marine Pollution Incidents in the Mediterranean had been endorsed by the Council of Ministers and had already made concrete progress. He wished to thank REMPEC for its efforts in realizing that agreement and the European Union for financing the project that made the agreement possible.

75. Cyprus had been closely cooperating with RAC/SPA in the conservation of marine habitats and species, in particular concerning the Mediterranean monk seal and marine turtles. Since 1989, Cyprus had been holding training courses in marine turtle conservation techniques for MAP-sponsored trainees from other Mediterranean countries. He looked forward to the implementation of the revised Action Plans for marine turtles and marine mammals that were before the meeting for adoption.

76. The representative of **France** said that a historical view of the last 25 years, aided by the Blue Plan's work on indicators, showed the far-reaching changes that had taken place in the Mediterranean area. There had been improvements in the lives of the people, but there were also increasing problems such as pollution from coastal towns where 50 per cent of effluent was untreated; atmospheric pollution in urban agglomerations, 80 per cent of which lacked measuring instruments; biological diversity, which badly needed the support of GEF; and poor management of water resources. MAP was still inadequately tapped into national policies. Such policies would benefit from drawing on MAP's analyses and *vice versa*. Much remained to be done to make common action effective. Progress had been made, and in that connection he thanked the Coordinator and the RACs. He trusted that the new functional chart would help to set the tasks more precisely. Much had to be done to involve the whole of civil society in the work of MAP, as well as the multilateral partners at the regional level, such as World Bank GEF, METAP and CEDARE. The EuroMed partnership was taking off and countries could count on the support of France, which in the mid-2000 would assume the Presidency of the EU, to help to strengthen the partnership and to help align its activities with those of MAP.

77. While thanking the Coordinator for the documentation before the current meeting which set out the financial support received, he considered that the accounting tables should be more specific for each topic. He also believed that all external funding should be better utilized and that proper attention should be given to all types of voluntary contributions.

78. Concerning prevention of pollution, MAP and MEDPOL had set up an operational programme, which France had supported through the FFEM. He had high hopes for the project and said it should be launched rapidly. In the Mediterranean region, countries had to be alert to natural disasters and in that connection he welcomed and supported the Italian initiative to set up a network on the subject.

79. Stressing the importance of signing, ratifying and applying the conventions and Protocols that had been prepared, he said that the French Council of Ministers had just approved four draft laws for ratification of the amendments to the Convention and the LBS, Dumping and SPA and Biodiversity Protocols. He hoped that, with the entry into force of the SPA and Biodiversity

Protocol, there would be an increase in the specially protected areas of the Mediterranean. He wished to echo the views expressed by Italy and Monaco concerning the establishment of a marine sanctuary among the three countries and hoped that the sanctuary would constitute the first Specially Protected Area of Mediterranean Interest (SPAMI). He was confident that RAC/SPA would be up to the task of preparing a strategic programme on biodiversity and announced that France would provide support for the organization of the regional workshop on marine and coastal habitats during the coming biennium. He underlined the importance of considerations related to funding the protection of nature through tourism.

80. Concerning sustainable development, he considered that there should be a clear indication of the priorities of the MCSD for the coming biennium and the follow-up mechanisms for its proposals. In the context of sustainable development, he drew attention to the creation of a free-trade area in the Mediterranean and to the need to link the work of MAP with Euro-Mediterranean cooperation, which he considered decisive. The free-trade zone planned for 2010 had to take account of its impact on the environment and on public finances. It was necessary to look more closely at aspects of NAFTA, and to follow the developments in WTO and the context of globalization. The common aim was ultimately to create not just a free-trade zone within the Mediterranean, but a Mediterranean area of cooperation, exchange, social justice, culture and peace.

81. The representative of **Egypt** pointed to the need for more concerted efforts to overcome the challenges and threats and to enhance the quality of the Mediterranean environment, and the need to develop performance indicators to quantify the achievements. With assistance from MAP and MEDPOL, countries had achieved their goals in conducting baseline studies and formulating the national and regional databases. The challenge now was to use science and technology not only to safeguard, but also to enhance the quality of the environment.

82. He welcomed the planned activities of MAP, MEDPOL Phase III and expressed appreciation for the work of the Regional Activity Centres. He believed it was preferable to maximize the use of the countries' potential and existing institutional structure, rather than direct the limited resources to establishing more centres. He wanted more coordination and integration among environmental bodies in the Mediterranean, since the financial and human resources were still limited. While MCSD activities had been an essential step in linking sustainable development and environmental issues and in revitalizing the Barcelona Convention, he believed that there should be no geographic limit or boundary for the sustainable development of one basin. The subregional initiatives for sustainability in the North or South were merely artificial, and only joint efforts would achieve the common goal to enhance Mediterranean security in the new millennium. He considered that a mechanism needed to be set up for early detection, inspection and investigation that would guarantee a safe boundary for each individual country and for the Mediterranean as a whole.

83. The representative of the **European Community** announced that the European Community had approved the amendments to the Barcelona Convention and the revised LBS, Dumping and SPA and Biodiversity Protocols. He hoped that the Community's ratification would serve as an encouragement to those countries that had not yet done so to ratify the instruments as soon as possible.

84. The European Community's experience with its own Environmental Action Programme had shown the importance of three policy questions, namely, integration, implementation and information.

85. Integrated planning of the development and management of resources had long been a key concept within MAP. Involving all actors in order to bring about change was not an easy task because they tended to have different priorities. MAP, and particularly the MCSD, could become an effective mechanism linking activities that would otherwise be fragmented. Integration should not only be at the national and local levels, but also at the international level. The European Commission was conscious of the need for synergy between the activities of the EuroMediterranean partnership and MAP and for operational cooperation with the relevant bodies of other conventions.

86. Implementation would have to receive increased attention in the future. There was little benefit in having a comprehensive legal and institutional framework if implementing legislation was not in place or not adequately enforced. The European Commission, through its voluntary and project funding contribution, was prepared to assist in capacity-building, training and the development of technical expertise in many areas, including environmental impact assessment, in order to facilitate implementation and enforcement.

87. A stronger information policy was of crucial importance to the success of MAP, whose achievements should be made better known. The European Commission had recently hosted a large meeting to present 150 projects and action for nature conservation and sustainable development funded under the LIFE programme. Similar events could be envisaged under MAP and EuroMediterranean partnership.

88. Another member of the delegation of the European Community, referring to the European Environment Agency (EEA), explained that the Agency was one of the European Community's decentralized agencies set up as an independent entity to serve the Commission and the Community in general, as well as Member States, by providing the best available information on the environment, as well as sustainable development, so as to enhance decision-making, public information and participation.

89. Together with MAP, the EEA had prepared a report on the state and pressures of the marine and coastal Mediterranean environment, which showed that the open waters were generally in a good state and most of the diverse ecosystems appeared healthy. On the other hand, continuously increasing pressures resulting from abusive non-sustainable coastal development were affecting the general functionality of the Mediterranean Sea, not only in environmental terms but also its ability to support socio-economic activities and enhance the quality of life. The creation of pollution "hot spots", eutrophication, microbial contamination and concentrations of heavy metals and organochlorine compounds were problems that had to be addressed.

90. While the sea itself was in a reasonable state, only a minor percentage of the coastal area remained in a satisfactory condition as a result of population increase and the growth of tourism. Only a small part of the coast was protected and man and nature competed for space, territory and resources in one of the world's most sensitive areas.

91. There was obviously a need for better information to make policies more effective and politicians more accountable and to ensure that decision-makers took into account the sustainability perspective. The potential gain of taking appropriate measures was immense because, if properly used, the Mediterranean could provide the basis for diversified economies in the basin and a better quality of life, while at the same time retaining a unique Mediterranean identity.

92. Unfortunately, the potential and opportunities were being neglected and degradation of coastal areas continued. Too much untreated wastewater and too many toxic substances continued to be discharged into the sea. Biodiversity was increasingly threatened by the

elimination of rich coastal biotopes, the introduction of exogenous fauna and flora, the over-exploitation of fisheries resources and scraping of the seabed. He emphasized that the state of the Mediterranean sea and basin depended on rational use of the coast. He urged Ministers and delegates to cease thinking that the problem was the Mediterranean sea in general and that others were to blame. It was time to assume responsibility, look at the coast and halt the uncontrolled and mostly speculative coastal developments in order to ensure that the Mediterranean basin remained a treasure for now and for future generations.

93. A proper common framework for integrated coastal management had to be developed and more operational assessments from the EEA and MAP would be required for that purpose. If resources were provided, a report outlining medium-term prospects and scenarios could be available well before the Rio + 10 Conference in 2002 to serve as a basis for a real and feasible Mediterranean strategy and plan for sustainable development, with related mechanisms, indicators and targets. The EEA was prepared to embark on the task, in partnership with MAP.

94. The representative of **Israel** emphasized that it was the responsibility of decision-makers in both the public and private sectors to ensure that, at a time of intensive economic growth, development did not harm the Mediterranean's fragile environment. The majority of Israel's population lived close to the coast, its beaches and marine and coastal reserves were major tourism assets, so Israel made intensive efforts to protect the marine environment from pollution.

95. He reviewed some of Israel's recent successes in combating marine pollution and said that the sub-regional contingency plan for major oil spills, involving Israel, Egypt and Cyprus, continued to be a success. Palestinian counterparts had been invited to attend the next oil spill combat exercise to take place in November 1999 in Haifa bay.

96. At recent MAP meetings, Israel had proposed taking up the issue of marine and coastal litter on beaches. Its suggestion had met with support and an action plan within the framework of MAP would be needed to tackle the problem.

97. As the CAMP for Israel moved towards its closing stages, Israel wished to express its appreciation of the input and expertise received from MAP and the RACs. The results of the project would be presented to the MAP CAMP team in Spring 2000. The CAMP had been successful in establishing a process that would act as a catalyst for future activities. Israel hoped that the experience it had gained could be beneficial to other countries in the region.

98. Noting the expansion of sustainable development-related activities, he said that Israel would prefer to see MAP focus its attention on its primary role of protecting the Mediterranean Sea from pollution and devote its budget to its core activities. Israel supported a four-year strategic review of the principles of the Agenda MED 21 programme and an evaluation of the action taken. It would also like to see a review of the contribution made by the Mediterranean Commission on Sustainable Development since its inception. In looking forward to economic expansion and development, it was imperative to establish the mechanisms which ensured that any development was sustainable. Israel was always prepared to share its expertise with other countries of the region.

99. He concluded by calling on Syria and Lebanon to join Israel in promoting important environmental projects and in the exchange of information and expertise.

100. The representative of **Lebanon** said that his country had one of the shortest shorelines in the Mediterranean region and had long since made a commitment to the protection of the environment. The American University of Beirut for instance, had been awarding degrees in

environmental health since the early 1970s and four other universities were now offering degrees in environmental and development sciences. Furthermore, environmental education was a mandatory subject in schools. Another significant fact was the maintenance of the Ministry of Environment following the restructuring of the Lebanese public administration.

101. Since it was impossible to eliminate environmental risk entirely, the only solution was to learn how to integrate with the environment. Humans were an integral part of nature and had a duty to hand it on unspoilt, if not improved, to future generations. As a result, major challenges had to be faced, largely in relation to channels of communication. Unless helpful, readily comprehensible information was made available, misunderstandings arose and progress on the environmental front came to a halt. What was needed was a common vision, leading to an improvement in public and environmental health.

102. The Lebanese Government's vision was governed by six main rules. First, reference agencies should accept and involve the public as a legitimate partner. Second, careful planning and performance evaluation were essential, making use of any mistakes as lessons for the future. Third, every effort should be made to listen to the audience. Fourth, the importance of honesty, frankness and openness had to be recognized, since they were the key to success. Fifth, intra- and inter-governmental coordination and collaboration should be promoted, and sixth, attention should be given to the needs of the media, the major transmitter of information to the general public.

103. Lebanon wished to share its vision with all Mediterranean countries, the MAP Secretariat, the Regional Activity Centres and other organizations with a view to establishing and maintaining partnership.

104. The representative of **Morocco** noted that, despite the efforts made, much remained to be done to achieve the objectives fixed by the Contracting Parties. There had been successes, for example, the creation of a unique mechanism for solidarity among Mediterranean countries, the monitoring and evaluation of the Mediterranean under MEDPOL, the establishment of specialized regional centres, the formulation of Protocols, the creation of the MCSD, and the involvement of NGOs as an aid to decision-making. On the other hand, the revised Protocols still had to be ratified by many Contracting Parties, specific programmes and concrete measures had to be adopted in order to enhance MAP's credibility, information and training programmes had to be developed, the functioning of the Coordinating Unit had to be improved and the concept of sustainable development had to be applied.

105. Morocco, like other Mediterranean countries, had been confronted with the difficult task of achieving a balance between the right to development and the need to protect the environment. It had carried out studies and evaluations of certain aspects of the environment, put into effect plans to protect the environment at various levels, set up specialized bodies, taken action to deal with liquid, solid and industrial wastes, with the participation of the private sector. Legislation had been adopted in a number of areas, awareness and training programmes had been directed at different sectors of the population, partnerships had been developed among the authorities, the private sector and NGOs for the implementation of joint projects, and the industrial sector had received assistance in limiting pollution. A number of concrete measures had been taken at the grassroots level.

106. Two of the major obstacles to better environmental protection were present modes of consumption and production, which made some countries richer and others, particularly developing countries, poorer. The new free trade and other agreements that governed international relations today did not take sufficient account of environmental concerns. The

failure to introduce the changes called for by sustainable development meant that the concept remained without substance.

107. The responsibility of developing countries for environmental pollution was minimal, but they were being asked to conform to rules and values imposed by developed countries. This had a significant impact on poverty in such countries because they did not have the financial resources needed to combine development and environmental protection. The financial mechanisms established were inadequate and the eligibility criteria were not transparent. The terms for cooperation in this area were the same as those used for conventional cooperation, whereas a new area called for a new approach.

108. She urged Contracting Parties to make every effort to overcome indifference and become more dynamic and more vigilant. The Mediterranean basin had always been in the vanguard of the search for solutions and it could once again be the catalyst so that the problems to which she had referred could be overcome.

109. The observer representing the **Ramsar** Convention recalled that over the past 25 years the focus of activities to implement the Convention had changed from the birds and other species which used wetlands, to the sustainable use of wetlands and to the role of wetlands in the water cycle and in climate change. All of the activities in the Mediterranean for the implementation of the Convention were covered by the MedWet programme, which benefited from the collaboration of all Mediterranean countries and the European Union, as well as the secretariats of three international Conventions and NGOs. Its activities consisted of the development of methodological tools and their application on certain sites. The latest programme to be launched covered the countries on the Southern and Eastern Mediterranean coastlines. There was strong collaboration between MAP and MedWet and, following a meeting held in February 1999 in Tunis with SPA/RAC to plan future collaboration, it was hoped that the two secretariats would collaborate even more closely in future.

110. The observer representing the International Maritime Organization (**IMO**) stressed that current concerns with sustainable development and globalization demonstrated the importance of trade, and particularly transport, as a factor of development. In this respect, maritime transport played an important role in national economies, but also constituted a risk for the marine environment. In the Mediterranean region, there were operational pollution from ships and maritime pollution accidents. Particularly in view of the relative weight of the tourist industry in Mediterranean economies, such an accident could have a major effect on national development. IMO, as the specialized agency of the United Nations competent in this field, established international regulations for maritime safety and the protection of the marine environment. Issues of concern included the harmful effects on the environment of anti-fouling paint used on ships, harmful organisms carried in ships' ballast and the identification and protection of special areas and particularly vulnerable areas, which were currently being discussed within the Marine Environment Protection Committee of IMO.

111. Since the establishment of the Regional Seas Programme, IMO had cooperated with UNEP in the implementation of the Programme's component related to the control of pollution sea-based activities. The IMO's strategy for the protection of the marine environment included regional cooperation for the effective implementation of global IMO conventions. MAP and REMPEC constituted models for other regional seas programmes. REMPEC was an essential tool in the development and maintenance of national and regional systems to combat accidental marine pollution. The extension of REMPEC's mandate as decided at the previous Meeting of the Contracting Parties, would require the provision of adequate resources for its operation. IMO also looked forward to the revision of the Emergency Protocol. IMO was prepared to

reinforce its cooperation with MAP, as it had done through its contribution to the strengthening of REMPEC's staff and its support for REMPEC through the project financed under the IMO's technical cooperation programme, particularly in North African countries. However, he called upon the Mediterranean countries to make personnel available to REMPEC. Finally, he thanked various donors to REMPEC, including the oil industry and the European Union.

112. The observer representing the World Health Organization (**WHO**) conveyed a message from the Director-General, Mrs Bruntland, better known in environmental circles as the author of the sustainable development concept. She supported intensified collaboration between WHO and UNEP and, as a first step in this direction, the two agencies had recently signed a new collaboration agreement. WHO believed that the excellent work carried out in the Mediterranean in the context of the MEDPOL programme for protection against pollution should be supported through stronger collaboration with all interested parties. The objective of this collaboration would be to achieve the objectives of sustainable development, through which a clean environment would contribute to the improvement of health, the development of tourism and overall economic prosperity in the region.

113. The observer representing the Mediterranean Technical Assistance Programme (**METAP**) referred to the progress made in its collaboration with MAP, but he recalled the difficulties encountered in obtaining resources to cover METAP's participation in the implementation of the Strategic Action Programme. These difficulties had been overcome when the METAP Steering Committee had agreed to allocate one-half of the necessary resources, whereas GEF had recently agreed to provide the other half. He therefore looked forward to continued collaboration in the implementation of the Strategic Action Plan, which would entail close cooperation with the countries in which environmental "hot spots" were located.

114. The observer representing the International Atomic Energy Agency (**IAEA**) reaffirmed the commitment of IAEA to inter-agency marine programmes and emphasized the importance attached by the Marine Environmental Studies Laboratory (MESL) to its collaboration with MEDPOL. Over the past two years, changes in the Laboratory in Monaco had made it more effective in serving the needs of Mediterranean countries and other United Nations agencies. The facilities of the Laboratory had been improved, particularly with the support of Monaco, and it was now much better equipped to host training courses and small meetings. The International Symposium on Marine Pollution was held in October 1998 to inaugurate the new facilities.

115. MESL provided support to MEDPOL in a number of ways. These included training courses for the analysis of metal pollutants and organic contaminants, inter-comparison exercises for metallic and organic contaminants, quality assurance missions, capacity building, support for the purchase of equipment and chemicals, and the supervision of research activities. Many of the other activities of IAEA were also of interest to MEDPOL, including the initiative on pollution monitoring in the marine environment, which consisted of a technical cooperation project with five North African countries to develop their capacity to measure pollutants, including radionuclides, in the coastal and oceanic environment. This IAEA project would undoubtedly complement MEDPOL's activities in the Southern Mediterranean.

116. Speaking on behalf of Mediterranean **NGO networks**, the observers representing the Mediterranean Information Office for Environment, Culture, and Sustainable Development (MIO-ECSDE) and the Mediterranean NGO Network for Ecology and Sustainable Development (MED Forum) described the outcome of the NGO Preparatory Conference which they had organized jointly in Malta prior to the present Meeting. The NGO participants had expressed solid support

and commitment to the Barcelona Convention. However, they conveyed their concern at the low rate of ratification of the revised Convention and its Protocols, as well as at the somewhat "ad hoc" relationship between the Barcelona Convention and the so-called "Barcelona process". The role of the Convention should be further strengthened within this process and particular attention should be placed on following up the recommendations of the MCSD. The participants were particularly concerned by the lack of knowledge and studies concerning the environmental and social effects of the proposed Mediterranean Free Trade Zone.

117. The statement adopted by the Conference was presented to the Meeting. Firstly, the NGOs reaffirmed their strong support for the Barcelona Convention and, therefore, their deep disappointment at the slow pace of ratification of the amended Convention and its Protocols. They called for the completion of the ratification process by 5 June 2000. They also urged the adoption of an effective UNEP-MAP communications strategy, including a key role for NGOs, to increase the visibility of the Convention. They sought the full involvement of civil society in the implementation of the 2000-2001 programme and budget. They also urged the Contracting Parties to implement immediately the commitments under the Strategic Action Programme to combat pollution by land-based sources and to establish a list of at least 100 specially protected areas by 2002. They recommended the work of the MCSD as a model for the participation of civil society, which should be fully reflected in the decisions of the Contracting Parties and, wherever appropriate, in other regional forums. They recommended that similar participatory processes be introduced and/or strengthened at the local, national and regional levels. Finally, they urged the Contracting Parties to take all necessary action to ensure that the provisions of the Barcelona Convention and its Protocols were taken fully into account in all procedures and agreements relating to the establishment of the Mediterranean Free Trade Zone (MFTZ) and that sustainability impact studies be undertaken of the MFTZ and fully reflected throughout the EuroMediterranean process.

118. The observer representing **MIO-ECSDE** expressed pessimism that, after so many years, the environmental situation in the Mediterranean had not improved and that new problems continued to emerge. Clearly, the Barcelona Convention had slowed down the pace of environmental destruction in the region, which had peaked in the late 1960s and early 1970s. It had helped to raise public awareness, although it had not changed the political framework or the major policy priorities of the Contracting Parties.

119. He reviewed the involvement of NGOs in the environmental process in the Mediterranean over recent years. In the beginning, their role had been very small. But gradually, over the years, NGOs had come to be associated much more closely with the work of the Barcelona system. This involvement in the Barcelona Convention had provided a momentum and over the past biennium MIO-ECSDE had expanded its membership and activities. Its network now included such large organizations as the European Environmental Bureau (EEB) and the Arab Network for Environment and Development (RAED). MIO-ECSDE now participated actively in all the work of MAP and the MCSD, where it had acted as task manager of the thematic group on information, awareness, environmental education and participation.

120. MIO-ECSDE had also become more active in organizing many meetings and workshops and issuing a large number of publications and newsletters to disseminate information on sustainable development in the Mediterranean. It had undertaken several successful capacity-building activities with the support of the European Union, as well as a research project on the design of sustainability plans for tourism on the island of Rhodes, based on participatory mechanisms. The next in a series of important meetings was the conference on municipal waste and marine litter in the Mediterranean and Arab regions, which would be organized jointly with RAED in Cairo in December 1999. He thanked those who contributed to MIO-ECSDE so

that it could give its time and expertise for the benefit of the Mediterranean and its peoples, and particularly for future generations.

121. The observer representing the Arab Office for Youth and Environment (**AOYE**), an NGO which operated at the national level in Egypt and at the Arab regional level, described the activities it had undertaken to raise awareness of environmental problems in the Mediterranean, particularly through the publication of a magazine that was widely disseminated. It operated with support from MAP and the Arab League and he reaffirmed the need to support NGOs so they could play their important role in increasing popular participation in the design and implementation of environmental programmes. He emphasized the importance of the conference to be held in Cairo in December 1999 in drawing attention to the environmental problems in the region and in focusing on communication as an indispensable tool for environmental improvement. His organization would continue to promote the implementation of the Barcelona Convention and its Protocols and endorsed the calls made by previous speakers for great efforts to be made for their rapid ratification.

122. The observer representing the World Wildlife Fund (**WWF**) joined with other speakers in calling for the very rapid completion of the ratification process of the revised Convention and its new and revised Protocols. He congratulated Monaco and Tunisia on being the first countries to ratify the instruments and welcomed the information provided on the progress made in such countries as Malta and Italy. He also welcomed the progress made in revising and improving action plans under the Protocols, particularly for the conservation of species, the classification of marine habitats, the determination of criteria for biodiversity inventories and the proposed action on marine vegetation. Good progress had also been made in improving cooperation and coordination for the implementation of the LBS Protocol.

123. However, he drew attention to an important pollution problem, namely the use of TBT (organotins) in anti-fouling paint for ships. TBT caused harm to many marine invertebrates and was toxic for fish, seabirds and marine mammals. Its endocrine disrupting effects, through the contamination of marine species used for human consumption, were already threatening some coastal areas. WWF therefore called upon governments in the region to introduce legislation for the earliest possible ban on the use of organotins as anti-fouling agents for ships and boats. Alternative paints were already available.

124. Finally, he expressed great satisfaction at the imminent creation of the cetacean sanctuary in the Sardo-Corso-Liguro-Provençal Basin. He added that, bearing in mind the technology available on the threshold of the new millennium, delegates should be given the possibility of using slides to improve their presentations at MAP meetings.

125. The observer representing **MED Forum** said that, after 25 years, the time had come for the consolidation of the legal framework of the Barcelona Convention and for the application of the Strategic Action Programme to improve the environment in the Mediterranean. In 1998, 100 NGOs had met together in Barcelona and launched a campaign for the ratification of the revised Convention and its Protocols. He believed that this campaign had increased awareness of the instruments and had helped to convince governments of the need for their ratification. However, a major effort was still required by many Contracting Parties to complete the process and start the new millennium on the right footing. The implementation of these important instruments would also require much greater effort in the allocation of resources and in the broader participation of civil society. Through MED Forum, some 90 NGOs from countries round the Mediterranean offered to participate in this common task.

126. MED Forum was endeavouring to put forward concrete proposals, for example through its collaboration with the MCSD. It had also organized meetings of NGOs in the Mediterranean and seminars on good practices in combating desertification. These activities were supported by cooperation projects in several countries and the formulation of a regional project to combat desertification. With support from the European Union and other donors, awareness campaigns were being undertaken, particularly for the development of responsible tourism in the context of the sustainable development of the Mediterranean. One activity in this framework was being held during the present meeting of the Contracting Parties as part of the ULIXES 21 Project. All NGOs wished to broaden participation to include other partners, such as local administrations and socio-economic actors, with the fundamental objective of improving environmental protection of the Mediterranean.

127. The observer representing **Greenpeace** expressed great disappointment at the very little progress made over the years in combating environmental problems in the Mediterranean. It was clear that the signatories had been aware of the situation for the 25 years of the life of the Convention. They should long ago have taken action without having to wait for the Convention to become a legal instrument.

128. Another observer representing Greenpeace drew attention to one particular environmental problem in the region, namely the presence of dioxins. Dioxins were a global threat which were increasingly found in the Mediterranean. Greenpeace had issued a publication entitled *Dioxin elimination: A global imperative*, which set targets and identified strategies for the elimination of dioxins in the region.

129. Dioxins were ubiquitous global contaminants which migrated over boundaries and through different ecosystems. They were very toxic, persistent and bioaccumulative, but had no natural sources. The elimination of dioxins was one of the major challenges ahead. The Barcelona Convention made provision for the reduction of the 12 priority POPs. The primary sources of dioxins included the processing of municipal waste, the processing of secondary metals, the incineration of medical waste and accidental fires in landfills. In order to eliminate them, a baseline inventory would need to be undertaken of sources and mass balances of dioxins in the Mediterranean. Global solutions, and not merely the reduction in dioxin levels, needed to be achieved through product and process substitution and clean production initiatives. In particular, a greater commitment was needed to implementation of the Barcelona Convention and its Protocols, which must not be allowed to become empty rhetoric.

130. The observer representing **Friends of the Earth** explained that the combination of experts and activists in his NGO was unique. He endorsed all the statements made by other NGOs on the need to ratify and implement the Barcelona Convention and its Protocols. He also drew attention to two developments. The first of these was the proposal to introduce an eco-tax in the Balearic islands in Spain. A tax of this type would be essential to promote the sustainable development of the tourism sector. The implementation of environmental programmes required additional resources and he therefore hoped that other countries would consider this source of revenue. On the subject of the Mediterranean Free Trade Zone, he urged Ministers of the Environment to wake up to the great risks involved. The proposed reduction in taxation would hit environmental programmes very badly and would be detrimental to the implementation of the Barcelona Convention. Moreover, there was a serious risk that heavily polluting industries would move south to benefit from the more relaxed environmental rules in the south of the Mediterranean. His organization published a monthly Internet magazine on this subject and was very active in raising awareness of the issue. Finally, he hoped that the Contracting Parties would give due consideration to the request made by Friends of the Earth to be represented on the MCSD.

131. The observer representing **EcoMediterrània** warned that greater efforts in the field of information and communication were required to ensure that the Barcelona Convention was better known by the general public. He therefore welcomed the development of an information strategy for MAP. However, the proposed strategy was rather conventional and consisted mainly of disseminating information on MAP activities, rather than drawing attention to the problems of the Mediterranean. Although the proposed budget for this activity appeared adequate, MAP should make use of its partners to implement a more aggressive and imaginative information strategy.

132. Secondly, he recalled that the participation of NGOs in the activities of MAP was exemplary and should be followed in other forums. However, improvements could still be made, particularly in terms of the budget allocated and the activities undertaken to strengthen the capacities of Mediterranean NGOs through joint projects and programmes. NGO participation should not be limited to attending meetings, but should also include more practical activities. Finally, as an NGO based in Spain, he called upon the Spanish Government to play a more dynamic role in the ratification and implementation of the instruments for which it was the depositary.

133. The observer representing the International Marine Centre (**IMC**) explained that, over the past decade, IMC had developed research and training activities to improve understanding and protection of the Mediterranean, particularly in partnership with major public research organizations, private partners, MAP and GEF. However, she expressed surprise that few speakers had drawn attention to the importance of science as a tool for the protection of the Mediterranean. Closer cooperation was required between environmental and scientific authorities to provide a sound basis for the implementation of the Barcelona Convention. The Med GOOS (Global Ocean Observation System) was one initiative designed to promote such cooperation. Med GOOS had been launched in 1997 and would discuss its implementation strategy at a meeting to be held in Morocco in November 1999. She looked forward to greater cooperation between Med GOOS and MAP in the future.

Agenda item 8: Proposed recommendations and programme budget for the 2000-2001 biennium and contributions by the Contracting Parties to the Mediterranean Trust Fund (MTF) for the 2000-2001 biennium

134. At the suggestion of the Chairperson, the participants decided to examine the proposed recommendations and programme budget for 2000-2001 (UNEP(OCA)MED IG.12/3) chapter by chapter.

135. The Meeting congratulated the Coordinating Unit and all the Regional Activity Centres for the quality of the work carried out so far and planned for the future.

A. Legal and institutional framework

A.1 Legal framework

136. The Coordinator first introduced the recommendations addressed to the Contracting Parties, drawing particular attention to the need for a meeting of plenipotentiaries to adopt amendments to the Emergency Protocol, and then the recommendations addressed to the Secretariat, highlighting the issues of the reporting system and the convening of a second meeting of legal and technical experts on liability and compensation.

137. The Meeting approved the recommendations, with a minor amendment, together with the related programme budget for 2000-2001 (Annex IV).

A.2 Institutional framework

138. The Coordinator drew attention to the proposed functional chart which was requested by UNEP. He introduced the three recommendations which concerned a joint meeting for BP and PAP national focal points (paragraph 1), the relevance and role of the 100 Historic Sites programme (paragraph 2) and the process of programme assessment and financial evaluation of MAP and the Regional Activity Centres (paragraph 3).

139. In the course of the discussion of the recommendation in paragraph 1, it was recalled that it had been proposed at the National Focal Points Meeting held in Athens in September to add ERS/RAC to the other two centres. One speaker suggested that in the interest of making savings the joint meeting could be held in conjunction with the National Focal Points Meeting. It was pointed out, however, that this proposal was not feasible since different specialists were involved and an interval between the two meetings was essential to allow time for the preparation of any new proposals that might be required.

140. With regard to the recommendation in paragraph 2, a speaker drew attention to the need to eliminate non-essential activities. Other speakers considered it necessary to reflect on the 100 Historic Sites programme and its links with other programmes being implemented by UNESCO and the European Union, with a view to creating synergy. Mention was also made of the importance of the cultural dimension in the Mediterranean and the need to evaluate activities being performed elsewhere and to involve other partners.

141. In the debate on the recommendation in paragraph 3, a participant drew attention to the need for cost-effectiveness and output analysis. One speaker referred also to costs and benefits, while another called for greater transparency and the use of independent auditors. A participant considered that the evaluation process should be more dynamic and called for the development of an appropriate methodology. It was suggested that a meeting of experts should be convened to develop a methodology for cost-benefit assessment to be applied by all MAP structure and activities. Several participants pointed out that programme assessment and financial evaluation were separate processes involving different kinds of skill. One representative noted that the assessment activities should fully take into account the results of the initial evaluations. In that context, it was felt that greater use should be made of qualified personnel from the Mediterranean region. It was agreed that the RACs and MEDPOL should present a statement of accounts each biennium.

142. The Meeting took note of the functional chart and approved the recommendations, as amended in the light of the debate (Annex IV).

B. Mediterranean Commission on Sustainable Development

143. Introducing the section on the MCSD, the Deputy Coordinator gave an overview of the status of MCSD activities. The first priority for the coming biennium was the Strategic Review for the Year 2000, which would be a major activity over the next year. Next came the ongoing approved activities which had not yet been concluded, covering free trade and environment in the framework of the EuroMediterranean partnership, industry and sustainable development, and management of urban development. It was expected that those activities would be concluded for the next ordinary meeting of the Contracting Parties. Finally there was the subject of preparing for the new issues to be dealt with. Adequate feasibility studies were needed for each new topic. In that connection, seed money was available from the Secretariat and MCSD

members had offered support for the preparatory work. On the question of follow-up, he drew attention to the report of the fifth meeting of the MCSD (UNEP(OCA)/MED IG.12/Inf. 4), which contained a series of pertinent recommendations by MCSD members.

144. During the discussion, several representatives were of the view that it was necessary to have an in-depth discussion of the work of the Commission. Representatives suggested that the subjects to be covered in the discussion should include aspects of MCSD's work programme for the coming biennium, its timetable and how its recommendations were to be implemented and followed up. One representative was concerned that the MCSD, which had originally been conceived as a "think-tank", was in danger of turning into a mechanism for producing reports. In answer to a question on the budget for MCSD activities, the Coordinator pointed out that there was no specific budgetary component for the Commission, which was an advisory body, and activities linked to the subject of sustainable development could be found throughout the programme of activities of MAP and its structures.

145. Following an exchange of views, the Meeting decided to set up an open-ended working group, coordinated by the representative of Tunisia, to discuss the future work of the MCSD and the follow-up to its recommendations.

146. In his report to plenary, the Coordinator of the Working Group said that following a detailed, instructive and fruitful discussion, the Working Group had agreed on the following:

"Future work for the next two years:

- S The Contracting Parties take note with interest of the efforts that the MCSD is making and has already made to set itself a programme that is targeted, has a time frame and avoids dispersal over the many different components of sustainable development. The Contracting Parties therefore welcome the consideration given by the MCSD to its approach to the selection and treatment of relevant subjects with a view to their integration;
- S The Contracting Parties underline the importance they attach to the need for the MCSD to strengthen its role in bringing civil society closer to the process of reflection within MAP and to involve it more closely in its activities;
- S The Contracting Parties take due note of the Commission's decisions concerning the need to improve communication and undertake to facilitate their application.

Implementation and follow-up of recommendations and proposals for action made by the MCSD:

- S The Contracting Parties recognize the need for follow-up measures, recommendations and proposals for action by the MCSD and encourage it to draw up a strategy for this purpose. The strategy would be designed to help in evaluating the effectiveness of the action undertaken. The Contracting Parties also undertake to adopt the necessary measures to implement and follow-up the recommendations adopted;
- S The Contracting Parties will endeavour to identify and involve other partners in the implementation of the Commission's recommendations and proposals for action".

147. With regard to the date on which new members of the MCSD would take up their functions, the Deputy Coordinator drew attention to the two options listed in the report. The

Secretariat suggested that the new members to be nominated by the Contracting Parties should commence their functions immediately after their nomination, be closely associated with ongoing activities together with existing members and participate as the new members at the next meeting of the MCSD to be held in Tunis in November 2000.

148. Several representatives underlined the great importance of ensuring the continuity and efficiency of the Steering Committee's work. Some representatives stressed the need to respect the provisions of the Rules of Procedure. There was some discussion concerning the need to eventually amend them to make allowance for the new situation that had arisen. There was also a need for a better procedure for submission of nominations, including provision of a deadline to be respected so as to give the Secretariat adequate time to process the information.

149. The Coordinator, noting the general consensus in favour of ensuring continuity, considered that in order to allow the new members to participate immediately in the MCSD's activities, the Steering Committee could be invited to organize their integration into the working groups of the MCSD, while retaining the services of the outgoing members as appropriate. Task Managers should complete their work in the time period between Ordinary Meetings of the Contracting Parties.

150. The Meeting decided to review the question of membership of the MCSD in the presence of the Contracting Parties. It noted that the Bureau had thoroughly reviewed the list of candidates for membership of the MCSD, taking into account the need for rotation, while retaining one member from each group for reasons of continuity. The Contracting Parties approved the following list proposed by the Bureau:

Local Authorities

S	MedCities (reelected)	
S	IFOCC/ULAI (Union of Local Authorities)	(Israel)
S	Municipality of Calvia	(Spain)
S	Municipality of Tripoli	(Libya)
S	Municipality of Naples	(Italy)

Socio-economic actors

S	AIFM (Association internationale des forêts méditerranéennes)
S	IME (Institut méditerranéen de l'eau)
S	MEDENER (Mediterranean Association of the National Agencies for Energy Conservation)
S	EOAEN (Chambers Group for the Development of the Greek Isles) (reelected)

The fifth member would be selected by the next Bureau meeting upon submission of the necessary information from the following two shortlisted bodies: UTICA (Union tunisienne de l'industrie, du commerce et de l'artisanat - Tunisia) and FEI (Federation of Egyptian Industries - Egypt).

NGOs

S	WWF (World Wide Fund for Nature) (reelected)
S	ENDA Maghreb (Environnement et développement)
S	MEDWET (Mediterranean Wetlands)
S	MED Forum (Mediterranean NGO Network for Ecology and Sustainable Development)
S	MEDCOAST

151. The Deputy Coordinator introduced the MCSD recommendations and proposals for action on information, public awareness, environmental education and participation contained

in Annex I to the report, summarizing the four main components. The Task Manager (MIO-ECSDE) emphasized that the theme should be high on the agenda of the MCSD and the Contracting Parties and called upon all concerned to strengthen the means available for implementing the proposals.

152. The Meeting approved the MCSD recommendations and proposals for action on information, public awareness, environmental education and participation (Annex IV Appendix I).

153. The Director of the Support Centre (Blue Plan) introduced the MCSD recommendations and proposals for action on indicators for sustainable development in the Mediterranean contained in Annex II, highlighting the proposals in paragraphs 1 to 7. One of the co-Task Managers (France) stressed the fact that the Working Group had done its utmost to identify the bodies responsible for the implementation of each proposal. It should be noted that the set of 130 indicators selected as priorities remained open and that the countries should feel free to complement the list, taking into account their specific situation and concerns. It would be useful, wherever possible, to regionalize the indicators, in order to single out a Mediterranean regional and coastal perspective. It was agreed to delete the reference to Blue Plan in paragraph 7 of the recommendation.

154. The Meeting approved the MCSD recommendations and proposals for action on indicators for sustainable development in the Mediterranean, as amended (Annex IV Appendix II).

155. The co-Task Manager (Spain), speaking also on behalf of the Chambers Group for the Development of Greek Isles (EOAEN), introduced the MCSD recommendations and proposals for action on tourism and sustainable development contained in Annex III. She particularly emphasized the importance of developing a three-year strategy for sustainable tourism. The Director of the Support Centre (Blue Plan) highlighted the four main components of the recommendations.

156. The Meeting approved the MCSD recommendations and proposals for action on tourism and sustainable development (Annex IV, Appendix III).

C. Information and participation

157. Introducing the recommendations addressed to the Contracting Parties, and particularly the proposed MAP Information Strategy, the Deputy Coordinator drew attention to the need to increase the visibility of the Barcelona Convention and the work of MAP. Efforts had already been made in this respect, for example through the improved presentation of MAP documents. However, more needed to be done to promote a common and unified image of MAP and the RACs, for example by developing a MAP logo, undertaking information campaigns in collaboration with NGOs, producing an information kit and increasing the dissemination of information materials in the languages of the countries in the region.

158. In the discussion that followed, all representatives welcomed the initiative to improve information and participation in MAP activities. They also reaffirmed the importance of translating information materials into the languages of Mediterranean countries, and particularly into Arabic and Spanish, which were official languages of MAP. The targets to which information products were to be communicated should be expanded to include, as far as possible, relevant and interested intergovernmental organizations and civil societies, as well as private banks, which could play an important role in contributing to sustainable development activities in the Mediterranean.

159. In a brief discussion of standards for the presentation of and access to information materials, it was mentioned that the provisions of the Aarhus Convention (1998) could be used as background for the presentation, dissemination of and access to information. It was pointed out in this respect that Article 15 of the revised Barcelona Convention placed an obligation upon the

Contracting Parties to give to the public appropriate access to information on the environment and opportunities to participate in decision-making processes.

160. The Meeting approved the recommendations, including the MAP Information Strategy, as amended (Annex IV, Appendix IV), and the programme budget for 2000-2001 (Annex IV).

D. Cooperation and coordination with United Nations agencies, convention secretariats, IGOs and other institutions

161. Introducing the recommendations addressed to the Contracting Parties, the Coordinator recalled the rapid development over recent years in the volume of activities undertaken in coordination with the various intergovernmental institutions active in the region. He drew attention to the communication received from the Minister of Environmental Affairs of the Palestinian Authority expressing his wish to participate in UNEP/MAP activities in the region.

162. After many representatives had welcomed the proposal by the Palestinian Authority, the Meeting unanimously supported the request for the Authority to participate in the activities of MAP in the region. The representative of Israel added that Israel and the Palestinian Authority already participated together in several MAP activities in Israel.

163. In a brief discussion of the scope of collaboration with intergovernmental organizations in the region, it was emphasized that MAP should remain open to collaboration with all the relevant organizations in all the fields in which it was active, with particular reference to programmes for the prevention of marine pollution and the conservation of marine resources. Operational linkages should also be established with other convention secretariats, including the Ramsar Convention. It was also emphasized that collaboration with such programmes as METAP and MEDA/SMAP should be promoted by increasing efforts to submit concrete projects with broad participation. The observer representing METAP added that other areas of collaboration with MAP should be explored, in addition to the implementation of the Strategic Action Programme.

164. The Meeting approved the recommendations, as amended and the programme budget for 2000-2001 (Annex V).

E. Cooperation and coordination with non-governmental organizations (NGOs)

165. The Coordinator introduced the recommendations addressed to the Contracting Parties, also drawing attention to the recommendations put forward by the Working Group on MAP/NGO Cooperation.

166. One representative pointed out that it would be inequitable to approve the proposed list of NGOs on the basis of the new criteria when those already on the list had not had to meet the criteria. Another representative considered that criteria should be included to ensure that NGOs were not simply a one-person consultancy and were not funded wholly by the government. The contrary opinion was expressed by another representative because it would exclude certain academic institutions and in his view the question required further reflection. It was considered necessary for Governments to give an official opinion on the status of an NGO. Moreover, on the basis of the new criteria, the Secretariat was requested to review the MAP/NGO partners list according to MCSD major groups, and to seek ways and means of enhancing and strengthening the cooperation with those partners.

167. An observer emphasized that the participation of civil society was one of the pillars of the Barcelona Convention and the relevant budget allocation should be increased.

168. The Meeting approved the recommendations including the recommendations on MAP/NGO cooperation, as amended (Annex IV, Appendix V), and the programme budget for 2000-2001 (Annex IV).

F. Meetings and Conferences organized within the MAP framework

169. The Coordinator introduced the list of proposed meetings and conferences, drawing attention to the budgetary allocations for them.

170. The Meeting approved the recommendations and programme budget for 2000-2001.

171. The Chairperson thanked the countries and partners which had offered to finance meetings.

II. Components

A. Pollution prevention and control

172. Introducing the work programme to the Contracting Parties, the Coordinator of MEDPOL recalled the importance of the action taken during the present biennium in establishing a solid basis for the implementation of the new and innovative phase of MEDPOL. A number of criteria had been used in proposing activities for the biennium 2000-2001. In the first place, the Strategic Action Programme (SAP) was the most important activity in relation to the prevention and control of marine pollution. Priority had therefore been given to activities for the implementation of the SAP, for which funding had been received from GEF. Another priority had been the provision of continued assistance for the preparation and implementation of national trend, biological effect and compliance monitoring programmes, with particular reference to data quality assurance. In addition, the development of a detailed compliance and enforcement programme would continue. On the assumption that the Dumping Protocol entered into force in the near future, the activities proposed for its implementation included the development of the criteria, guidelines and procedures called for in Article 6 of the Protocol. Using the GEF funding, further progress would be made in the preparation of regional and national plans and programmes for the implementation of the LBS Protocol and the SAP and regional training courses would be organized. Assistance would also be provided to countries for the development of national Pollutant Release and Transfer Registers (PRTRs).

173. The recommendations to the Contracting Parties also included the provision of assistance for the establishment of interministerial national coordination committees, which were essential for the full implementation of the activities to be carried out in the framework of the collaboration with GEF. Work would also be commenced on updating the SAP so that an updated action programme would be available when the LBS Protocol came to force.

174. With reference to the guidelines for the management of dredged material (UNEP(OCA)/MED IG.12/4), which had been reviewed by two technical meetings and the MEDPOL and MAP Focal Points, he noted that they had been drawn up in accordance with Articles 4 and 6 of the Dumping Protocol and emphasized the importance of the proper management of dredged material in controlling pollution. The guidelines were submitted to the Meeting for formal adoption.

175. Introducing the recommendations to the Contracting Parties which concerned the work of REMPEC, the Director of REMPEC said that the Centre proposed to continue its activities in the fields of training, capacity building, technical information dissemination and assistance in cases of emergency. He emphasized the importance of the projects financed under the European Community's LIFE and MEDA mechanisms and the Technical Cooperation Division of IMO, which

made a significant contribution to the Centre's activities to assist coastal states fulfil their commitments under the Emergency Protocol. These sources of financing represented almost four times the Centre's budget under the MTF. He also described the action taken for the revision of the Emergency Protocol to bring it into line with some of the more recent developments at the global and regional levels for the prevention of pollution from ships and preparedness and response to accidental marine pollution. A second meeting of legal and technical experts would be organized in 2000, leading up to a Conference of Plenipotentiaries to adopt the amendments to the Protocol later in the year. Finally, he noted that the Centre's difficulties concerning its overload of administrative work had been partially resolved through funding made available by MEDU and that a more permanent solution was proposed in the recommendations.

176. Introducing the recommendations addressed to the Contracting Parties concerning the Regional Activity Centre for Cleaner Production (CP/RAC), the Director of CP/RAC recalled that the activities of the Centre were all funded and approved by the Spanish Government, which had reaffirmed its commitment to continue funding the Centre. The proposed recommendations took into account the recommendations made by the focal points of the Centre, as well as its collaboration with several MEDPOL activities and projects and with the MCSD, and particularly its working group on sustainable development and industry. The proposed activities included four seminars, the publication of the newsletter *CP News*, a publication on successful experiences of cleaner production and handbooks on cleaner production technologies, particularly in the food production and textile industries. Another handbook would be published on the organization of cleaner production diagnosis and working groups for the development of cleaner production. A database of cleaner production experts in the region would also be established and the Centre's website would be expanded.

177. The representative of Turkey, noting the increased risk of accidents in the Aegean Sea in view of the rise in the volume of maritime traffic between the Mediterranean and the Black Sea, highlighted the need to develop a sub-regional contingency plan to combat pollution.

178. In a brief discussion on the guidelines for the management of dredged material, and particularly an amendment proposed by Spain, it was pointed out that the Protocol did not prohibit the dumping of dredged material in the open sea and that it would not therefore be appropriate for this to be recommended in the guidelines. However, certain speakers felt that the guidelines should be more forceful on this point. The Meeting agreed that the guidelines should recommend that the dumping of dredged material in the open sea "should not be carried out" and that the term "should" would be used in the document, rather than "shall".

179. Finally, the representative of Greenpeace, with a view to preparing regional programmes for the reduction of pollution and for the implementation of the SAP, emphasized the need for the establishment of an inventory of potential sources of dioxins in the region. He offered the assistance of his organisation in this activity. The Meeting welcomed this offer of assistance.

180. The Meeting adopted the recommendations related to this component, together with the guidelines for the management of dredged material, as amended (Annex IV, Appendix VI), and the programme budget as amended (Annex IV).

B. Conservation of Biological Diversity

181. Introducing the proposed recommendations, the Director of SPA/RAC drew attention to the draft revised Action Plan for the Conservation of Mediterranean Marine Turtles, including the list of priority actions for further implementation of the Action Plan, (UNEP(OCA)/MED IG. 12/7), the recommendations on topics to be addressed as a matter of priority in the further implementation of the Action Plan for the Mediterranean Monk Seal (UNEP(OCA)/MED IG. 12/3, annex VI), the recommendations for further implementation of the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea (UNEP(OCA)/MED IG. 12/3, annex VII), and

the Draft Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea (UNEP(OCA)/MED IG.12/8). He thanked the Contracting Parties for their assistance in organizing the expert meetings which had enabled the finalization of those recommendations, and the NGOs and experts for their valuable contributions to the process.

182. SPA/RAC had also worked with regional experts to prepare tools to support and guide countries in the management of biodiversity, and to improve the available information and data on the elements of biodiversity. The Draft reference Classification of Marine Habitat Types for the Mediterranean Region (UNEP(OCA)/MED IG. 12/5) was a necessary instrument to homogenize lists and inventories. SPA/RAC and the regional experts had also started work to prepare a classification of coastal habitats which had not yet been finalized. Concerning inventories, he drew attention to the Draft Standard Data Entry Form for National Inventories of Natural Sites of Conservation Interest, including a reference list of habitat types and a reference list of species (UNEP(OCA)/MED IG. 12/6). In the preparation of the latter, RAC/SPA had drawn upon existing inventory tools for the region, such as those used within the establishment of Natura 2000 and Emerald Networks, the criteria set by the Parties at the Tenth Ordinary Meeting, and extensive input and comment from country experts.

183. Further recommendations to Contracting Parties were contained in the report of the Executive Director and concerned public information activities (UNEP(OCA)/MED IG. 12/3, section B.3). In that connection, the Director highlighted the need to strengthen the capabilities of SPA/RAC in the field of information.

184. One representative stressed the need for a survey to be conducted to collect data on cetaceans in the Eastern Mediterranean from Turkey to Egypt. The survey, to be coordinated by SPA/RAC, would be undertaken by researchers from concerned countries. His proposal was supported by another representative. In response, the Director of SPA/RAC, expressing his full support for the proposal, said it would first be necessary to set up the terms of reference for such a survey and look at how to raise funding for its implementation.

185. A discussion took place concerning the Draft Standard Data Entry Form for National Inventories of Natural Sites of Conservation Interest. One representative considered that the Draft Standard Data Entry Form was not fully applicable to marine sites and that certain sections of the document needed to be improved in that respect. Reference was also made to the relevance of annexing to it criteria for ranking the sites according to their priority for conservation. Several representatives stressed the urgent need to implement inventories and were concerned at the delays such activities would suffer if the adoption of the Draft Standard Entry Form were to be postponed.

186. Recognizing the good quality of the Draft Standard Data Entry Form prepared, the Meeting agreed to approve its broad general framework and, as an exceptional case, to give a mandate to the Bureau to adopt the final version of the Standard Data Entry Form by the first half of the year 2000, on the basis of the outcome of a meeting of experts convened to review the Form. The representative of Italy said that his country was prepared to host and finance such a meeting.

187. The Meeting adopted the recommendations for conservation of biological diversity, as amended, and the programme budget (Annex IV). The referent documents: reference Classification of Marine Habitat Types for the Mediterranean Region; revised Action Plan for the Conservation of Mediterranean Marine Turtles, including the list of priority actions for further implementation of the Action Plan; recommendations on topics to be addressed as a matter of priority in the further implementation of the Action Plan for the Mediterranean Monk Seal; the recommendations for further implementation of the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea; and Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea are contained in Annex IV, Appendices VII to XI, respectively.

C. Sustainable development of coastal regions

188. The Director of PAP/RAC, introducing the recommendations on the sustainable management of coastal zones in which PAP/RAC was involved, said that over the years the Centre had gradually sharpened its focus on coastal management. He went through the recommendations, one by one, highlighting the activities and programmes which PAP/RAC intended to carry out in the forthcoming biennium.

189. The Director of ERS/RAC reviewed the activities carried out by the Centre in the previous biennium, and which could be continued in 2000-2001, in the fields of monitoring and assessment, training and capacity building, and inventories and reviews of remote sensing activities. After outlining ERS/RAC's contribution to the CAMPs in Egypt, Tunisia and Israel and to an EC co-funded project on forests, he referred to the forums conducted in Egypt, Malta and Lebanon and to planned future forums in the Libyan Arab Jamahiriya and Syria. ERS/RAC had also supported the MCSD working group on urban management. He concluded by highlighting the recommendations involving ERS/RAC which aimed to continue to provide Mediterranean countries with objectives, updated environmental information on which to base the sustainable management of the region, and by outlining its plans to attract external funding.

190. In the course of the discussion, the representative of the Libyan Arab Jamahiriya requested a CAMP in his country. The representative of Croatia, the host country of PAP/RAC recalled that her country provided the Centre with technical and financial support and had also benefited from its help, especially in integrated coastal area management. Enhancing the capacities of environmental protection institutions and raising public awareness were goals to which both her Government and PAP/RAC were deeply devoted.

191. A representative requested clarification on the added value provided by ERS/RAC and on its general policy. She wondered how it contributed to the work of the MCSD and whether it had cooperated with the Blue Plan on indicators. She also enquired about its fund-raising activities. In reply, the Coordinator suggested that all queries relating to ERS/RAC could be taken up at the joint Focal Points meeting that was to be held with PAP/RAC and BP/RAC. An independent evaluation of ERS/RAC would be undertaken and the results presented to the Contracting Parties, moreover, there should be a discussion of the evaluation at the next meeting of the PAP/RAC Focal Points.

192. A representative called for the addition of references to relevant partners in recommendation 3 addressed to the Contracting Parties and in recommendations 8 and 10 addressed to the Secretariat. Another representative suggested that a reference to coastal industries should be included in the recommendations to the Contracting Parties and considered that the recommendations to the Secretariat should not refer specifically to particular RACs but should be left open in order to encourage the widest possible participation by all RACs.

193. The Meeting approved the recommendations, as amended, and the programme budget for 2000-2001 (Annex IV).

D. Integrating environment and development

194. Introducing the recommendations to the Contracting Parties, the President of BP/RAC recalled that the Centre had been active in undertaking studies on environment and development from its origins and that it naturally played an important role in supporting the work of MCSD and following up its recommendations. The proposed activities of the Centre fell into four major categories. The first of these consisted of observation and prospective studies of the environment and development. Unfortunately, over the years progress had been slow on the compilation of environmental statistics. However, a decisive step had been taken with the establishment of MEDSTAT, financed by MEDA, through which the Blue Plan had been entrusted with research and

the development of statistics on the environment in the Mediterranean region under the auspices of EUROSTAT. This work would be carried out with national statistical institutions as well as national observatories on environment and development. Blue Plan and MAP had also acted as catalysts for the development of indicators for sustainable development, in partnership with the Mediterranean countries and other institutions, and particularly EC/LIFE. At the present time, some 35 indicators out of a proposed 130 had been developed. Tests were being conducted in several countries. Other important planned activities included the preparation of an important report on environment and development, which would be prepared in close contact with the various countries. Another activity concerned the analysis of the relationship between international trade and the environment, with particular reference to the work on free trade in the Mediterranean carried out by MCSD.

195. A second important area of Blue Plan's work concerned the follow-up to MCSD's work on tourism. A project would be prepared in the context of MEDA and a synthesis study was planned on this subject. A third area of activities consisted of urban development, which had undergone an explosion in the region over the past half century, with serious environmental consequences, particularly for waste management and for transport. A publication would also be prepared on this subject.

196. Finally, with reference to the activities of the Centre in the field of rural development, water and soil, he noted that a report on water demand management had been prepared and would be submitted to a forthcoming meeting in the framework of the global water partnership. This report constituted one of the follow-ups to the recommendation of the MCSD and was very likely to give rise to external financing for continued activities in the framework of the EuroMediterranean partnership. Other work would continue to be carried out on soil, rural development and forests, as well as, possibly on natural risks.

197. Several countries reaffirmed their willingness to cooperate with the Centre in its activities; and several speakers mentioned some of the possible priority areas for the work of the Blue Plan, including the impact of free trade on the environment, soil erosion and desertification and the necessity of developing a system for cooperation in the event of natural and manmade disasters. In this latter area, the Meeting was informed of an Italian institution which was prepared to cooperate with other partners. One speaker added that the development of environmental statistics was not easy and that coordinating committees should be set up on which environmental ministers could be present in order to ensure that national statistics took environmental factors into account.

198. Finally, BP/RAC and other interested partners were invited to participate in the conference which was being organized by the Arab Network for Environment and Development and MIO-ECSDE in December 1999, which would cover, inter alia, strategies, business opportunities and innovative partnerships in the field of waste management.

199. The Meeting adopted the recommendations, as amended, and the programme budget (Annex IV).

III. Budget for the biennium 2000-2001

200. In the discussion of the overall budget for the biennium 2000-2001, the individual components of which had already been adopted section by section, all the speakers agreed to adopt the proposed budget.

201. The representative of France asked for further information on the current status of contributions, which was subsequently provided to him by the Secretariat, and requested that, in future, the requests for contributions from the Contracting Parties be sent out earlier, so that they could pay their contributions without delay. Moreover, in view of the volume of documents

produced for the Contracting Parties and the large amount of paper used, the documents should be printed on recycled paper and reports should be sent by e-mail, in order to reduce the costs of printing and mailing.

202. The representative of Italy, supported by other representatives, expressed his readiness to approve the total budget on the understanding that a thorough cost-effectiveness and output analysis be undertaken by the Secretariat of the use made of the budget for the biennium 2000-2001.

203. The representative of Cyprus raised the question as to whether it was for the Contracting Parties or for UNEP to decide upon the grades of MAP staff, particularly with reference to the new positions proposed in the budget for 2000-2001. It was agreed that the Information Officer would be budgeted at the P.3 level, and the Senior Programme Officer at the P.4 level.

204. The Secretariat would seek to ensure that requests for contributions were sent out in good time in future. It also agreed to examine the possibility of using recycled paper and sending out documents through e-mail. In addition, it confirmed that a cost-effectiveness and output analysis would be undertaken concerning the budget for the biennium 2000-2001.

205. With the above clarifications, the total budget for the biennium 2000-2001 was adopted by the Meeting (Annex IV).

Agenda item 9: Date and place of the Twelfth Ordinary Meeting of the Contracting Parties in 2001

206. The Chairperson informed the Meeting that the Secretariat had received an invitation from Monaco to hold the Twelfth Ordinary Meeting of the Contracting Parties in 2001 in Monaco.

207. The Meeting accepted the offer of Monaco to host the Twelfth Ordinary Meeting of the Contracting Parties in 2001 at a date to be fixed in conjunction with the Bureau.

Agenda item 10: Other business

208. The representative of Turkey informed the Meeting of its willingness to establish, within the framework of MAP, a Regional Activity Centre on training, education and public awareness (RAC/TEPA). The Secretariat was requested to examine the proposal with the Turkish authorities and, following presentation to the Bureau, to submit it to the next Ordinary Meeting of the Contracting Parties for action and decision.

Agenda item 11: Adoption of the report of the Meeting

209. The Meeting adopted its Report on Saturday, 30 October 1999.

210. After the adoption of the report, some delegates made the following statements:

The representative of Greece expressed his disappointment regarding the substance and interest of the Meeting, considering it, as he noted, the poorest Contracting Parties meeting he attended. Too much time was spent on statements by head of delegations and not enough on substantive discussion. He also noted the general lack of future vision and goals for the Mediterranean. He stressed that these should be given priority in further meetings.

The representative of the EC would like, for reasons of transparency, to see how to change the established United Nations rule and practice of not mentioning speakers by name, since the EC procedure did allow the naming of individual speakers.

The representative of France mentioned that there should be, after the ministerial segment, a policy discussion referring to the future of the Mediterranean.

Finally, the representative of Morocco expressed the need to think of priorities and a five-year programme together with a vision for MAP.

Agenda item 12: Closure of the Meeting

211. Mr. Jorge Illueca, Assistant Executive Director of UNEP, speaking on behalf of Mr Klaus Topfer, Executive Director, gave a closing statement. The text of the statement is contained in Annex II of the present report.

212. In his closing address, H.E. Mr Francis Zammit Dimech thanked UNEP for helping Malta to draft its environmental legislation and noted that environmental conventions were one of the greatest achievements of the United Nations, since a healthy environment meant a healthy life for the people. He extended Malta's offer to host, in conjunction with other partners, the Meeting of Plenipotentiaries to adopt the Emergency Protocol towards the end of the year 2000.

213. Following the customary exchange of courtesies, the Meeting rose at 6.30 p.m. on Saturday, 30 October 1999.

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**Opening Statement by H.E Mrs. Faiza Kefi, Minister for the Environment and Land
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Although the elections in my country would have been more than enough reason to keep me back at home, I could not fail in my duty to represent Tunisia at this important MAP event, and to reiterate by my very presence at this, the 11th Meeting of the Contracting Parties to the Barcelona Convention, Tunisia's on-going commitment to our common project- to protect and promote the Mediterranean, this cradle of age-old civilisations with such a marvelous history, which we all share.

It is from that same cradle that Malta, where we are lucky enough to be meeting today, drew its cultural wealth, and the strength of its economic and social development.

Indeed, this country, which is so attached to peace and democracy, has managed to earn the respect and friendship of those who surround it.

It is therefore a pleasure for me, on behalf of my country, to greet the representatives of the Maltese people, from the governmental, local and institutional levels, and to express my warm congratulations to Minister Francis Zammit Dimech on his election as chairman of our meeting. Through him I would like to thank all those who have played a part in ensuring that our welcome, stay, and the overall organisation have been so good.

It is also true to say that we owe the quality of our work and results to the high standard and exceptional nature of the service provided by the MAP Coordinating Unit. Although we all know that this is thanks, in particular, to the calibre of Mr. Chabason and his passion for the Mediterranean and for his work, we are also aware of how much is due to the seriousness and professionalism of his team of assistants. Mr. Dharat, whose retirement has just been announced, has earned our great respect for the contribution he has made, and deserves our thanks for having served as such a patient, dynamic and hard-working secretary to the meetings of the Contracting Parties for so many years.

Ladies and Gentlemen,

For almost 25 years Tunisia has been working with MAP for the setting up of an efficient and effective framework for North- South solidarity for the protection of the environment.

It has been over the last ten years in particular, however, that Tunisia's interest in making MAP a real instrument of Mediterranean solidarity for the environment has found its full expression, once environmental policy became a central element in the country's development strategy, and MAP activities started to be seen as a national priority.

Despite its limited means, the efforts made by Tunisia square entirely with these choices.

Thus, sources of pollution from land-based sources have been greatly reduced thanks to efforts towards urban renewal. The 60 water treatment plants which Tunisia has managed to construct mean that 50 million cubic metres of wastewater can be treated, thus sparing the Mediterranean from millions of tons of biological and chemical pollutants.

In parallel, a National Programme for the Management of Solid Waste (PRONAGDES) has been set up, with the result that the country's major cities have been provided with units for the treatment of solid waste, sorting and transfer centres. This programme is at present being consolidated by the creation of the ECOLEF system, a public system for the selective sorting and reprocessing of packaging, plastics in particular, and encouraging its recycling.

Measures to control industrial pollution which have affected most pollution- creating plants are beginning to bear fruits, particularly for the Mediterranean, thanks to the backing of the private sector which, it must be said, has been able to count on the support of a special de-pollution fund, known as the FODEP. Since 1996, more than 204 industrial units have taken steps towards de-pollution and the treatment of the waste they produce, through a subsidy which covers their total investment to a tune of 20%.

Moreover, large-scale environmental projects requiring major investment are underway along the whole coastline. They are aimed in particular at cleaning up lakes and lagoons, or the de-pollution and rehabilitation of coastal areas seriously damaged by industrial pollution and phosphogypsum dumps. Such programmes will make a substantial contribution towards reducing sources of land-based pollution, and therefore towards better conserving the Mediterranean.

Similarly, in the area of sustainable development, the inclusion of major projects aimed at protecting biodiversity within the various economic development programmes, and the mushrooming of specially protected areas are seen as the key elements in the Tunisian policy for the conservation of the Mediterranean biological heritage, taking into account the needs of future generations.

Finally, the National Contingency Plan for cases of accidental pollution, which was approved in 1995, has attracted particular interest in testing its workability through the setting up of leadership teams, acquiring the appropriate equipment and carrying out simulation exercises.

Ladies and Gentlemen,

Through such achievements, which have required considerable financial and technical effort, Tunisia trusts that she has made a concrete and positive contribution towards the protection of the *Mare Nostrum*.

However, aware of the importance of fitting this work into a global and concerted framework for the Mediterranean, Tunisia has shown her determination to play an effective role in the revision of MAP, particularly since the 1994 MED 21 Ministerial Conference, which met at Tunisia's invitation, and has made every effort to implement the recommendations made by the Conference.

Since that date Tunisia has set up the Agency for the Protection and Planning of the Coastline, and was very much involved in the revision process of the texts of the Barcelona Convention and the relevant Protocols, as well as in the drawing up of MAP phase II, which integrates sustainable development into Mediterranean cooperation activities.

With the aim of making the renewal of MAP a reality, Tunisia has paid particular attention to the work of the MCSD, and the activities of the different regional activity centres, supported by the MAP structures and by our Mediterranean partners.

We have striven in particular to develop an appropriate programme of activities with each of the structures set up by MAP. This is an ideal opportunity to pay lip service to all the representatives of the Centres here today, and to express our encouragement and satisfaction at the work accomplished, the results of which provide the food for thought for this meeting.

The quality and pertinence of these results stand as guarantees, inviting us to take them on board and ensure that they become part and parcel of our programmes.

The proposed programme of activities for the coming biennium 2000- 2001 is of tantamount importance. Allow me, therefore, to make a few comments and suggestions which sprang to mind following careful reading of the document.

My first comment refers to the MED POL and Blue Plan programmes, both of which held our full attention. We strongly recommend that these programmes should grant greater importance to countries' own capacities. MED POL should focus on building capacity at national and local level in the field of pollution monitoring, and in tracking down appropriate technologies for de-pollution activities. The Blue Plan should strive to boost human resources capable of drawing up the indicators and national reports on the state of the environment, as well as instruments for analysis and prospection in the field of sustainable development.

For its part, and in the same spirit, the PAP Centre, which has drawn up some excellent tools for the integrated and sustainable management of the coastal areas, should continue to extend its support to countries so requesting, and in particular to local authorities trying to understand and apply these tools. It could support pilot projects to this end.

My second comment concerns the SPA/RAC, which I feel duty bound to congratulate on its excellent work. This Centre, to which we owe a large part of the documents before us today, should provide more support to the countries on the southern rim, helping them to apply in practice the action plans aimed at protecting and conserving threatened marine species. This support should target capacity building for management, and the promotion of specially protected areas.

Moreover, whilst it is my duty to thank the countries which have given the Mediterranean the Remote Sensing and Clean Production Centres, which to their credit have helped improve understanding and circulation of new technologies for sustainable development, I would also like to congratulate REMPEC for having trained those involved in combating accidental marine pollution, and promoting pilot projects like the Sfax CAMP, which should be continued and put to full use.

Finally, it strikes me as important that the cultural dimension of the Mediterranean heritage should find its place within the activities of MAP, particularly since the Secretariat of the 100 historic sites has done some remarkable work wherever it has been able to intervene.

Ladies and Gentlemen,

The Mediterranean needs peace and security. We should become more involved with the process underway by taking up the request of the Palestinian Authority to take an active part in our work. In so doing, we would be opening up a further door to dialogue and participation in the building of a lasting peace in the Mediterranean.

Ladies and Gentlemen,

I believe that this meeting will achieve its aims thanks to the quality of the reports presented, and particularly that of the Coordinator. In its new form it is both rich and well structured, and invites us to act immediately.

We expected nothing less of those we chose, and in whom we have placed our full trust.

Ladies and Gentlemen,

The Mediterranean expects us to act, the Mediterranean peoples expect us to provide effective programmes. We have no choice. We have a duty to strive to live up to their expectations.

By way of conclusion, a simple reminder- Tunisia awaits you at the end of the year 2000 for an in-depth examination of the Strategic Review on the occasion of MED 21 + 5.

And in the meantime, a happy end of millenium to all of you!

**Opening statement by the Hon Francis Zammit Dimech,
Minister for the Environment, Malta**

Mr. Chairman, Honourable Ministers for the Environment of the littoral States of the Mediterranean Sea and Heads of Delegations, Mr. Chabason, Coordinator of MAP, Excellencies, Representatives of International Agencies and of Non-Governmental Organisations, ladies and gentlemen.

It is indeed a great pleasure that I welcome you (at long last) to Malta. At the moment Malta is deeply immersed in the process of preparing for negotiations with the European Union in view of our becoming members of the Union, but it has always been clear to us that this process implies a strengthening of our commitment to Mediterranean institutions and an enhancement of our role within them, not a diminution.

In the particular case of the present institution, the European Union has participated in the Mediterranean Action Programme since its beginning in 1975 and has renewed its involvement in the second phase which are now engaging in. Malta's presence within the EU can only be a contribution to a clearer sounding of the polyphonic Mediterranean dimension of the European concert of voices.

Precisely because of the developments taking place in the European Union's Mediterranean policy, the so-called Euro Med process, it may turn out that this meeting we are holding on the eve of the new millennium, although it is listed as just our "11th Ordinary Meeting", may not turn out to be in fact as plain and common place as the phrase "11th Ordinary Meeting" might suggest.

There are now in progress two ideally related but practically still merely parallel developments which require us to conceive of the whole of our agenda in new and different perspectives. I am, as you will have probably guessed, referring to first, the setting up of the Mediterranean Commission for Sustainable Development, the first attempt at implementing the regional programmes decided upon by the Earth's summit of Rio, as a body within our MAP Structure; and, secondly, to the other Barcelona Agreement which was made the basis of the European Union's latest attempt at recognising the importance and complementarity of the non-member Mediterranean World. In fact, nowadays when one refers to the Barcelona Convention one has to be careful to ensure that there is no misunderstanding about which agreement is being alluded to.

The setting up of the Mediterranean Commission for Sustainable Development was indeed intended - at least by the Government of Malta, which was one of its proponents and keenest supporters - to put into practice the realisation and conviction that the best way to conserve the environment was its carefully weighted development. The first phase of MAP - for which I would like once again to pay tribute to its courageous and capable artificers - was conceived primarily as a response to the threats which were then very menacing to the very survival of the Mediterranean as a living sea. The new phase has to be characterised by the integration of the conservation and development processes, or rather one should say by the integration of the conservationist and the developmental aspects of one and the very same process.

My first augury to this meeting is that this perspective be adopted in the consideration of all items in our agenda. It is not a topic for discussion on its own but rather an angle of vision for the correct sighting of all the problems with which we are faced.

When stating that I did not regard our meeting as banally routine, it was not so much because of the ever changing criticality of the Mediterranean situation. It is true that we seem to be living through a moment of hell in the armed conflicts which continue episodically to stain our shores with fraternal Mediterranean blood; and we are fully aware that environmental resources, such as water supplies, play a great part in the difficulty of healing the wounds of such wars. It is also true that there have been natural disasters which have particularly hit Turkey and Greece and damaged some glorious parts of the world's cultural heritage also in Italy - another sad instance illustrating the inter-texture of nature and economics - and the inseparability of culture and environment.

But I was not referring to these historical contingencies and even less to the macroscopic structural changes in the socio-economic field deeply affecting the quality of life in the coastal areas of the Mediterranean, such as the dramatic shifts in the demographic equilibrium between North and South and between rural and urban areas. I was referring to the institutions and organisations which we are just now setting up in order to tackle as effectively as possible and with as much solidarity as we can master, all the changes that crop up with the passage of time.

I began by briefly underlining the great significance which not only the constitution of the Regional Commission for Sustainable Development but also correlative amendments and enlarged scope of the Barcelona Convention have. I believe, however, that this significance would be very much greater if it were to be correlated with the developments set in motion by the other Barcelona Agreement - the Euro Med process. Discussions about its review incidentally are due to be held in Malta in the near future.

Through the Euro Med Process initiated at Barcelona, the European Union made - for the first time in reality - a significant allocation of funds for Mediterranean development, in addition to propounding a new strategy in its approach to the Mediterranean; namely, regional networking.

On the other hand it is striking and worrying that funding for some MAP programmes has been curtailed, as is almost inevitable once the increase in budgetary provision being requested amounts to only a 4 per cent increase for next year over the last budget and a further 4 per cent for the year 2001. Even assuming - as I hope - that we will approve these financial commitments, it is clear that the resources being devoted to MAP are still not being calculated in the perspective of development integrated with conservation; they are not even keeping up with the amount in real terms of funding provided within the much narrower former perspective of mainly emergency measures.

It therefore seems to me that the direction in which we should move is to seek to bring together the efforts of both pan-Mediterranean bodies - MAP II, including the Mediterranean Commission for Sustainable Development, and the Euro Med process began also at Barcelona more than a score of years later. This second movement supposed to rest conceptually on the strategy of pan-Mediterranean network building has at its disposal relatively ample funds although their present system of allocation is in fact resulting in difficulties to spend them wisely, if at all.

Moreover, MAP and its new ancillary bodies which now have development as the essential corollary of conservation have the kind of cooperative infrastructure including the structural participation of non-governmental organisations bringing together relevant business and scientific interest into a public-private partnership, such as is needed if a real sense of common ownership of projects by all Mediterranean countries is to be generated.

A convergence between the two Barcelona-originated movements would undoubtedly facilitate the implementation of many uncontroversial ideas of undoubted benefit to the Mediterranean region directly and to the rest of the world indirectly, such as the establishment of the Mediterranean Centre for Marine Technology about which I spoke on a similar occasion as the present on in 1995, as well as other creative non-conflictual ways of applying the common heritage principles of the law of the sea in the Mediterranean region.

With this basic orientation in mind I wish to express our confidence in M. Chabason and his staff. They have a key-role in making MAP Phase II a success from the point of view of future generations. They know perhaps even more clearly than anyone else that poverty especially in areas where large numbers of people are concentrated as in many Mediterranean coastal regions is the chief source of environmental degradation.

If this conviction is to be taken seriously, independently of my suggestions about devising means by which we could benefit from the Euro Med process whilst strengthening it politically, it becomes more than ever necessary to see other sources of funding than national subscriptions. The Barcelona Convention now includes 'the polluter pays' principle and I am looking forward to the results of the study which is being prepared to tell us how the application of the principle may contribute practically to the funding of sustainable development. Malta was one of the proponents of this study as well as of other proposals aimed at establishing systems of international taxation such as a tourist tax, the proceeds of which are to be devoted strictly to environment conservation.

I need not spend any time to dwell-in justification of our many proposals in connection with MAP - on the extent to which Malta depends on the sea - including over 50 per cent of our drinking water. Malta has also hosted the Regional Emergency Marine Pollution Control Centre, as it is now called, ever since its birth and Malta has itself benefited from its services, as also from the growing Regional Activity Centre for Sustainable Coastal Areas Management. We hope that there will also soon be a notable improvement in the quality of our compliance reporting in relation to our obligations - something we also hope to see happening all around.

A shift from expressing environmental goals as mere desired principles to formulating these goals within measurable and precise framework where compliance reporting place a major role is one of the major achievements of the amendments to the Barcelona Convention and its Protocols. The Government of Malta has this week signed the instruments of ratification of amendments to the Barcelona Convention and all its Protocols except one.

Allow me to express a heartfelt appeal to all colleagues and heads of delegations to ratify the Barcelona Convention and its Protocols as expeditiously as possible. The Mediterranean Sea, which sustains us, calls upon us to fulfil this duty towards it, and towards ourselves.

I will conclude by expressing our gratitude to Mr. Ibrahim Dharat, who, I am informed has just retired from MAP. It is thanks to the services of such people as Mr. Dharat that we can look forward to MAP II really helping the Mediterranean regain in the next millennium the splendour it enjoyed in the Millennia before and after the birth of Christ.

**Opening Statement by Mr Lucien Chabason,
Coordinator of the Mediterranean Action Plan**

Madam Chairman, Ministers and Heads of Delegation, Ladies and Gentlemen,

On behalf of Mr. Topfer, Executive Director of UNEP, allow me to thank the Maltese Government for its hospitality and the excellent welcome it has extended to us on this island which lies right at the heart of the Mediterranean Sea and which, in many respects, symbolises its natural and cultural wealth, its history, and its modern-day problems.

Over the coming four days we will be celebrating the last meeting of the Contracting Parties to the Barcelona Convention of the century now drawing to a close. Let us look back for a moment at this, the XXth century, which has seen so many happenings and major developments: unprecedented scientific and technical progress, major population growth, a radical transformation of the economy and territories, particularly disastrous conflicts at world scale, and of course the problem of the environment- which was already being highlighted back in Antiquity by great authors such as Pliny the Elder- which has taken on considerable proportions. All these developments have affected our Mediterranean, as each and every one of us will have noticed over the course of our own lives.

Mankind's reaction to such developments has been to set up institutions at both universal (UNO) and regional level, and to adopt collective means of intervention. The world has become smaller, more measurable, its resources better documented. For thirty years we have been tackling environmental questions. The air, wild fauna and flora, inland waters and the sea have all been the focus of our attention, and the UNEP has taken on a leading role in these areas.

The Barcelona Convention in 1976 represented a major first. In a region ravaged by tension and, on occasion, savage conflict, the riparian states joined forces to protect a unique heritage and resource- the Mediterranean. The legislation which we produced back then was still rather modest, encouraging rather than laying down the law. In 1995 with the revision of the Convention and its protocols, the provisions became much tougher.

I sincerely hope that the year 2000 will witness the coming into force of these new texts, which impose a strict ban on dumping operations, protect the most vulnerable species and habitats, regulate the movement of hazardous waste in the Mediterranean, and give the public new rights on questions of information and participation.

The prospect of the coming into force of this revised system goes hand in hand with many initiatives:

- the enlargement of MED POL in the direction of effective application and pollution control;
- the implementation of the Strategic Actions Programme which, with the assistance of the GEF, commits countries a little further to the struggle against pollution from land-based sources;
- the drawing up of Strategic Action Plans for biodiversity.

At the close of this century, the Barcelona Convention has considerably extended its field of responsibility and competence by setting up the Mediterranean Commission for Sustainable Development, and by striving to understand the inter-relations between the type of economic

development we are experiencing, and the resulting effects on the land and our environment, the most striking example being that of tourism.

Wanting to influence the content of economic development in order to better protect the environment is a veritable wager in this age of the triumph of the market economy and of free trade. Such is, however, the task which the world community took upon itself in Rio. All the United Nations' agencies are pulling towards this end. And that is what is at stake this week in Bonn in the negotiations on climate.

Let us make our Mediterranean a working framework in order to achieve this objective. It is a challenge.

We must prove that we are capable of accepting millions of visitors in our region without damaging the environment rather, on the contrary, using this economic resource to better protect it, that we are able to control the growth in urban areas, energy consumption, production of waste, release of waste into the air and water, and soil degradation. We can apply these policies whilst at the same time continuing to work towards the well-being of our citizens and towards economic and social development. This is the essence of the MCSD's work: the Mediterranean must assert itself as an area where sustainable development is applied.

Ladies and gentlemen,

As this century draws to a close, MAP has got the measure of the major development and environment issues in the region, it is recognised and respected as an exemplary framework for regional cooperation. As such, it stands as a constant reference for UNEP, which has relaunched its regional seas programme, and for all those who are involved in the protection of the oceans, seas and coastal regions.

The exemplary nature of MAP should not blind us to the considerable ground which remains to be covered over the coming ten years:

- to bring about a massive reduction in pollution from land-based sources;
- to protect the most important marine and coastal habitats;
- to adopt instruments for the integrated planning of coastal areas;
- to substantially improve our information system for the environment.

The Mediterranean is our heritage, and we are responsible for it vis a vis future generations. These are not just empty words because it is a genuine responsibility, and one which we will continue to bear.

To conclude, allow me to congratulate Tunisia, Minister Kefi who has chaired the Bureau and the MCSD, and all the members of the outgoing Bureau who have performed so efficiently.

Thank you.

Closing Statement by Mr Jorge Illueca, Assistant Executive Director, Division of Environmental Conventions, United Nations Environment Programme

Mr Chairman, Ladies and Gentlemen

On behalf of Dr Klaus Töpfer, Executive Director of the United Nations Environment Programme, I want to congratulate you all for having concluded a successful and productive Eleventh Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols. Once again, the Barcelona Convention has demonstrated that it is at the cutting edge in addressing critical marine and coastal issues.

Mr Chairman, during the past three years UNEP, as a follow-up to requests by Governments at the nineteenth and twentieth sessions of the Governing Council, has given top priority to the revitalization of the Regional Seas Programme. In this endeavour, we have been ably assisted by the Secretariat of the Barcelona Convention.

During this period, we have brought about a major strengthening of the Regional Coordination Units of the Cartagena Convention for the Wider Caribbean and the East Asia Seas Action Plan, resulting in substantial progress in the implementation of the respective programmes of work.

On October 6 of this year in Aruba, the Contracting Parties of the Cartagena Convention adopted perhaps the strongest international legally binding instrument on land-based sources of pollution. Among other accomplishments, the Aruba Protocol through its Annex III establishes emission standards for domestic waste waters and deadlines for achieving them. Annex IV addresses the very critical issue of agricultural non-point sources of pollution.

At the moment, UNEP is advising and assisting the Governments of the North-West Pacific Action Plan (NOWPAP) in setting up their Regional Coordination Unit. To this end, the RCU in Athens has been very helpful in sharing its experiences with the Governments of the NOWPAP region.

UNEP is concentrating a great deal of its efforts to strengthening the two regional seas conventions in Africa: the Nairobi Convention for East Africa and the Abidjan Convention for West Africa. In this exercise we have been assisted by the Priority Actions Programme/Regional Activity Centre (PAP/RAC) which contributed substantially to the report: "Vitalization of the Nairobi and Abidjan Conventions: Proposals, Including Elements for a New Programme". We are currently in the process of setting up a joint umbrella mechanism in Nairobi, under the Division of Environmental Conventions, for supporting the implementation of these two very important but extremely fragile conventions.

.Mr Chairman, for the first time since 1994, UNEP has provided substantial support from its Environment Fund to the programmes of work of several regional seas conventions and action plans, including the Lima Convention for the Southeast Pacific, the Cartagena Convention, the Nairobi and Abidjan Conventions, and the South Asian Seas Cooperative Environment Programme (SACEP). In this line, I appreciate the recognition given earlier by Mr Chabason to

the support provided by UNEP to the public awareness and information activities of the Mediterranean Action Plan.

As one of the three implementing agencies of the Global Environment Facility (GEF), UNEP has helped promote GEF-funded projects implemented through the regional seas conventions and action plans. For example, UNEP is currently in the finalization of a US\$34 million project for the integrated management of the marine and coastal environment of the South China Sea with a strong focus on coral reefs, mangroves and sea-grass beds. GEF-funded projects have been approved, or are in the pipeline, that support the Cartagena Convention, the Nairobi Convention, the Jeddah Convention for the Red Sea and the Gulf of Aden, as well as the South China Sea Project for the East Asian Seas Action Plan. Of course, you are aware of the earlier support from GEF, through UNEP, for the protection of the Mediterranean Monk Seal.

Mr Chairman, twelve of the planet's sixteen regional seas conventions and action plans, all those involving developing countries, as well as the Bucharest Convention for the Black Sea, were brokered by UNEP. Many, such as the Barcelona and Kuwait Conventions, pre-date the global environment conventions, excluding CITES. We are currently supporting the negotiations for two new regional seas conventions. In February of the year 2000 in Panama, UNEP will be supporting the Meeting of High-Level Government Designated Experts to review the draft conventions and draft action plan for the East Central Pacific which will extend from Panama to Mexico, but may include the United States and Canada.

In providing programmatic support to the regional seas conventions and action plans, UNEP is stressing two major international initiatives or common denominators: the Global Programme of Action for the Protection of the Marine Environment from Land-Based Sources of Pollution and the Global International Water Assessment funded partially by the GEF.

In addition to the revitalization of the regional seas conventions and action plans, UNEP's Division of Environmental Conventions is focusing on facilitating collaboration among environmental conventions.

From 5 to 8 July, of this year in The Hague, we held the second global meeting of regional seas conventions and action plans which is referred to on page 21 of this Meeting's document (UNEP(OCA)/MED 12/3). In addition to the twelve regional seas conventions and action plans, the meeting was attended by the Helsinki Convention for the Baltic Sea, OSPAR for the North Atlantic and PAME (Protection of the Arctic Marine Environment). Global Conventions and related international agreements that were represented included the Law of the Sea Secretariat, the Coordination Office of the Global Programme of Action for the Protection of the Marine Environment from Land-based Sources of Pollution, the Climate Change Convention Secretariat, the CITES Convention Secretariat, the Convention on Biological Diversity, the International Coral Reef Initiative Secretariat, and the Marine Mammal Action Plan. With the participation of twenty-one secretariats of environmental conventions and related international agreements, this was the largest consultation meeting among environmental conventions and related agreements ever held. The meeting produced three major results:

1. The furtherance of the revitalization of the regional seas conventions and action plans through concrete proposals;
2. The initiation of a process of horizontal cooperation between the more developed regional seas conventions and action plans and those that are less developed and mature, and;
3. Closer collaboration between regional seas conventions and action plans and global conventions and related agreements, particularly biodiversity-related agreements. The report can be made available through the RCU in Athens.

Earlier this week in Bonn, UNEP organized the first consultation meeting on scientific and technical matters of environmental conventions to explore areas for future collaboration, particularly in developing synergies among scientific and technical assessments. A small group of conventions was invited to this consultation: the UNFCCC, the UNCCD, the Convention on Biological Diversity, the Vienna Convention and its Montreal Protocol on the ozone layer, the CITES Convention, the Ramsar Convention on Wetlands, the Rotterdam Convention on Prior Informed Consent on International Trade in Hazardous Chemicals and three regional seas convention: the Helsinki Convention, the Barcelona Convention, and the Cartagena Convention. Of the different results of the meeting, there is one that I would like to highlight. This group will serve as an advisory board to the work launched by UNEP and the World Bank in the follow-up to the first interlinkages assessment report. Could also be made available through Athens

The first interlinkages assessment report entitled "Protecting Our Planet - Securing Our Future" is an ambitious initiative that stresses the importance of linking eight major global environmental problems - most of which have underlying legal instruments only in freshwater resources does a legal instruments not exist--, deforestation is under way.(climate change, loss of biological diversity, desertification and land degradation, ozone depletion, deforestation, persistent organic pollutants, degradation of freshwater resource, and deterioration of the marine environment) in addressing the basic human needs of food security, the demand for quality freshwater, the demand for energy and employment, and health and security. In this important initiative, UNEP is committed to fully engaging the regional seas conventions and action plans.

Mr Chairman, I hope that my presentation has been helpful in stressing the importance that UNEP has given to revitalizing the regional seas conventions and action plans and to facilitating meaningful collaboration among environmental conventions. I also believe that a mature and developed convention such as the Barcelona Convention can provide invaluable horizontal cooperation to less developed regional seas conventions and action plans in areas such as land-based sources of pollution, sustainable tourism, marine pollution control and sustainable development indicators. It can also play a critical role in the evolving field of promoting scientific and technical interlinkages among environment conventions. Regional seas conventions are particularly well placed to support the implementation of global conventions within their regions. For example, the above-mentioned Hague meeting called for UNEP and the CBD Secretariat to explore modalities and possibilities for involving the regional seas conventions more closely in the implementation of the Jakarta Mandate of the Convention on Biological Diversity on the Sustainable Use and Conservation of Marine and Coastal Biological Diversity.

Mr Chairman, thank you and once again Congratulations for a very successful meeting.

AGENDA

1. Opening of the meeting
2. Rules of procedure
3. Election of officers
4. Adoption of the Agenda and organization of work
5. Credentials of representatives
6. Progress Report of the Executive Director on the implementation of the Mediterranean Action Plan in 1998-1999 (Ministerial segment)
7. General discussion on environment and sustainable development in the Mediterranean region (Ministerial segment)
8. Proposed recommendations and programme budget for 2000-2001 biennium and contributions by the Contracting Parties to the Mediterranean Trust Fund (MTF) for 2000-2001 biennium
9. Date and place of the Twelfth Ordinary Meeting of the Contracting Parties in 2001
10. Other business (Proposal by Turkey for a RAC on Training)
11. Adoption of the report of the meeting
12. Closure of the meeting

ANNEX IV
RECOMMENDATIONS AND PROGRAMME BUDGET
AS APPROVED BY THE CONTRACTING PARTIES
FOR THE 2000-2001 BIENNIUM

1. RECOMMENDATIONS APPROVED BY THE CONTRACTING PARTIES:**I. COORDINATION****A. LEGAL AND INSTITUTIONAL FRAMEWORK****A.1 Legal framework****(a) Recommendations addressed to the Contracting Parties**

1. To give high priority to the implementation of the MAP legal instruments.
2. To notify to the Depositary, in writing, and as soon as possible, their acceptance of the amendments to the Convention for the Protection of the Mediterranean Sea against Pollution, the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft (Dumping Protocol), and the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources (LBS Protocol).
3. If they have not already done so, to ratify, accept or approve, or accede to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean and its three Annexes (SPA and Biodiversity Protocol), the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Offshore Protocol), and the Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movement of Hazardous Wastes and their Disposal (Hazardous Wastes Protocol).
4. To review their countries' position with respect to other pertinent international conventions, protocols and agreements and to ensure the early signature and/or ratification of those instruments which may have a positive influence on the Mediterranean Basin.
5. To convene, as appropriate and subject to the availability of external funding, a meeting of plenipotentiaries for the adoption of amendments to the Emergency Protocol.

(b) Recommendations addressed to the Secretariat

1. To request the Secretariat (MEDU) to assist the Contracting Parties in their efforts to adhere to the MAP legal instruments.
2. To invite the Secretariat (MEDU) to assist the Contracting Parties to incorporate MAP legal instruments in their national legislation.
3. To invite the Secretariat (MEDU & RACs) to take the necessary action to make MAP and its legal instruments better known in the Mediterranean region, as well as outside the region.
4. To request the Secretariat (MEDU & RACs) to assist the Contracting Parties in their efforts to report regularly to the Secretariat on the measures undertaken to implement the Convention and its Protocols, as well as decisions of the Meetings of the Contracting Parties.

5. To request the Secretariat (MEDU) to continue and finalize its work on the MAP Reporting System, including MCSD concerns, with the assistance of a group of experts composed of the members of the Bureau, and submit the final report to the Bureau of the Contracting Parties for its consideration and approval.
6. To invite the Secretariat (MEDU & RACs) to organize a training programme on Mediterranean environmental law for government-nominated legal and technical personnel at the national level involved in the implementation of the Barcelona Convention system and in the handling of other relevant issues concerning legal and institutional protection of the Mediterranean marine and coastal environment.
7. To request the Secretariat (MEDU) to follow further developments at the international level and, to convene, when appropriate in the year 2001, a second meeting of legal and technical experts on liability and compensation.
8. To organize training courses on the MAP programme every year for national officials at MEDU.

A.2 Institutional framework

Recommendations addressed to the Secretariat

1. To abolish the practice of the examination of BP and PAP activities at the beginning of the regular meetings of MAP National Focal Points and request the Secretariat to organize a joint meeting for BP/RAC, PAP/RAC and ERS/RAC National Focal Points.
2. To assess the relevance of the 100 historic sites programme and its role in the context of MAP Phase II objectives, taking also into account the work programme of the MCSD, as well as the work being carried out by other organizations, and to present all the options and recommendations to the next Meeting of the Contracting Parties.
3. To continue the process of programme assessment and financial evaluation of MAP and RACs by finalizing the one of PAP/RAC and undertaking the evaluation of at least two other RACs (including BP/RAC during the biennium) as well as the overall MAP structure (Appendix I on "Recommendations on MED Unit, MED POL and RACs Structure" as adopted by the Contracting Parties in Tunis UNEP(OCA)/MED IG.11/10), and to that end to hold an expert meeting to develop a methodology for cost-benefit assessment to be applied to all MAP structures and activities, including statements of accounts.

B. MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT (MCSD)

Recommendations addressed to the Contracting Parties

The following MCSD recommendations and proposals for action were approved:

- Information, public awareness, environmental education and participation (Annex IV, Appendix I of this report);

- Indicators for sustainable development in the Mediterranean (Annex IV, Appendix II of this report);
- Tourism and sustainable development (Annex IV, Appendix III of this report).

C. INFORMATION AND PARTICIPATION

(a) Recommendations addressed to the Contracting Parties

- a. To approve the recommendations as proposed in the MAP Information Strategy (Annex IV, Appendix IV to this report).
- b. To invite the Contracting Parties to implement the MCSD recommendations on "Information, Awareness, Environmental Education and Public Participation".

(b) Recommendations addressed to the Secretariat

- a. To invite the Secretariat (MEDU and RACs) to implement the MAP Information Strategy.
- b. To invite the Secretariat (MEDU and RACs) together with NGOs and other actors to assist the countries in implementing the MCSD recommendations on "Information, Awareness, Environment Education and Public Participation".

D. Cooperation and coordination with United Nations Agencies, Convention Secretariats, IGOs and other institutions

Recommendations addressed to the Secretariat

1. To invite the Secretariat (MEDU and RACs) to further strengthen its cooperation with relevant United Nations Agencies, Environmental Convention Secretariats and other intergovernmental organizations:
 - with WHO, IAEA, WMO, IOC/UNESCO, FAO/GFCM and IMO, as well as other related United Nations agencies, in the implementation of programmes for the prevention of marine pollution and the protection of marine resources;
 - with GEF, METAP, the European Environment Agency and the European Commission in the context of the Euro-Mediterranean Partnership, including the exchange of information and experience;
 - with the UN/Commission on Sustainable Development, UN/ECE and other UN Agencies in the implementation of MCSD programme;
 - with the Arab League Council of Arab Ministers in charge of the environment in the fields of water resources management, industrial pollution, education and public awareness, training, coastal management

and the various themes of the MCSD;

- with CEDARE and the "European Sustainable cities campaign" on sustainable development, coastal management, information and public awareness;
 - with the Black Sea Secretariat concerning marine pollution;
 - with CBD, CCD and FCCC, the Ramsar Convention and other multi-lateral environmental agreements, in the establishment of operational linkage.
2. To invite the Secretariat (MEDU and RACs) to prepare projects to be financed by MEDA/SMAP.

E. COOPERATION AND COORDINATION WITH NON-GOVERNMENTAL ORGANIZATIONS (NGOS)

(a) Recommendations addressed to the Contracting Parties

1. To adopt the recommendations suggested by the MAP/NGO Working Group and reviewed by the Bureau of the Contracting Parties as presented in Annex IV, Appendix V to this report.
2. To invite the Contracting Parties to implement the various recommendations relevant to cooperation with NGOs, as presented in Annex IV, Appendix V to this report.
3. To include the following Non-Governmental Organizations in the NGO/MAP list of Partners, subject to verification by the Bureau when the application does not meet all the selection criteria:

Academia Mediterranea Halicarnassensis (Turkey)
 AMWAJ of the Environment (Lebanon)
 Arab NGO Network for Environment and Development (RAED) (Egypt)
 Centre Méditerranéen de l'environnement (CME), France
 Clean up Greece (Greece)
 Cyprus Conservation Foundation (Cyprus)
 Environnement et Développement au Maghreb (ENDA) (Morocco)
 European Environmental Policy and Law Institute (EEPALI) (Greece)
 Lebanese Environment Forum (LEF) (Lebanon)
 Legambiente (Italy)
 Sea Turtle Protection Society of Greece (STPS) (Greece)
 Underwater Research Society/Mediterranean Seal Research Group (SAD/AFAD) (Turkey)

4. To authorize the Bureau to review the existing list of partners to verify that they meet the new selection criteria and to report back to the Contracting Parties;

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (MEDU & RACs) to implement the various recommendations concerning MAP/NGOs cooperation presented in Annex IV,

Appendix V to this report.

2. To invite the Secretariat (MEDU & RAC's) to further strengthen their cooperation and assistance to Mediterranean NGOs incorporated in the NGO/MAP list of Partners, giving qualified environmental priorities to those active in the East and South Mediterranean.
3. To reflect further on the need to add additional criteria for the selection of and cooperation with MAP/NGO partners.

F. MEETINGS AND CONFERENCES ORGANIZED WITHIN THE MAP FRAMEWORK (MEDU & RACS)

Recommendations addressed to the Secretariat:

1. To invite the Secretariat to convene the proposed meetings as reflected in the Budgetary Component Section;
2. To invite the Secretariat (MEDU & RACs) to strictly observe the relevant rules concerning dispatching invitations and documents for the various MAP meetings;
3. To invite the Secretariat (MEDU & RACs) to improve and upgrade the form of presentation of MAP documents, reports and information material;

II. COMPONENTS

A. POLLUTION PREVENTION AND CONTROL

(a) Recommendations addressed to the Contracting Parties

(a) Land-based pollution assessment and control activities

1. To give emphasis to the implementation of action-oriented pollution control activities and, to this end, to give priority to the implementation of the activities of the SAP and especially to those included in the GEF Mediterranean Project; in particular, activities related to pollution hot spots where the full cooperation and contribution of the countries are indispensable for their success.
2. To formulate and implement monitoring programmes, including trend monitoring, biological effects monitoring and biological monitoring, where feasible, as well as compliance monitoring related to the control and enforcement of national and regional legislation.
3. To continue and strengthen cooperation with the competent UN Cooperating Agencies, Regional Activity Centres, intergovernmental and international organizations, sub-regional agreements and programmes and, as appropriate, non-governmental organizations for the implementation of the SAP and other MED POL-related activities approved by the Contracting Parties. In particular, to welcome the continued cooperation with WHO in relation to pollution control activities, the very positive cooperation established with GEF, FFEM, METAP and the other supporting organizations for the implementation of the Mediterranean GEF Project and the important contribution from RAMOGE for the

implementation of activities related to biological effects monitoring.

4. To establish Inter-ministerial National Committees for full coordination of the activities related to the implementation of the Mediterranean GEF Project.
5. To adopt the Guidelines for the Management of Dredged Material which were prepared by the Secretariat in close cooperation with government-designated experts as part of the implementation of the Dumping Protocol (Annex IV, Appendix VI to this report).

(b) Sea-based pollution prevention and control activities

1. To continue to support REMPEC in the revision process of the Emergency Protocol in order to ensure its modernization and bring it into line with the recently revised Barcelona Convention and its other related Protocols.
2. To agree to the resolution approved by the Meeting of REMPEC Focal Points held in Malta 25 - 28 November 1998, aimed at creating a new post of administrator, as provided for in the budget for the next biennium.
3. To support REMPEC in its endeavours when implementing the programme of activities under the E.C. MEDA project on port reception facilities.
4. To utilize and adhere to the POLREP system for the exchange of information when accidental pollution of the sea has occurred or when a threat of such pollution is present.
5. To promote, either individually or through bilateral or multilateral co-operation, aerial surveillance as a means of monitoring violations of existing regulations for the prevention of pollution from ships.
6. To support the establishment of a Mediterranean Technical Working Group, co-ordinated by REMPEC, which will work, as a minimum, by correspondence and whose function will be to facilitate the exchange of technical data and other scientific and technological information aimed at assessing the nature, exposure and risks from accidental marine pollution and promoting remedies for such pollution in the Mediterranean Sea area
7. To provide the necessary support to enable the Secretariat to start the process of considering the issue of the prevention of pollution from non-commercial pleasure-craft activities.
8. To give high priority to finding a solution to the problem of providing REMPEC with the necessary personnel so that it can carry out its new responsibilities in the field of the prevention of pollution from ships. A practical solution, at no cost to the MTF, may be found through the mechanism of seconding a professional officer from a country to the Centre on a temporary basis or under a rotation system.

(c) Cleaner production and sustainable development

1. To invite the Contracting Parties to promote and stimulate the introduction of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) within Mediterranean companies.

(b) Recommendations addressed to the Secretariat:

(a) Land-based pollution assessment and control activities

1. To request the Secretariat (MED POL) to continue to assist countries in the preparation, finalization and implementation of their National Monitoring Programmes which should include monitoring of trends, biological effects monitoring and compliance monitoring.
2. To request the Secretariat (MED POL) to work on the processing and analysis of the data resulting from trend monitoring and to give priority to the implementation of data quality assurance programmes.
3. To request the Secretariat (MED POL) to give special emphasis to the organization of activities related to compliance with, and enforcement of, regional and national legislation related to land-based pollution and, accordingly, to establish, organize and coordinate the work of an Informal Network on Compliance and Enforcement.
4. To request the Secretariat (MED POL) to reorganize the research component of MED POL Phase III by identifying and following up on a regular basis emerging pollution issues in cooperation with National Coordinators, Mediterranean scientists and the competent UN Cooperating Agencies in order to formulate relevant studies, assessments and research projects to be carried out by Mediterranean national institutions.
5. To request the Secretariat (MED POL) to cooperate fully with the GEF Secretariat for the coordination of the Mediterranean GEF Project and, accordingly, to give priority during the biennium to the MED POL activities related to pollution control included in the GEF Project and in the SAP.
6. To request the Secretariat (MEDU and MED POL) to finalize the role and involvement of Implementing and Cooperating Agencies for the Mediterranean GEF project, notably with regard to METAP.
7. To request the Secretariat (MED POL) to start the process of updating the SAP by taking into account developments in the scientific, technical, economic, environmental and legal fields in order to ensure effective implementation of the SAP.
8. To request the Secretariat (MED POL) to continue the work related to the preparation of the necessary Guidelines as requested by articles 4 and 6 of the 1995 Dumping Protocol, with a view to their adoption by the Contracting Parties.
9. To invite the Secretariat (PAP/RAC) to implement the "Economic Instruments" activity of the GEF-funded SAP MED project, and to use the findings of this project in preparing bankable projects to follow PAP/RAC activities and MAP CAMP programmes, once they are completed.

(b) Sea-based pollution prevention and control activities

1. To request the Secretariat (REMPEC), in co-ordination with UNEP/MAP, to continue and finalize the work for the revision of the Emergency Protocol.

2. To instruct the Secretariat (REMPEC) that, as regards the provision concerning the prevention of pollution of ships, no activity should be initiated other than the programme on port reception facilities for which financing is presently being considered by the E.U. within the framework of the MEDA programme until such times that the necessary personnel are made available.
 3. To request the Secretariat (REMPEC and MEDU) to endeavour to obtain the necessary external funds to start the process of considering the issue of the prevention of pollution from non-commercial pleasure-craft activities.
- (c) Cleaner Production and Sustainable Development*
1. To invite the Secretariat (CP/RAC) to implement all the activities as approved by the Spanish Government and the Contracting Parties
 2. To participate and actively cooperate with the Industry and Sustainable Development Group and with the "Tourism and Environment Group" within the MCSD.
 3. To invite the Secretariat (CP/RAC) to organise the Third CP/RAC NFP meeting by 2001, and four training workshops, two about general methodology and another two about textile and agroindustry sectors during the biennium 2000-2001. The conclusions of these workshops will be published in a manual or guide.
 4. To request the Secretariat (CP/RAC) to continue publishing and disseminating the MedClean case studies and the CPNews bulletin, as well as to launch an annual technical publication about waste minimisation experiences and studies.
 5. To invite the Secretariat (CP/RAC) to compile a database of free voluntary experts interested in collaborating and providing technical support to cleaner production initiatives.
 6. To invite the Secretariat (CP/RAC) to help Mediterranean companies to prioritise demonstration projects and to promote bilateral projects of co-operation.
 7. To invite the Secretariat (CP/RAC) to launch a Cleaner Production Congress within 2 or 3 years to share experiences and present initiatives taken by Mediterranean countries regarding pollution prevention and waste minimisation, and notably in the olive branch.
 8. To invite the Secretariat (CP/RAC) to create a Mediterranean Cleaner Production award to honour those pollution prevention initiatives carried out by Mediterranean companies or individuals.
 9. To invite the Secretariat (CP/RAC) to improve and develop a CP/RAC NFP network through the Web.

* All CP/RAC activities are subjected to the approval of concrete actions by the Spanish Government.

B. CONSERVATION OF BIOLOGICAL DIVERSITY

B.1 Collection of data and periodic assessment of the situation

4. Recommendations

(a) Recommendations addressed to the Contracting Parties

1. To adopt the reference classification of benthic marine habitat types for the Mediterranean region (Annex IV, Appendix VII of this report).
2. To adopt the general framework of the Draft Standard Data-Entry Form for National Inventories of Natural Sites of Conservation Interest and, as an exceptional case, to mandate to the Bureau to adopt the final version of the Form by the first half of the year 2000 on the basis of the results of a meeting of experts to be convened as soon as possible.
3. To invite the Secretariat (SPA/RAC) to convene a meeting of experts for the further elaboration of the draft Form.
4. To evaluate and, where necessary, improve the information on the status and trends of marine habitats mentioned at the reference list of habitats for the selection of sites to be included in the National Inventories of Natural Sites of Conservation Interest in the areas under their sovereignty and jurisdiction.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (RAC/SPA) to assist the Mediterranean countries in applying the adopted criteria for the preparation of national inventories of natural sites of conservation interest, focussing for the biennium 2000-2001 on marine sites to be identified by the presence of priority habitats, in particular meadows and biogenic constructions (*Lithophyllum* rim and coralligenous)
2. To request the Secretariat (RAC/SPA) to convene in the year 2001, a meeting of experts on coastal (terrestrial and wetland) habitat types in the Mediterranean region.

B.2 Planning and management

(i) Implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles

(a) Recommendations addressed to the Contracting Parties

1. To adopt the Action Plan for the Conservation of Mediterranean Marine Turtles, including the List of Priority Actions for further implementation of the Action Plan (Annex IV, Appendix VIII of this report).
2. To invite the Contracting Parties to foster the involvement of the fishing sector in the conservation of marine turtles in the Mediterranean.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (RAC/SPA) to convene the first Mediterranean Conference on marine turtles, to be jointly organized with the Secretariats of the Convention on Migratory Species of Wild Animals and of the Convention on the Conservation of European Wildlife and Natural Habitats, and in collaboration with other concerned Organizations.
2. To invite the Secretariat (RAC/SPA) to work on the preparation of:
 - an inventory of marine turtle nesting, mating, feeding and wintering areas and migration routes all around the Mediterranean, compiling and synthesising the information in an Atlas;
 - a directory of marine turtle specialists in the Mediterranean;
 - training and information/awareness modules and tools addressed to fishermen, aimed at reducing the mortality of marine turtles incidentally caught in fishing gear.

(ii) Implementation of the Action Plan for the Management of the Mediterranean Monk Seal**(a) Recommendations addressed to the Contracting Parties**

1. To adopt the recommendations of the Meeting of experts on the implementation of the action plans for marine mammals (monk seal and cetaceans) adopted within MAP (Arta, 29-31 October 1998) on topics to be addressed as a matter of priority in the further implementation of the Action Plan for the management of the Mediterranean monk seal (see Annex IV, Appendix IX of this report). To invite the Contracting Parties to implement those recommendations pertaining to their responsibility.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (RAC/SPA) to assist the Contracting Parties in improving their knowledge of monk seal population size and parameters, habitat use and movement.

(iii) Implementation of the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea**(a) Recommendations addressed to the Contracting Parties**

1. To ratify, if they have not done so, the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area.
2. To grant a legal protection status if they have not done so, to the cetacean species appearing in the Annex II to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.
3. To promote the establishment of national networks for the monitoring of cetacean strandings.

- 4 To adopt the recommendations proposed by the Meeting of Experts on the implementation of the Action Plans for marine mammals (monk seal and cetaceans) adopted within MAP (Arta, 29-31 October 1998), on topics to be addressed as a matter of priority in the further implementation of the action plan for the management of the Mediterranean Cetaceans (see Annex IV, Appendix X of this report) and to implement those recommendations pertaining to their responsibility.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (RAC/SPA) to assist the Contracting Parties in the establishment of national networks for the monitoring of cetaceans, and to ensure to the extent possible the co-ordination at Mediterranean level among the national networks.
2. To invite the Secretariat (SPA/RAC) to organise a coordination/training workshop to prepare concerted monitoring methods to be proposed for use by the Mediterranean teams.

(iv) Implementation of the Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea

(a) Recommendations addressed to the Contracting Parties

1. To adopt the Action Plan for the conservation of marine vegetation in the Mediterranean Sea, as contained in Annex IV, Appendix XI of this report, and to see that the measures it provides for are implemented according to the timetable annexed to the Action Plan.
2. To adopt and implement the recommendations of the Workshop on Invasive *Caulerpa* species in the Mediterranean (Heraklion, 19-20 March 1998).

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (SPA/RAC), acting as the coordination structure for the Action Plan for the conservation of marine vegetation in the Mediterranean Sea, to contribute to the implementation of the Action Plan according to the timetable annexed to it.
2. To entrust the Secretariat (SPA/RAC) with the task of coordinating the collection and dissemination of information validated by each Party on invasive *caulerpa* species and the follow-up to the recommendations of the Heraklion Workshop (18-20 March 1998).

(v) Development of Specially Protected Areas

(a) Recommendations addressed to the Contracting Parties

1. To give high priority during the biennium 2000-2001, to the identification of marine sites possessing sensitive, threatened or rare habitats with a view to establishing marine protected areas; and to give every support to the improvement of the management of marine protected areas.

2. To support the formulation and implementation of a regional project for the protection of sites and elements of Mediterranean marine and coastal biodiversity, to be developed in the framework of the MEDA/SMAP programme.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (SPA/RAC) to assist the Mediterranean countries in establishing new SPAs to protect sensitive, threatened or rare marine habitats and to improve the management of marine sites already protected in that area.

(vi) Conservation of Biological Diversity

(a) Recommendations addressed to the Contracting Parties

1. To improve knowledge of marine biodiversity in areas under their sovereignty and jurisdiction, and to take marine biodiversity duly into account in the elaboration of their plans and strategies.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (RAC/SPA) to continue to assist the Contracting Parties in improving knowledge of their biodiversity, and notably the marine component, and to develop strategies and plans for its conservation and management.

B.3 Public information

(a) Recommendations addressed to the Contracting Parties:

1. To use, where appropriate, the documents published by RAC/SPA on the design and implementation of information and awareness campaigns addressed to those who are concerned with the sustainable management and protection of biodiversity at the national and local levels.
2. To inform SPA of achievements at the national and local levels in the fields of implementation of Action Plans for the conservation of endangered species and the development of specially protected areas.

(b) Recommendations addressed to the secretariat:

1. To invite the Secretariat (RAC/SPA) to summarize available scientific data in technical publications, including those of RAC/SPA, so as to present them in a more readily comprehensible form for less specialized readers.
2. To invite the Secretariat (RAC/SPA) to summarize successful projects in various countries of the region, with a view to presenting them in more readily comprehensible forms to national institutions of the region, thus making them better known and facilitating the exchange of experience.
3. To invite the Secretariat (RAC/SPA) to publish a liaison/information bulletin (BIO-MED) aimed at disseminating summaries that are being prepared and national experience to all countries of the region (specialized institutions, natural resources managers, NGOs, etc.)

4. To invite the Secretariat (RAC/SPA) to develop its website and use it to disseminate the summaries that are being prepared.

B.4 Exchange of experience and strengthening of national capabilities

Recommendations addressed to the Secretariat

To invite the Secretariat (RAC/SPA) to continue to assist the Mediterranean countries in improving their national capabilities in the field of the conservation and management of the natural heritage, and to seek additional funding from external sources.

C. SUSTAINABLE MANAGEMENT OF COASTAL ZONES

(a) Recommendations addressed to the Contracting Parties:

General

1. To support the drawing up and concerted implementation of a regional programme for the sustainable management of coastal areas, pooling the means available from MEDA/SMAP, MAP, and the Countries.
2. To strengthen the institutional mechanisms which contribute towards better land planning, particularly laws on the protection of the coasts, and planning and protection agencies.
3. To invite concerned authorities and relevant partners to give due consideration to MCSD recommendations on the sustainable management of coastal regions.

ICAM

4. To review the countries' position with respect to incorporating ICAM in their respective national legislation, with special emphasis on legal enforcement and implementation of ICAM policies.
5. To support and assist the national and local institutions in using methodologies, tools and techniques for the implementation of ICAM, developed by MAP, notably in regard to coastal industries.

MAP/CAMPs

6. To invite the authorities of Algeria, Lebanon, Malta, Morocco and Slovenia to support the preparation and implementation of CAMPs in their countries. The objectives of these CAMPs should be clearly stated in MAP CAMP agreements. Furthermore, CAMPs should be focussed on fewer fully implementable activities, with a strong sectorial integration approach. National teams for the implementation of CAMPs should consist of highly qualified experts with experience in integrated coastal area management.
7. To invite authorities in countries where MAP CAMPs are completed, to prepare and implement a follow-up programme in cooperation with MAP.

Remote sensing

8. To widen the use of remote sensing-derived information and its integration in information from other sources, in planning and decision-making processes for the sustainable management of coastal zones.

(b) Recommendations addressed to the Secretariat:

Euro-Mediterranean Partnership

1. To invite the Secretariat (MEDU with concerned RACs, such as PAP, BP, ERS) to draw up and implement a regional MEDA/SMAP programme on the sustainable management of coastal areas, including consolidation of the necessary knowledge (assessment of changes in land use, institutional analyses..), the networking of pilot operations in the regions, and the consolidation of national and local level activities.

ICAM

2. To invite the Secretariat (PAP/RAC) to continue to support the Contracting Parties in implementing ICAM plans and programmes and to provide technical assistance for ICAM when specifically required by Contracting Parties.
3. To invite the Secretariat (PAP/RAC) to continue institutional strengthening and capacity building of Contracting Parties' national and local institutions regarding ICAM preparation and implementation, by means of regional and national training courses, and to enlarge the information component by increased publishing and dissemination (including electronic means) of methodological documents, programme results and other achievements.
4. To invite the Secretariat (PAP/RAC) to continue development of ICAM tools and techniques, specifically SEA, EIA, CCA for tourism, coastal information systems, economic instruments, and land and sea use planning systems.
5. To invite the Secretariat (PAP/RAC) to test guidelines for integrated coastal area and river basin management.

MAP CAMPs

6. To invite the Secretariat (BP/RAC) to assist national and local authorities in better anticipating developments by consolidating prospective approaches and related information systems, particularly within the framework of the CAMPs.
7. To invite the Secretariat (PAP/RAC) to co-ordinate the various MAP activities in relation to CAMPs, within the overall coordination responsibility of the Coordinating Unit
8. To invite the Secretariat (PAP/RAC) to prepare CAMP feasibility studies, CAMP programmes and agreements, and to implement the on-going MAP CAMPs and those which it has already been decided to implement, in cooperation with all relevant partners.
9. To invite the Secretariat (PAP/RAC) to suggest countries where MAP CAMPs are completed the introduction of new or the adaptation of existing economic

instruments which would enable the follow-up of CAMPs, and to assist those countries in preparing bankable projects which will represent the continuation of MAP CAMPs.

10. To invite the Secretariat (ERS/RAC) to contribute, in the framework of a close cooperation among the MAP components, to the implementation of ongoing and future CAMPs, including capacity building activities in cooperation with all relevant partners.

MCSD

11. To invite the Secretariat (PAP/RAC) to support the follow up of MCSD recommendations on ICAM and stimulate the introduction of national legislation for ICAM.
12. To invite the Secretariat (PAP/RAC) to support the MCSD Working group on urban management and to help formulate recommendations for sustainable growth of Mediterranean cities.
13. To invite the Secretariat (PAP/RAC) to provide support to the MCSD working groups on other activities of MCSD which are relevant to PAP/RAC.

Remote sensing

14. To invite the Secretariat (ERS/RAC) to assist Mediterranean countries in the field of monitoring of environmental issues through remote-sensing techniques, and to support activities of other MAP components with remotely sensed information and data, and their integration with ones from other sources.
15. To invite the Secretariat (ERS/RAC) to continue strengthening its central role for exchange with Mediterranean countries of information on remote sensing applications, through meetings, direct contacts, inventories, as well as through the further development of its web site on the Internet.
16. To invite the Secretariat (ERS/RAC) to endeavour to extend to a Mediterranean dimension the results achieved through its projects, in order to help improving environmental knowledge and understanding in support to the decision-making processes.
17. To invite the Secretariat (ERS/RAC) to assist Mediterranean countries in setting-up activities for monitoring state and changes of priority environmental issues (i.e. desertification, coastal changes, urban expansion), seeking also external sources for funding.
18. To invite the Secretariat (ERS/RAC) to convene meetings of the National Focal Points on a regular basis, jointly with the focal point meetings for PAP/RAC and Blue Plan, while soliciting external funds for this purpose.

D. INTEGRATING ENVIRONMENT AND DEVELOPMENT**D.1. Observation and prospective study of the environment and development
Assessment of progress towards sustainable development in the Mediterranean****(a) Recommendations addressed to the Contracting Parties**

1. To invite the Contracting Parties to implement the MCSD recommendations on indicators for sustainable development, as adopted in section I.B of this report.
2. To invite the Contracting Parties to give priority to actions devoted to acquiring a sound knowledge on environmental indicators at national level, with a view to extending such knowledge at the regional level, also making integrated use of remote sensing and other advanced techniques.
3. To invite the Contracting Parties to include in their legislation new economic instruments, or to adapt existing economic instruments, in order to make feasible follow-up of MAP related activities.
4. To invite the Contracting Parties to consolidate the policy assessment work which they are at present carrying out, and to promote the structural reforms and institutional tools which could assist in ensuring more effective action towards sustainable development.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (BP/RAC) to assist the Contracting Parties in their efforts to implement the MCSD recommendations as regards sustainable development indicators.
2. To invite the Secretariat (BP/RAC) to draw up an assessment comparing the actual situation in the year 2000 in the field of environment and development, with the 1985 Blue Plan scenario for the same year. A macro-economic assessment making it possible to update scenarios for 2025 will also be carried out to complement the retrospective and prospective demographic analysis carried out in 1999.
3. To invite the Secretariat (BP/RAC) to encourage and assist the countries in setting up and/or consolidating the functions of an Observatory for environment/development changes through the provision of methodological and technical support, cooperation and exchange of experience, with the aim of promoting a Mediterranean network;
4. To invite the Secretariat (BP/RAC) to assist countries in their assessment work: calculating the Indicators of Sustainable Development selected by the MCSD, mobilizing experts, and providing assistance to national observatories, organizing regional workshops, drawing up country profiles, and preparing a regional report on environment and development;
5. To invite the Secretariat (BP/RAC) to continue the analysis work on free trade and environment in the framework of the MCSD;

6. To invite the Secretariat (BP/RAC), in collaboration with WHO, to begin the assessment of some social and economic aspects of sustainable development (poverty, health) in relation to the environment;
7. To invite the Secretariat (BP/RAC) to take stock of exercises for assessing the costs incurred as a result of inadequate account being taken of the environment and the economic instruments which could be of use to the environment, and setting the ball rolling on this question at regional level;
8. To invite the Secretariat (BP/RAC) to consolidate communication and training activity in order to strengthen action and reflection towards sustainable development in the Mediterranean;
9. To invite the Secretariat (BP/RAC) to assist in the consolidation of environmental statistics in the countries, through notably the implementation of the MEDSTAT - Environment programme;
10. To invite the Secretariat (ERS/RAC) to check the present availability of information on indicators that can be monitored by remote sensing, and to cooperate with Mediterranean Countries, also providing them with scientific and technical assistance, in the monitoring of indicators through remote sensing.
11. To invite the Secretariat (ERS/RAC), in cooperation with other MAP Components, to support the MCSD in the preparation of programmes to be implemented in the framework of the MAP.
12. To invite the Secretariat (MEDU) to coordinate the preparation of a "Strategic Review for the year 2000" as requested by the MCSD terms of reference, and to see the necessary funds.

D.2 Tourism and Sustainable Development

(a) Recommendations addressed to the Contracting Parties:

1. To invite the Contracting Parties to implement the MCSD recommendations on tourism and Sustainable Development as adopted in section I.B of this report.
2. To invite the Contracting Parties to encourage their national and local authorities, and profit and non-profit organisations to apply, where appropriate, carrying capacity assessment for tourism activities as a common tool for sustainable development of tourism.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (BP/RAC) to assist the Contracting Parties in their efforts to implement the recommendations addressed to them.
2. To invite the Secretariat (BP/RAC) to prepare the "White Paper" on tourism and sustainable development in the Mediterranean in conjunction with countries and concerned partner experts.
3. To invite the Secretariat (PAP/RAC) to promote the use of carrying capacity assessment as a tool for the sustainable development of tourism, through the

enhancement of the capacity Mediterranean national and local institutions in specific touristic areas, and to continue offering technical assistance.

D.3. Urban Development and sustainable town management

(a) Recommendations addressed to the Contracting Parties:

1. To invite the Contracting Parties to contribute to the steps being taken within the MCSD framework to achieve relevant and worthwhile analysis and to carry out the proposed work programme.

(b) Recommendations addressed to the Secretariat:

1. To invite the Secretariat (PAP/RAC, BP/RAC and ERS/RAC) to continue and consolidate work begun on analyzing the problems related to urbanization and the sustainable management of Mediterranean cities, particularly within the MCSD framework.
2. To invite the Secretariat (BP/RAC) to carry out a retrospective analysis of developments and encourage the prospective approach through appropriate training and communication activities, and pilot operations.
3. To invite the Secretariat (BP/RAC) to further study the question of waste management in conjunction with the Mediterranean partners (States, towns, CEDARE, METAP, NGOs...), and to identify what strategies and actions should be encouraged in this field.

D.4 Rural development, natural areas and resources

(a) Recommendations addressed to the Contracting Parties.

1. To invite the Contracting Parties to give effective follow-up to the recommendations on water demand management. To this end, to develop a regional programme in line with the SMAP/Euro-Mediterranean Partnership, as well as national programmes in accordance with these recommendations.
2. To invite the Contracting Parties to integrate their national and local decision making system regarding use of coastal water resources.
3. To invite the Contracting Parties to continue and intensify activities related to erosion/desertification control management as an essential element of sustainable development in the region.
4. To invite the Contracting Parties to support the hitherto successful co-operation between FAO, PAP/RAC and BP/RAC in the field.

(b) Recommendations addressed to the Secretariat

1. To invite the Secretariat (BP/RAC) to assist the Contracting Parties in implementing the recommendations which they have adopted regarding water demand management.

2. To invite the Secretariat (BP/RAC) to develop training and communication activities aimed at circulating more widely the results of MCSD work on water at the level of the Mediterranean basin.
3. To invite the Secretariat (PAP/RAC) to implement the activity “Decision Support System for Coastal Water Resources Management” which will enable transfer of knowledge in use of modern and efficient tools and techniques in coastal water resources management, and to secure that decision-making be concentrated at the appropriate level.
4. To invite the Secretariat (PAP/RAC) to continue the activity related to erosion/desertification control and implementation of prevention and management techniques.

2. PROGRAMME BUDGET APPROVED BY THE CONTRACTING PARTIES FOR THE 2000-2001 BIENNIUM:

SUMMARY OF BUDGETARY ALLOCATIONS

	Proposed Budget (in US \$)	
	2000	2001
I. ADMINISTRATIVE AND OPERATING COSTS		
1. COORDINATING UNIT, Athens, Greece		
- Secretariat's Personnel and Operating Costs	905,500	921,000
- MEDPOL Personnel	428,000	435,000
- Operating Costs covered by the Greek Counterpart Contribution	400,000	400,000
2. MEDPOL COOPERATING AGENCIES	269,500	273,600
3. REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC)	573,000	585,000
4. BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)	480,000	490,500
5. PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)	364,000	375,000
6. SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)	291,000	295,500
7. ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)	-	-
8. CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)	-	-
	SUB-TOTAL	3,711,000 3,775,600
PROGRAMME SUPPORT COSTS*	430,430	438,828
TOTAL ADMINISTRATIVE AND OPERATING COSTS	4,141,430	4,214,428

* The Programme Support Costs of 13% is not charged to the Greek Counterpart Contribution.

	Proposed Budget (in US \$)	
	2000	2001
II. ACTIVITIES		
A. ACTIVITIES TO BE FUNDED THROUGH THE MTF (excluding the EU voluntary contribution)		
1. PROGRAMME COORDINATION	385,000	360,000
2. POLLUTION PREVENTION AND CONTROL	847,000	730,000
3. PROTECTION OF BIOLOGICAL DIVERSITY	123,000	143,000
4. SUSTAINABLE MANAGEMENT OF COASTAL ZONES	104,000	90,000
5. INTEGRATING ENVIRONMENT AND DEVELOPMENT	220,000	185,000
	SUB-TOTAL	1,679,000 1,508,000
PROGRAMME SUPPORT COSTS	218,270	196,040
TOTAL ACTIVITIES FUNDED THROUGH THE MTF	1,897,270	1,704,040

	Proposed Budget (in US \$)	
	2000	2001
B. ACTIVITIES TO BE FUNDED THROUGH THE EU VOLUNTARY CONTRIBUTION		
1. PROGRAMME COORDINATION	83,000	54,000
2. POLLUTION PREVENTION AND CONTROL	86,000	46,000
3. PROTECTION OF BIOLOGICAL DIVERSITY	150,000	110,000
4. SUSTAINABLE MANAGEMENT OF COASTAL ZONES	140,000	217,000
5. INTEGRATING ENVIRONMENT AND DEVELOPMENT	90,000	120,000
	SUB-TOTAL	549,000 547,000
TOTAL ACTIVITIES TO BE FUNDED THROUGH THE EU VOLUNTARY CONTRIBUTION	549,000	547,000

**AGGREGATE BUDGET COVERING ACTIVITIES , ADMINISTRATIVE AND OPERATING COSTS
FOR THE COORDINATING UNIT AND THE CENTRES:**

	Proposed Budget (in US \$)	
	2000	2001
COORDINATING UNIT, Athens, Greece		
TOTAL ACTIVITIES	468,000	414,000
TOTAL ADMINISTRATIVE COSTS	1,305,500	1,321,000
TOTAL	1,773,500	1,735,000
MEDPOL		
TOTAL ACTIVITIES	699,000	630,000
TOTAL ADMINISTRATIVE COSTS	697,500	708,600
TOTAL	1,396,500	1,338,600
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC)		
TOTAL ACTIVITIES	189,000	141,000
TOTAL ADMINISTRATIVE COSTS	573,000	585,000
TOTAL	762,000	726,000
BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)		
TOTAL ACTIVITIES	225,000	230,000
TOTAL ADMINISTRATIVE COSTS	480,000	490,500
TOTAL	705,000	720,500
PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)		
TOTAL ACTIVITIES	324,000	340,000
TOTAL ADMINISTRATIVE COSTS	364,000	375,000
TOTAL	688,000	715,000
SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)		
TOTAL ACTIVITIES	273,000	253,000
TOTAL ADMINISTRATIVE COSTS	291,000	295,500
TOTAL	564,000	548,500
ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)		
TOTAL ACTIVITIES	50,000	47,000
TOTAL ADMINISTRATIVE COSTS	0	0
TOTAL	50,000	47,000
CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)		
TOTAL ACTIVITIES	0	0
TOTAL ADMINISTRATIVE COSTS	0	0
TOTAL	0	0
PROGRAMME SUPPORT COSTS	648,700	634,868
GRAND TOTAL	6,587,700	6,465,468

SOURCES OF FINANCING

	2000	2001
A. Income		
MTF Contributions	4,839,689	4,936,483
Greek Counterpart Contribution	400,000	400,000
UNEP Counterpart Contribution	50,000	50,000
Total Contributions	5,289,689	5,386,483
Unpaid Pledges for 1998/99 and prior years	1,280,996	
Total expected income	11,957,167	
B. Commitments		
Commitments	5,390,000	5,283,600
Programme Support Costs	648,700	634,868
Total commitments	11,957,168	

	2000	2001
A. Income		
Voluntary Contribution of EU	549,054	546,634
B. Commitments		
Activities funded through the EU Voluntary Contribution	549,000	547,000
Total commitments	549,000	547,000

CONTRIBUTIONS FOR 2000-2001 (IN US DOLLARS):

Contracting Parties	%	Ordinary Contributions to MTF for 1999 (in US \$)	Ordinary Contributions to MTF for 2000* (in US \$)	Ordinary Contributions to MTF for 2001** (in US \$)
Albania	0.07	3,321	3,387	3,455
Algeria	1.05	49,821	50,817	51,834
Bosnia and Herzegovina	0.3	14,235	14,520	14,810
Croatia	0.97	46,024	46,944	47,883
Cyprus	0.14	6,643	6,776	6,911
EU	2.5	118,621	120,993	123,413
Egypt	0.49	23,250	23,715	24,189
France	37.97	1,801,597	1,837,629	1,874,382
Greece	2.81	133,328	135,995	138,714
Israel	1.47	69,748	71,143	72,566
Italy	31.37	1,488,441	1,518,210	1,548,574
Lebanon	0.07	3,321	3,387	3,455
Libya	1.97	93,473	95,342	97,249
Malta	0.07	3,321	3,387	3,455
Monaco	0.07	3,321	3,387	3,455
Morocco	0.28	13,286	13,552	13,823
Slovenia	0.67	31,790	32,426	33,074
Spain	14.99	711,244	725,469	739,978
Syria	0.28	13,286	13,552	13,823
Tunisia	0.21	9,964	10,163	10,367
Turkey	2.25	106,758	108,893	111,071
Sub-total	100	4,744,793	4,839,689	4,936,483
Host Country(Greece)		400,000	400,000	400,000
UNEP Environment Fund		50,000	50,000	50,000
TOTAL		5,194,793	5,289,689	5,386,483

* The 2000 Contributions represent a 2% increase over the 1999 Ordinary Contributions to the MTF.

** The 2001 Contributions represent a 2% increase over the 2000 Ordinary Contributions to the MTF.

Estimated Counterpart Contributions in Cash/Kind of Contracting Parties hosting Regional Activity Centres and of the U.N. Agencies participating in the MEDPOL Programme. The amounts have been provided to UNEP by the respective Centres and Agencies.

Countries		2000 (,000 US\$)	2001 (,000 US \$)
Croatia	PAP/RAC	150	150
France	BP/RAC	440	440
Italy	ERS/RAC	300	300
Malta	REMPEC	80	80
Spain	CP/RAC	625	625
Tunisia	SPA/RAC	90	90
U.N. Agencies			
WHO	MED POL	100	100
WMO	MED POL	50	50
IAEA	MED POL	300	300
UNESCO/IOC	MED POL	80	80

All figures except those from Malta and Spain are same as for previous biennium.

I. COORDINATION**I.A LEGAL COMPONENT**

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Legal assistance to the Secretariat	MEDU	15,000			15,000		
Assistance to countries to develop their national legislation and national enforcement of control mechanisms in line with the implementation of the Convention and its Protocols and the adopted protection measures	MEDU	5,000	10,000		5,000	10,000	
Training Programme for national officials on environment and institutional issues, including environmental law	MEDU	15,000	10,000	20,000	15,000	10,000	20,000
SUB-TOTAL ACTIVITIES		35,000	20,000	20,000	35,000	20,000	20,000

I.B MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT (MCSD)

Related activities are budgeted under the following sections: I.C, I.E, II.C and II.D.

I.C INFORMATION AND PARTICIPATION

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Publication and dissemination of MAP Technical Reports	MEDU	15,000			10,000		
Library services (environmental awareness and educational assistance)	MEDU	5,000					
Preparation, translation, Printing and dissemination of MAP Newsletter MEDWAVES (Arabic, English and French)	MEDU	40,000			40,000		
Support to public awareness campaigns at the national level	MEDU	20,000		20,000	20,000		20,000
Preparation, editing, translation, printing and dissemination of brochures and reports, including the use of the Internet	MEDU	50,000		20,000	30,000		20,000
Preparation of an information kit for the public and for the press	MEDU	20,000		10,000	10,000		10,000
Training on Information Strategy, tools, networking	MEDU	20,000		20,000*			20,000
Support to follow-up of MCSD on information and participation	MEDU		10,000	10,000		10,000	10,000
SUB-TOTAL ACTIVITIES		170,000	10,000	80,000	110,000	10,000	80,000

* Turkey has expressed its intention to provide requested additional support.

I.D COORDINATION AND COOPERATION WITH NON-GOVERNMENTAL ORGANISATIONS

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Support to non-governmental organisations and other major actors	MEDU	30,000	9,000	50,000	25,000	9,000	50,000
SUB-TOTAL ACTIVITIES		30,000	9,000	50,000	25,000	9,000	50,000

I.E MAJOR MEETINGS ORGANIZED WITHIN THE MAP FRAMEWORK AND RELATED ACTIVITIES

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
12th Ordinary Meeting of the Contracting Parties to review and approve the 2002-3 programme budget	MEDU						200,000 a
Meeting of the MAP National Focal Points to consider the progress of the Action Plan and prepare the 2002-3 programme budget	MEDU				70,000		
Sixth Meeting of the Mediterranean Commission on Sustainable Development (MCSD)	MEDU	30,000		50,000 b			
Seventh Meeting of the Mediterranean Commission on Sustainable Development (MCSD)	MEDU				20,000		60,000 c
Meetings of the Steering Committee on the Mediterranean Commission on Sustainable Development (one per year)	MEDU	20,000			10,000		10,000
Meetings of the Bureau (two per year) to review the progress of the Action Plan, advise the Secretariat on matters arisen since the meeting of Contracting Parties, and decide on programme/ budget adjustments	MEDU	35,000			35,000		
Meeting of the Regional Activity Centres' Directors and the Coordinating Unit for programming and coordination of MAP activities (one per year)	MEDU	5,000			5,000		
Second Meeting of Mediterranean Government designated experts on Liability and Compensation	MEDU				20,000		60,000
Presentation Conferences for CAMP projects (participation of RACs)	MEDU	30,000			20,000		
Follow-up of the recommendations of the MCSD (reporting, feasibility studies and assistance)	MEDU	20,000	9,000	30,000	10,000	15,000	30,000
Support for the preparation of the "Strategic Review of the Year 2000" (participation of RACs)	MEDU		20,000	50,000			

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Joint workshop with UNCSD on National Sustainable Development Strategies	MEDU	10,000	15,000	50,000 d			
Evaluation of the MAP structure	MEDU			60,000			
Evaluation of the Historic Sites Centre	MEDU			8,000			
Conference of Plenipotentiaries to adopt the amendments to the Emergency Protocol	MEDU			e			
SUB-TOTAL ACTIVITIES		150,000	44,000	248,000	190,000	15,000	360,000

- a: The Principality of Monaco has expressed its intention to host this Meeting and cover all expenses.
 b: Tunisia has expressed its intention to host this Meeting and partially cover the expenses.
 c: Turkey has expressed its intention to host this Meeting and partially cover the expenses.
 d: Funds secured from UN-CSD and Turkey.
 e: Malta has expressed its intention to host this Meeting and to cover the expenses jointly with other partners.

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
TOTAL ACTIVITIES UNDER COORDINATION		385,000	83,000	398,000	360,000	54,000	510,000

II. **COMPONENTS**II.A **POLLUTION PREVENTION AND CONTROL** (to cover MEDPOL, REMPEC, CP/RAC and PAP/RAC)

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Assistance from REMPEC or through REMPEC's consultants to States in developing their capacities in the fields of preparedness for and response to accidental marine pollution	REMPEC	10,000			8,000		
Assistance as above to States in developing port emergency response system	REMPEC	7,000			9,000		
Assistance as above to States in preparing and developing bilateral and multilateral agreements	REMPEC	4,000			5,000		
Development of the regional information system (RIS), library, website and information dissemination	REMPEC	8,000			9,000		
Development of TROCS and of the Mediterranean Information Decision Support Integrated System	REMPEC		11,000			11,000	
Assistance to countries in case of emergency (Mediterranean Assistance Unit)	REMPEC	4,000			4,000		
Assistance to countries in the Organisation of National Training Courses	REMPEC	10,000			10,000		
Regional specialised training course (25 participants) 3 per biennium	REMPEC	64,000		20,000	70,000		50,000
Meeting of REMPEC's Focal Points	REMPEC	66,000					
Two years project on port reception facilities for collecting ship generated garbage, bilge waters and oily waters	REMPEC			400,000 a			240,000 a
Three years project "Risk Assessment of the ports of Marsin and Iskandarun, Turkey" with associated capacity building for the State for preparedness and response to marine pollution	REMPEC			206,000 b			206,000 b
Three years project to develop the natural system for preparedness for and response to accidental pollution in the Syrian Arab Republic	REMPEC			146,000 c			151,000 c
Support to sub-regional agreement between Cyprus, Egypt and Israel	REMPEC	5,000			15,000		
Inventory and analysis of experienced remote sensing monitoring activities to support the LBS Protocol, the MED POL Programme and sea pollution assessment and setting-up of operational plans	ERS/RAC	5,000			5,000		
Assessment of Pollution: Assistance to countries for the formulation and implementation of trend monitoring programmes	MEDPOL	90,000			80,000		
Assistance to countries for the formulation and implementation of biological effects monitoring	MEDPOL	25,000	20,000		20,000	20,000	
Technical Review Meeting on the progress of implementation of the trend and biological effects monitoring	MEDPOL				30,000		20,000

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Training and Fellowships	MEDPOL	20,000			15,000		
Data Quality Assurance Programmes	MEDPOL	60,000			55,000		
Identification of, and research on, pollution emerging issues	MEDPOL	40,000			40,000		
Review of data and information on pollution Hot Spots and Sensitive Areas (WHO)	MEDPOL			59,000 d			
Consultation Meeting to identify prioritization criteria for pollution Hot Spots and Sensitive Areas (WHO)	MEDPOL	30,000		60,000 d			
Consultation with countries for pre-investment studies	MEDPOL				10,000		50,000 d
Pre-investment studies for pollution abatement in selected hot spots	MEDPOL						2,000,000 e
Consultation Meeting to select pollution Hot Spots for pre-investment studies	MEDPOL	10,000		50,000 d	10,000		
Assessment of health related aspects of the pollution of the Mediterranean Sea (WHO)	MEDPOL			15,000 f			15,000 f
Assessment of pollution by marine and coastal litter (IOC)	MEDPOL	4,000			5,000		
Enforcement and Control: Assistance to countries for the formulation and implementation of compliance monitoring programmes	MEDPOL	30,000	15,000		15,000	15,000	
Assistance to countries for compliance and enforcement of legislation and systems of inspections (WHO)	MEDPOL				40,000		
Consultation Meeting of the informal Network on compliance and enforcement	MEDPOL	20,000	20,000	20,000			
Training courses related to systems of inspection (WHO)	MEDPOL	20,000	20,000	90,000 g			30,000 g
Consultation Meeting on criteria and standards for health-related monitoring of coastal recreational and shellfish waters (WHO)	MEDPOL				30,000		30,000 f
Intercalibration exercise on determination of microbiological pollution (WHO)	MEDPOL				40,000		10,000 f
LBS Protocol/Strategic Action Programme (SAP)/GEF Project: Finalization of Transboundary Diagnostic Analysis (TDA) and revision of SAP	MEDPOL			106,000 d			
Preparation of Regional Guidelines for pollution abatement as part of GEF Project	MEDPOL	50,000		104,000 d			36,000 d
Preparation of Regional Plans for pollution abatement as part of the GEF Project	MEDPOL	100,000		105,000 d			
Preparation of National Action Plans to address pollution from land-based activities	MEDPOL	10,000			10,000		480,000 d
Assistance to countries for the preparation of National Action Plans	MEDPOL				40,000		75,000 d
Expert assistance to the inter-ministerial national committees	MEDPOL			180,000 d			
Meetings at national level for the preparation and presentation of National Action Plans	MEDPOL				20,000		80,000 d
Consultation Meeting on reporting methodology for LBS Protocol	MEDPOL				50,000		

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Regional and National Training Courses as part of the GEF Project related to river pollution monitoring	MEDPOL	30,000		60,000 g			60,000 g
Regional and National Training Courses as part of the GEF Project related to waste water treatment plant operation and management (WHO)	MEDPOL	30,000		60,000 g			60,000 g
Regional and National Training Courses as part of the GEF Project related to cleaner production techniques	MEDPOL	25,000		140,000 d	5,000		10,000 g
Assistance to countries for the preparation of PRTRs	MEDPOL	10,000			10,000		
Economic Instruments: Implementation of the SAP MED project (support to the national authorities in the implementation of economic instruments in ICAM and mitigation of pollution from land-based activities)	PAP/RAC	40,000		140,000			100,000
Dumping Protocol: Preparation of regional Guidelines according to Art. 4 and 6 of the Protocol	MEDPOL	20,000					
Meeting of Government Experts to approve Guidelines	MEDPOL						70,000 h
Hazardous Wastes Protocol: Assistance for the implementation of the Protocol	MEDPOL				5,000		
Coordination: Meeting of MED POL National Coordinators	MEDPOL				20,000		50,000 h
GEF Project Coordination Meetings	MEDPOL				45,000		139,000 d
CP/RAC Activities	CP/RAC			143,750 i			
- Meetings (including the Meeting of National Focal Points)	CP/RAC						
- Publications	CP/RAC			106,250 i			
- Projects and assistance to countries	CP/RAC			187,500 i			
TOTAL ACTIVITIES		847,000	86,000	2,398,500	730,000	46,000	3,962,000

- a: Funds secured through the EU/DGVII-1/EuroMediterranean Partnership (MEDA)
- b: Money allocated to Turkey within the framework of the three years LIFE project, of which REMPEC is technical manager.
- c: Funds secured through the EU/DGXI/LIFE Programme.
- d: Fund secured from GEF
- e: \$ 1,000,000 from GEF and \$1,000,000 from FFEM.
- f: Funds partly secured through WHO
- g: Funds secured through FFEM.
- h: Funds expected from host countries
- i: Tentative figures subjected to the approval of the concrete activities by the Spanish Government that support directly CP/RAC activities. 2001 activities are subjected to the budget allocated by the Spanish Government to the CP/RAC activities.

II.B PROTECTION OF BIOLOGICAL DIVERSITY (to cover SPA/RAC)

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
<u>Data Collection and Periodic Assessment of the Situation</u> Collection of data and assistance to countries for the preparation of inventories of species and sites	SPA/RAC		50,000	50,000		25,000	35,000
Expert meeting on coastal (terrestrial and wetland) habitats	SPA/RAC				30,000		20,000
<u>Legal measures</u> Assistance to countries in the setting up and enforcement of their national legislation in the field of sites and species conservation	SPA/RAC	10,000			10,000		
<u>Planning and Management</u> Implementation of the Action Plan for threatened species (monk seal, marine turtles, cetaceans and marine vegetation) adopted within MAP	SPA/RAC		50,000			50,000	
Mediterranean Symposium on marine vegetation	SPA/RAC	20,000					
Assistance for the implementation of CAMPs	SPA/RAC	25,000		25,000	25,000		25,000
Assistance to countries for the establishment and management of SPAs	SPA/RAC		25,000	25,000		20,000	30,000
Setting up of strategies and plans in the field of biodiversity conservation	SPA/RAC	10,000	25,000			5,000	
<u>Public information</u> Elaboration and diffusion of data and information relevant to biodiversity conservation and sustainable use	SPA/RAC	18,000			18,000		
<u>Exchange of experience and strengthening of national capabilities</u> Training sessions on the scientific and technical aspects of the conservation of the natural common heritage	SPA/RAC	40,000		10,000	20,000	10,000	20,000
SPA National Focal Points Meeting	SPA/RAC				40,000		
TOTAL ACTIVITIES		123,000	150,000	110,000	143,000	110,000	130,000

II.C SUSTAINABLE MANAGEMENT OF COASTAL ZONES (to cover PAP, ERS and BP RACs)

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
MAP CAMPS Co-ordinating role; implementation of ICAM activities, natural resources, capacity building, preparation of programmes and plans; integration of results and activities; and preparation of bankable projects as a follow-up of CAMP programmes	PAP/RAC	45,000	85,000			130,000	
MCSD Support to follow-up MCSD recommendations on ICAM (implementation of ICAM instruments, tools and techniques)	PAP/RAC	9,000			15,000		
ICAM 'Development of ICAM methodology; development and elaboration of tools & techniques for SEA, CCA for tourism, coastal information systems, land and sea use planning systems; and capacity building and institutional strengthening (national and regional workshops and training courses)	PAP/RAC	20,000	20,000		20,000	50,000	
National Focal Points Meeting of PAP/RAC	PAP/RAC				20,000 a		
Evaluation of PAP/RAC Centre	PAP/RAC				10,000		
Contribution to on-going and planned CAMPS as to remote sensing applications (preliminary studies, capacity building, assistance).	ERS/RAC	5,000	5,000		3,000	7,000	
Meetings and workshops to introduce, to national planners and decision-makers from Mediterranean Countries, remote-sensing-based activities and their support to the sustainable development process.	ERS/RAC	5,000	10,000			10,000	20,000
Improvement and maintenance of the STEPINMED database in the Internet.	ERS/RAC	5,000			5,000		
Assistance to Mediterranean Countries for the setting-up of proposals to be submitted for outside funds.	ERS/RAC	5,000			7,000		
National Focal Points Meeting of ERS/RAC	ERS/RAC						30,000 b
Consolidation of prospective approaches and related information systems	BP/RAC	10,000	20,000	10,000	10,000	20,000	10,000
Preparation for and implementation of MEDA Programme (participation of most RACs)	MEDU						
TOTAL ACTIVITIES		104,000	140,000	10,000	90,000	217,000	60,000

a. Jointly with BP/RAC and ERS/RAC.

b. Jointly with BP/RAC and PAP/RAC. External funds to be provided by the Sicilian local administration.

II.D INTEGRATING ENVIRONMENT AND DEVELOPMENT (to cover BP, PAP and ERS/RACs)

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
<u>Observation and prospective study of the environment and development:</u> Regional level assessment of progress on sustainable development in the Mediterranean	BP/RAC	20,000			20,000	20,000	
<u>Assistance to countries in assessing progress towards sustainable development and support to follow-up on MCSD recommendations on indicators:</u> - calculating indicators; - assistance to national observatories (or equivalent agencies); - national analyses	BP/RAC		45,000	45,000		45,000	45,000
<u>Analysis of the free trade-environment relationship (organisation of a workshop)</u>	BP/RAC	20,000		20,000			
<u>Assessment of the social costs (in terms of poverty and health) incurred by the degradation of the environment and of economic tools used for measuring this phenomenon</u>	BP/RAC	10,000			10,000		
<u>Communication and training activities</u>	BP/RAC			50,000			50,000
<u>MEDSTAT Environment Programme</u>	BP/RAC			400,000 a			400,000
<u>Tourism and Sustainable Development/MCSD:</u> - Assisting in implementing the action plan and drafting the White Paper	BP/RAC	20,000		20,000	15,000		20,000
- Support to follow up of the MCSD recommendations on tourism in the field of environmental assessment for tourism planning and coastal areas and for carrying capacity for tourism techniques and for the preparation of the best practice guide	PAP/RAC	25,000			20,000		10,000
<u>Urban management and sustainable development/MCSD:</u> - Support to the working group: - Urban management tools	PAP/RAC	25,000			20,000		10,000
- Sustainable management of towns	BP/RAC	10,000			10,000		
<u>Control of urbanisation and sustainable town management</u> Retrospective and prospective study of the problems of urbanisation in the Mediterranean and prevention of natural risks	BP/RAC		20,000	20,000	10,000		
<u>Workshop on urban waste management to prepare for feasibility and work programme for MCSD group on "consumption patterns and urban waste management"</u>	BP/RAC	20,000		20,000			
<u>Soil Erosion</u> Erosion and desertification control activities (assistance to countries in preparing plans for coastal areas, training and capacity building for national institutions)	PAP/RAC		25,000	30,000		25,000	30,000

ACTIVITY	OFFICE	Proposed Budget (in US \$)					
		2000			2001		
		MTF	EU	EXT	MTF	EU	EXT
Water Resources Regional workshop to assess the situation in the Decision Support System for Coastal Water Resources Management in the region; Preparation of guidelines for application of the Decision Support System for Coastal Water Resources Management; and Training course on application of the Decision Support System for Coastal Water Resources Management	PAP/RAC	30,000			30,000		
Rural development, natural areas and resources: - Communication and training activity for water demand	BP/RAC	10,000		20,000			
- Gathering information and analysing the land question with country experts	BP/RAC	10,000			10,000		
- Gathering information, analysis and proposal in the field of rural and agriculture development/natural environments and resources	BP/RAC	10,000		10,000		30,000	
Meeting of Blue Plan Focal Points	BP/RAC				20,000 b		
Evaluation of the BP/RAC Centre	BP/RAC				10,000		
Analysis of available information, structures and expertise at National level to support the monitoring of indicators relying on remote sensing techniques.	ERS/RAC	10,000					
Technical assistance to Mediterranean Countries to monitor indicators relying on remote-sensing techniques.	ERS/RAC				10,000		30,000
Implementation of a database on existing data and information relevant to the selected indicators and their availability at national and regional level.	ERS/RAC			25,000			25,000
TOTAL ACTIVITIES		220,000	90,000	660,000	185,000	120,000	620,000

- a. Funds are secured through the EU/DGI/MEDA Programme.
b. Jointly with PAP/RAC and ERS/RAC.

III. ADMINISTRATIVE AND OPERATING COSTS**1. COORDINATING UNIT, Athens, Greece**

	Approved Budget			Proposed Budget			
		1999		2000		2001	
		MTF	GREEK CP	MTF	GREEK CP	MTF	GREEK CP
Professional Staff	m/m						
Coordinator - D.2	12	128,000		131,000		133,000	
Deputy Coordinator - D.1	12	122,000		124,500		127,000	
Senior Programme Officer/ Economist - P.4	12	121,000		118,500		121,000	
Fund Management/Admin. Officer - P.4	12	*		*		*	
MEDPOL Coordinator - P.5	12	116,000		123,500		126,000	
MEDPOL Programme Officer - P.4	12	121,000		118,500		121,000	
MEDPOL Programme Officer - P.3	12	94,000		96,000		98,000	
Computer Operations Officer - P.4	12	92,000		-		-	
Information Officer - P.3 (a)	12	-		96,000		98,000	
Total Professional Staff		794,000		808,000	0	824,000	0
Administrative Support (b)							
Information Assistant - G.6/G.7	12	36,000		37,500		37,500	
Administrative Assistant - G.6/G.7	12	*		*		*	
Senior Secretary - G.5	12	30,000		31,500		31,500	
Administrative Clerk - G.5	12	*		*		*	
Computer Info./System Assistant - G.5/G.6	12	*		*		*	
Budget Assistant - G.5 (c)	12	30,000		*		*	
Administrative Assistant - G.5	12	*		*		*	
Library Assistant - G.5/G.6 (d)	12	-		31,500		31,500	
Secretary - G.4	12	29,000		30,000		30,000	
Secretary - G.4	12	29,000		30,000		30,000	
Secretary (MEDPOL) - G.4	12	29,000		30,000		30,000	
Secretary (MEDPOL) - G.4	12	29,000		30,000		30,000	
Secretary (MEDPOL) - G.4	12	29,000		30,000		30,000	
Telecommunication Clerk - G.4 (c)	12	27,000		*		*	
Administrative Clerk - G.4 (c)	12	26,000		*		*	
Office Clerk/Typist - G.3	12	25,000		26,000		26,000	
Clerk/Messenger - G.2 (c)	12	20,000		*		*	
Temporary Assistance		10,000		5,000		5,000	
Training of MEDU Staff		-		10,000		10,000	
Overtime		15,000		15,000		15,000	
Hospitality		12,000		10,000		12,000	
Total Administrative support		376,000		316,500	0	318,500	0
Travel on Official Business		111,000		120,000		122,500	
Office Costs							
Rental**			137,000		139,000		141,000
Other Office costs (including sundry)		80,900	263,000	89,000	261,000	91,000	259,000
Total Office costs		80,900	400,000	89,000	400,000	91,000	400,000
TOTAL ADMIN. COSTS		1,361,900	400,000	1,333,500	400,000	1,356,000	400,000

* Paid under Programme Support Costs.

** In the case of a change in the location of premises, the adjustment of the budget, due to the change of the cost, to be Proposed by the Bureau.

- (a) In conformity with MAP Information Strategy, and as agreed by the Contracting Parties, the post of "Computer Operations Officer" will be converted into an "Information Officer" corresponding more to the actual needs of MEDU/MAP. Computer issues would be handled by a G. Staff (post already exists) with local technical support as necessary.
- (b) Increase based on the estimated result of the salary survey for 1999.
- (c) Positions previously paid by the MTF to be covered by Programme Support Costs.
- (d) Regularization.

2. MED POL COOPERATING AGENCIES

		Approved Budget (in US\$)	Proposed Budget (in US\$)	
		1999	2000	2001
		MTF	MTF	MTF
Professional Staff				
WHO Programme Officer/Senior Scientist, MAP Coordinating Unit (Athens) P.5	m/m 12	115,000	118,000	120,000
IAEA DQA Consultant (Monaco)	4		20,000	20,000
Total Professional Staff		115,000	138,000	140,000
Administrative Support				
WHO Secretary MAP Coordinating Unit (Athens) G.5	12	30,000	30,500	31,500
IAEA Laboratory Assistant MEL (Monaco) G.6	12	58,000	55,000	56,100
WMO Temporary Assistance - WMO/HQ (Geneva)		14,000	5,000	5,000
IOC Temporary Assistance - IOC/HQ (Paris)		14,000	5,000	5,000
Total Administrative Support		116,000	95,500	97,600
Travel on Official Business				
WHO (Athens)		15,000	15,000	15,000
WMO (Geneva)		5,000	3,000	3,000
IAEA (Monaco)		15,000	15,000 *	15,000 *
IOC of UNESCO (Paris)		5,000	3,000	3,000
Total Travel		40,000	36,000	36,000
Office costs		**	**	**
TOTAL PERSONNEL AND OPERATING COSTS		271,000	269,500	273,600

* Includes field missions for the Data Quality Assurance Programme

** Office costs incurred by WHO staff stationed in the Coordinating Unit in Athens are covered by MED Unit office costs. Office costs incurred by all Agencies at their own Headquarters or Regional Offices are covered by the respective agencies as part of their counterpart contributions.

3. **REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC) Valletta, Malta**
Cooperating Agency IMO

		Approved Budget (in US\$)	Proposed Budget (in US\$)	
		1999	2000	2001
		MTF	MTF	MTF
Professional Staff	m/m			
Director - D.1	12	134,000	128,000	131,500
Technical Expert - P.4	12	115,000	118,000	120,500
Chemist - P.4	12	105,000	108,000	110,000
Junior Professional (CSN) - P.2	12	-	-	-
Total Professional Staff		354,000	354,000	362,000
Administrative Support				
Information Assistant - G.6	12	21,000	22,000	22,500
Administrative Assistant - G.6/G.7*	12	-	12,000	12,500
Senior Secretary/Admin. Assistant G.6	12	21,000	21,000	21,500
Clerk Secretary - G.4	12	17,000	18,000	18,500
Clerk/Secretary - G.4	12	17,000	18,000	18,500
Caretaker/Docs Reproducer - G.3	12	16,000	17,000	17,500
Total Administrative Support		92,000	108,000	111,000
Travel on Official Business		35,000	37,000	38,000
Office costs		76,500	74,000	74,000
TOTAL PERSONNEL AND OPERATING COSTS		557,500	573,000	585,000

* New position to be financed equally by IMO and MAP.

4. **BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)**
Sophia Antipolis, France

		Approved Budget (in US\$)	Proposed Budget (in US\$)	
		1999	2000	2001
		MTF	MTF	MTF
Professional Staff	m/m			
Chairman	12			
Director	12	*	*	*
Environmental Economist	12	108,000	95,000	100,000
Scientific Director	12	*	*	*
Systemic and Prospective Officer	12	77,000	82,000	83,500
Computer and Data Base Officer	12	46,000 **	54,000 **	55,000 **
Environment Officer	12	***	***	***
Institutional Studies Officer	12	***	***	***
GIS Officer	12	***	***	***
Environment Officer	12	*	*	*
Administrative and Financial Officer	12	52,000 **	56,000 **	57,000 **
Total Professional Staff		283,000	287,000	295,500
Administrative Support				
Data Collection Assistant/Senior Secretary	12	47,000	50,000	51,000
Bilingual Secretary	12	47,000	50,000	51,000
Secretary	12	****	****	****
Documentation Assistant	12	****	****	****
Temporary Assistance		20,000	15,000	15,000
Total Administrative Support		114,000	115,000	117,000
Travel on Official Business		30,000	33,000	33,000
Office and Operating costs		45,000	45,000	45,000
TOTAL PERSONNEL AND OPERATING COSTS		472,000	480,000	490,500

- * Seconded by the French Government
 ** Supplemented by the French Government and other projects.
 *** Covered by other projects for 2000 and 2001.
 **** Covered by the operating budget derived from external projects.

5. **PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)**
Split, Croatia

		Approved Budget (in US\$)	Proposed Budget (in US\$)	
			1999	2000
		MTF	MTF	MTF
Professional Staff	m/m			
Director	12	47,000	49,000	51,000
Deputy Director	12	35,000	36,000	38,000
Total Professional Staff		82,000	85,000	89,000
Administrative Support				
Senior Assistant to Projects/Translator	12	25,000	26,000	27,000
Assistant to Projects/Translator	12	24,000	25,000	26,000
Assistant to Projects/Translator	12	24,000	25,000	26,000
Assistant to Projects/Translator	12	24,000	25,000	26,000
Administrative Assistant	12	24,000	25,000	26,000
Financial Assistant	12	24,000	25,000	26,000
Temporary Assistance		14,000	14,000	14,000
Total Administrative Support		159,000	165,000	171,000
Travel on Official Business		30,000	31,000	31,000
Office costs		81,000	83,000	84,000
TOTAL PERSONNEL AND OPERATING COSTS		352,000	364,000	375,000

6. SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)
Tunis, Tunisia

		Approved Budget (in US\$)	Proposed Budget (in US\$)	
		1999	2000	2001
		MTF	MTF	MTF
Professional Staff	m/m			
Director	12	33,000 *	33,750 *	34,500 *
Expert	12	16,500 *	17,000 *	17,500 *
Expert	12	62,500	63,750	65,000
Data Researcher	12	44,000	45,000	46,000
Total Professional Staff		156,000	159,500	163,000
Administrative Support				
Administrative Assistant	12	14,000	14,250	14,500
Bilingual Secretary	12	12,000	12,250	12,500
Bilingual Secretary	12	*	12,250	12,500
Driver	12	6,500	6,750	7,000
Finance Officer	12	**	2,000 *	2,000 *
Cleaner	12	**	**	**
Caretaker	12	**	**	**
Temporary Assistance		9,500	5,000	5,000
Total Administrative Support		42,000	52,500	53,500
Travel on Official Business		25,000	25,000	25,000
Office costs		54,000	54,000	54,000
TOTAL PERSONNEL AND OPERATING COSTS		277,000	291,000	295,500

* Represents funds allocated to supplement the salary paid by the Host Country.

** Paid by the Host Country.

7. ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)
Palermo, Italy

	Proposed Budget (in US\$)	
	2000	2001
TOTAL PERSONNEL AND OPERATING COSTS	*	*

* Personnel/Administrative and Operating Costs are fully covered by the Host Country.

8. CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)
Barcelona, Spain

	Proposed Budget (in US\$)	
	2000	2001
TOTAL PERSONNEL AND OPERATING COSTS	*	*

* Personnel/Administrative and Operating Costs are fully covered by the Government of Spain.

Appendix I

Mediterranean Commission on Sustainable Development

Recommendations and Proposals for action on the theme of: INFORMATION, PUBLIC AWARENESS, ENVIRONMENTAL EDUCATION AND PARTICIPATION as adopted by the Contracting Parties (Malta, 27-30 October 1999)

(a) Framework conditions

The strengthening of the role of civil society requires the urgent and systematic review, amendment and revision of national and local legal and institutional frameworks in most of the Mediterranean countries.

The members concerned took note of the principles of the Aarhus Convention(1998);

Regional and local authorities, NGOs and other civil society organizations must be encouraged and supported. "Dialogue fora" should be promoted and participatory schemes with active involvement of NGOs should be introduced and/or enhanced. Such schemes may include the participation of NGOs in EIA procedures and in specific projects such as biotopes management, training, monitoring, etc. as well as in sustainability plans through Local Agendas 21 and similar initiatives. Funding provision for such activities should be included in the budget.

Public Awareness, information, participation and mobilization for the environment and sustainability, need to start at an early stage. Therefore relevant issues should be introduced in the curricula of schools and adequate time provision should be made; educators should be trained appropriately; suitable pedagogical material should be produced and disseminated; the media and the Internet could be used by establishing sites on education for the environment and sustainability, with links to other sites.

(b) Specific actions proposed:

A number of the specific actions recommended by the Thematic Group are closely linked with the planned MAP information and communication policy and the MAP Secretariat should, therefore, be encouraged to utilize the input of the Thematic Group, as appropriate.

Information:

1. A reliable cost assessment of the needed additional capital investment for infrastructure as well as for running costs etc. for the achievement of comparable, reliable information throughout the Mediterranean.
2. A 2-year state-of-the-art exhibition, held in each Mediterranean country in the national language, which will remain in the country. The information will be provided for the most part by UNEP/MAP and EEA and will focus on the state of the Mediterranean environment as well as the means and mechanisms that are either in place or are needed for its improvement and for the promotion of a truly sustainable development.

Part of each exhibition will be dedicated to the respective country in which it is taking place. The exhibitions will be handled by partnership between Governments and NGOs.

Awareness:

3. Organization of a systematic opinion poll and statistically sound assessment of the awareness views, perceptions behaviour and aspirations of the Mediterranean public in the areas of environment and sustainable development, in a mode compatible with the one employed by "Eurobarometer" for Europe.
4. Invitation to the Contracting Parties to develop and implement national strategies and action plans for awareness, as integral components of their national sustainability plans, in collaboration with NGOs, in order to enhance the efficiency and credibility of the information provided. The Secretariat, eventually with the input of the Thematic Group, may provide an "Information and Awareness Strategy Framework" as a support for the work of the Contracting Parties.

Education:

5. Strengthening of the Mediterranean network of environmental educators and relevant Mediterranean networks on education for environment and sustainability.
6. Assessment of the resources needed for the training of 50 per cent of Mediterranean educators of primary schools in the most productive alternative schemes and 30 per cent of those of secondary schools by the year 2004.
7. Encouragement for the establishment of a Mediterranean register with Internet links on teaching materials, particularly audiovisual.

Participation:

8. Invitation to the Contracting Parties to identify at least one pilot participatory and mobilization project per country with the active involvement of the public. These projects at national or local level will be studied, monitored and documented in order to be publicized as possible examples of good practice. Invitation also to States to collaborate with local authorities.
9. Publication and translation of a series of manuals in various Mediterranean languages on the following issues:
 - (a). participation practices and techniques
 - (b). consensus-building methodologies
 - (c). already existing "success stories" in the area of public participation and mobilization.

Appendix II

Mediterranean Commission on Sustainable Development

Recommendations and Proposals for action on the theme of: INDICATORS FOR SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN as adopted by the Contracting Parties (Malta, 27-30 October 1999)

The Contracting Parties to the Barcelona Convention, with the support of actors from civil society, are invited to set up on a voluntary basis a Mediterranean system of indicators for sustainable development for use by:

Mediterranean riparian States;
Actors in multilateral co-operation in the region ;
Actors from civil society (local authorities, companies, associations, ...).

1. **Adoption of a common set of indicators:** A first set of 130 basic indicators (of which 55 are more easy to calculate in view of the relevance and availability of data for an adequate number of countries) was selected by the Contracting Parties. Each country would compile them, where possible and on a voluntary basis, for the purposes of work at the Mediterranean level. This list may be changed in accordance with tests carried out in the countries, and in accordance with guidance and requirements expressed by the Mediterranean Commission on Sustainable Development.
2. **Complementary indicators:** The indicators selected in the common core set cannot alone make up an adequate framework for an in-depth examination of various subjects and for work on sustainable development policies on special fields or territories. MAP, the States and local authorities will endeavour to propose, test and record complementary pressure, state and response indicators.
3. **Harmonization and dissemination of indicators to facilitate work at the national level:** MAP will create a "glossary" which sets out definitions and the methods for drawing up indicators. MAP will also keep an up-to-date dossier illustrating all selected indicators, including a table of trends by country and at regional level from 1960 onwards with graphical illustrations, in addition to comments on difficulties in collection and possible interpretations. MAP will disseminate this work on the Internet.
4. **Mediterranean report:** The Contracting Parties are invited to contribute effectively to the production and publication by MAP of a report on sustainable development in the Mediterranean. The first report shall be drawn up in the year 2002.
This report will be based in particular on indicators for sustainable development.

It will show the unity and diversity of situations in the region, current efforts towards sustainable development, difficulties encountered, good practices, etc.
It will be submitted by the MAP to the Contracting Parties and the MCSD.

5. **National reports:** States are invited to supply MAP with the national reports prepared for the United Nations Commission for Sustainable Development, and to facilitate comparative studies on Mediterranean issues undertaken by Blue Plan (series of Mediterranean Country Profiles).
These national summaries will indicate result-based goals in the medium and long term, which are clearly stated and adopted by States, as well as examples of good practice.

6. **Capacity Building:** The Contracting Parties are invited: to mobilize national statistical institutions and instruct environment and development observatories, or equivalent agencies, to monitor and enhance indicators at the national level; and to develop them into preferential links at the Mediterranean level.

They are invited to develop appropriate programmes, possibly with regional financial support, to build their capacities:

- to promote the use of indicators for sustainable development;
- to harmonize environmental and socio-economic statistics; and
- to ensure coordination with all the institutions concerned

7. **Follow up:** MAP will follow up this work through the activities centres. It will supplement the work with new activities to examine specific themes in greater depth in collaboration with other competent national and international organizations. The MCSD will follow the work and, where necessary, will call on the task managers, who may propose the holding of the appropriate meetings.

Appendix III

Mediterranean Commission on Sustainable Development Recommendations and Proposals for action on the theme of: TOURISM AND SUSTAINABLE DEVELOPMENT as adopted by the Contracting Parties (Malta, 27-30 October 1999)

A major political question-mark for the Mediterranean

As the world's primary tourist destination with over 150 million international and domestic visitors a year, the coastal regions of the Mediterranean will continue to record considerable tourist development over the coming decades (with possibly as much as double the number of tourists by 2025).

As a vector of deep-running changes more often than not irreversible, much more than other activities, tourism begs the general question of societies' ability to control development, provide long-term protection for their environment and promote balanced national planning. The Mediterranean experience indeed shows that controlling tourist development is especially hard in a very attractive region with considerable geographic constraints. It also shows a wide variety of situations with 3 general kinds of areas:

- already "mature" destinations that can report on their positive and/or negative experiences,
- more recent destinations in full growth that must endeavour not to repeat the problems encountered elsewhere,
- coastal or inland areas with real developmental possibilities but which are at present little or not developed and that might even invent new forms of development.

Tourism in the Mediterranean region is therefore of capital importance in its present and future impact on societies, economies and the region's environment. Its ways of developing must absolutely evolve to better take environmental, social and economic aspects into consideration.

Mobilisation on a Mediterranean and world-wide scale

A question-mark at the heart of sustainable development, tourism has recently given rise to numerous initiatives and conferences on both the Mediterranean and world-wide levels, in particular:

- The Lanzarote International Conference on Sustainable Tourism (1995), the United Nations Conference for Sustainable Development in small island developing states (Barbados, 1995), the Lanzarote Conference on Sustainable Tourism in the Islands (October, 1998) and the recent debates in the context of the United Nations' 7th commission on Sustainable Development
 - The Conferences in Hyères les Palmiers (and the Euro-Mediterranean declaration on tourism, 1993), Casablanca (and the charter of Mediterranean Tourism, September, 1995), Calvia (and the Calvia Statement, April, 1997) and the work by MAP on tourism (work by the BP/RAC and the PAP/RAC and the section on tourism on the Med Agenda 21 – Tunis, 1995).
-

- Initiatives by Mediterranean NGOs, especially the International Congress on "Sustainable Tourism in the Mediterranean: Participation by Civil Society" (Sant-Felice de Guixols, October, 1998).

The MCSD's Contribution

The MCSD wished to contribute to this necessary thought-process with the goal of developing overview and real proposals for the contracting parties to the Barcelona Convention.

The work carried out, highlighted by the Antalya workshop in Turkey (17 to 19 September, 1998), endeavoured to mobilise the main players involved (states and international organisations, tourist professionals and experts, NGOs, local authorities...), to focus on the question of the relationship between tourism, the environment and sustainable development in the region and to gather a certain number of local case studies (23 case studies were documented by the countries).

Work by the MCSD brought to light three main proposal lines (controlling impact on the environment, promoting tourism in better harmony with sustainable development and developing Mediterranean co-operation) and a proposal for an action plan.

1. Controlling tourism's territorial and environmental impact

Although tourism depends on quality environment and landscape, it is all too often a factor in their deterioration, especially on coasts. Thus the quality of the Mediterranean coasts—one of the Mediterranean's most precious assets—must absolutely be better preserved in the tourist destination areas. To this end the following guidelines have been proposed:

1.1. Anticipate and reduce the negative impact of developments, urbanisation and tourist infrastructures on coastlines

The handsomest locations on the Mediterranean coastline are the prime sites desired by domestic and international tourism. Uncontrolled development of infrastructures and tourist-related urbanisation (especially yacht harbours, tourist accommodation and second homes) can lead to irreversible deterioration of ecosystems (sand dunes, wetlands and so forth) and coastal landscapes. These sometimes very rapid developments are hard to control especially because of the many players involved, the lack of shared common vision and the non-enforcement, even the non-existence, of development regulations.

This is how many mature destination areas have seen their environment damaged, which in some cases has led to serious economic and/or environmental crises.

What is at stake for the Mediterranean is to rehabilitate the damaged mature tourist destinations as far as possible and, above all, avoid such degradation in the areas now undergoing growth or not yet developed.

Recommendations:

The Mediterranean states and local authorities are urged to:

- ⇒ *acquire the instruments needed to evaluate the environmental impact of tourist programmes and large-scale projects,*
- ⇒ *carry out evaluations of destination sites' carrying capacity and taking steps necessary for ensuring that the offer be limited to the carrying capacities thus defined,*
- ⇒ *strengthen or establish legislative tools, regulations and property management leading to controlling tourist urbanisation and protecting the most precious natural sites. Among other things this means:*
 - providing coastal zones subjected to strong tourist developmental pressure with plans for development and land management that take environmental questions into account,
 - avoiding generalised urbanisation too close to coasts and the building of roads parallel and close to coastlines that promote this kind of urbanisation and generate traffic that alters the quality of the destination areas,
 - identifying the most remarkable coastal sites (such as wetlands, sand dunes, and so forth) and implementing measures that ensure their protection, e.g. creating natural reserves or land agencies for procurement wherever possible.
- ⇒ *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.*

1.2. Reducing consumption of natural resources and the pollution caused by tourist accommodation and activities

Tourism causes heavy consumption of natural resources (especially water, soil and energy) and produces a lot of waste. This consumption and waste production come on top of those generated by the resident population. These effects are all the more considerable for the fact that tourism in the Mediterranean is concentrated mostly over a short period (July and August), which leads to inordinately large amount of amenities and an increase in the problems of water management in the most critical period.

The tourist sector can and must play an innovative role in these environmental questions. Some professionals have, moreover, already implemented environmental charters in facilities and destination areas.

Recommendations:

Mediterranean states and local authorities are urged to:

- ⇒ *ensure good environmental management of tourist facilities and destination sites;*
- ⇒ *encourage quality environmental procedures (certification, charters and so forth) with possible regional financial support,*
- ⇒ *develop all means that may lead to spreading the tourist season over the entire year*
- ⇒ *promote the tourist sector:*
 - to fight against waste and pollution in the water areas (reduced consumption, purification and recycling), energy waste (energy savings and use of renewable energy, especially solar energy) and waste (minimisation, selective collection, recycling and so forth),
 - to promote clean and innovative technology in this sense,
 - to promote and implement the certification process (EMAS, ISO 14000, etc.) of facilities and destination areas and develop voluntary tools such as environmental charters.

1.3. Controlling the development of tourist leisure activities affecting the marine and coastal environment

The generalised use of beaches and the development of boating and new leisure activities (jet skis) and underwater tourism can seriously affect the environment, especially certain protected species (cetaceans, turtles among others).

Recommendations:

Mediterranean states and local authorities, in concert with the professional players involved, are urged to take the necessary steps so that:

- ⇒ *pleasure boats do not discharge their waste water at anchor or, even less, in ports,*
- ⇒ *yacht harbours be furnished with the necessary facilities for taking solid and liquid waste,*
- ⇒ *new leisure forms likely to affect the environment, especially protected species, only be authorised once their impact has been assessed and are shown to conform to the tourist strategies of the areas concerned,*
- ⇒ *access and use of beaches by the public as well as their use by professionals be regulated, if need be, and managed in accordance with environmental factors.*

2. Promoting tourism as a factor in sustainable social, cultural and economic development

Suitably guided and controlled, tourism can become a powerful vector of sustainable development for many Mediterranean regions benefiting both local

populations, tourists, environmental protection and the highlighting of natural and cultural heritage.

2.1. Developing national and local strategies aimed at better reconciling tourism, the environment and sustainable development

Aware of the need to better integrate tourism and the environment, many Mediterranean states and local authorities have already implemented negotiation procedures between services and the pertinent players which have resulted in conventions, agreements and protocols and in defining strategies and programmes. These steps remain too limited, however, and are in general insufficiently operational.

Recommendations:

The Mediterranean states and local authorities are urged to:

- ⇒ *develop and strengthen the in-depth confrontational/negotiation methods between authorities dealing with tourism, the environment and regional development and the pertinent players to define strategies that enable:*
 - the setting of mid-term result goals,
 - better defining and sharing out the roles of the various partners,
 - implementing adapted action tools,
- ⇒ *develop these strategies especially by depending on the observation of tourist impact (on the economy, society, the environment and cultural heritage), the producing of prospective exercises for the mid- and long-term and the selection of pertinent indicators*
- ⇒ *endeavour on a scale with tourist destinations to mobilise local populations, NGOs and the pertinent professionals and implement local Agenda 21s.*

2.2. Promote the diversification of tourism and balanced regional development.

What is required is promoting more compatible forms of tourism with the stakes of sustainable regional planning and development.

Recommendations:

The Mediterranean states and local authorities must endeavour to:

- ⇒ *promote the development of cultural, ecological and rural tourism compatible with the environment. Highlighting archaeological, historical, architectural, landscape and natural heritage can be a strong contributor and should be developed.*
 - ⇒ *look into the complementarity and synergy with other economic sectors, especially agriculture, fishing and craftsmanship,*
-

- ⇒ *develop the synergies between coastal tourism and inland tourism,*
- ⇒ *implement specific-action programmes adapted to the sustainable development of particularly fragile areas on the ecological and human levels, especially islands, hinterland and wetlands,*
- ⇒ *develop appropriate tools for these objectives, as, for example, biosphere reserves and natural parks and processes of the local Agenda 21 sort, by giving them sufficient financial means and technical assistance.*

3. Develop Mediterranean Co-operation

Following the example of other fields of common interest and other regions of the world, the Mediterranean would benefit from building strong regional co-operation in the tourist field. Stakes are crucial and the Contracting Parties to the Barcelona Convention, along with the MAP, have a booster role to play in harmony with tourist trade professionals and NGOs.

Among other things, its goal is to:

- further the development in the tourist demand for a tourism that takes the importance of protecting the environment and sustainable development into greater account and to highlight the market role to this aim,
- define and promote operational tools adapted to national and local authorities and tourist businesses, enabling the control of tourist development and contributing to its being better integrated into the sustainable development of the areas concerned.

Recommendations:

The Contracting Parties to the Barcelona Convention, along with the MAP, and in concert with tourist professionals and NGOs are urged to:

- ⇒ *strengthen awareness activities on a regional scale in tourist destinations as well as in the source countries,*
 - ⇒ *Organise experience-sharing between the actors involved in tourist destinations of the various countries,*
 - ⇒ *develop training programmes for those actors involved, especially local authorities and professionals,*
 - ⇒ *promote the implementation of Mediterranean networks (between professionals, between certain areas such as islands or certain kinds of tourism such as the cultural variety...),*
 - ⇒ *promote the implementation of Mediterranean eco-labels,*
 - ⇒ *stimulate a "regional co-operation mechanism" in this field that works in a network.*
-

4. Proposals for an action programme

4.1. Participation in networks and international initiatives for sustainable tourism

The goal is to make the Mediterranean region one of thought and action on a global scale and within this context to promote the implementation of Mediterranean networks (between professionals, between islands and so forth). With this goal in mind, the MAP will take part, especially in the following procedures:

- "Tour Operator Initiative", steered by UNEP-EI, following on the 7th session of the UN Commission of Sustainable Development,
- The "Islands" joint programme between the UNEP-EI and the WTO, initiated at the Lanzarote Conference (1998),
- the "Tourism and the Environment at the European Level" project initiated by the European Environmental Agency.

4.2. The implementation of a regional programme within the framework of the "sustainable management of coastal zones" part of the Euro-Mediterranean partnership

Within the framework of the Euro-Mediterranean partnership and its priority programme of action for the environment (SMAP—the management wing of the coastal areas), the MAP will submit and ensure the follow-up of a regional programme for the sustainable management of the Mediterranean tourist coastal areas.

This three-year programme will consist of the following activities:

i) Experience-sharing between Mediterranean tourist destinations

This will concern the destination areas selected by the states. Among other things it will enable,:

- a better identification of the actors concerned and their roles as well as past and current developments and their environmental, social and economic impact (in particular by means of appropriate indicators);
- the pinpointing of the tools used and their range;
- a contribution in developing strategies and projects for better integrating tourism with sustainable development;
- the definition and promotion on regional and local levels of the real tools for the authorities and businesses concerned.

ii) Promoting Mediterranean eco-labels

This consists of looking at the opportunity and the methods for granting Mediterranean eco-labels, in particular for the tourist destination areas striving to reconcile environmental protection and tourist development.

iii) Awareness campaigns on the regional level

In particular this means:

- producing and distributing practical reference documents ("white book", "good practice guides" and so forth);
-

- conducting awareness campaigns for the general public in the source countries to contribute to a better awareness by tourists of the environmental and social stakes involved.

iv) Promoting economic and financial tools for protecting and managing sites

This means pinpointing and promoting those economic and financial tools for enhancing an effective contribution from the tourist sector for protecting sites and improving the sustainable development of the destination areas.

v) A study for a "regional co-operation mechanism"

This means carrying out a feasibility study of a "regional co-operation mechanism" for contributing to a better integration of tourism in sustainable development in the Mediterranean region by contributing to the follow-up of the implementation of the present recommendations (following on the three-year plan). It is advisable to specify what, among other things, could be its functions and its operational mode.

vi) The year 2002 for a regional symposium

A regional symposium in 2002 has been suggested, the goal of which would be to:

- draw conclusions from the present programme;
 - derive a common view for integrating tourism with sustainable development in the Mediterranean and to draw up main lines for a long-term programme of action;
- stimulate sustainable tourism regional co-operation in the Mediterranean region.
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Appendix IV

MAP INFORMATION STRATEGY as adopted by the Contracting Parties (Malta, 27-30 October 1999)

Introduction

At their Tenth Ordinary Meeting (Tunis, 18-21 November 1997), the Contracting Parties to the Barcelona Convention requested of the Secretariat to present to the Bureau a concrete action programme in the area of information within the MAP system. A report presenting such a programme was submitted by the Secretariat to the Bureau Meeting (Tripoli, 16-17 November, 1998) for its consideration. Following the review of the document presented, the Bureau requested the Secretariat to convene a Working Group meeting on the MAP Information Strategy.

This document represents the initial document originally presented, and then amended, mainly as regards recommendations, to reflect the conclusions of the Working Group Meeting on MAP Information Strategy, Athens, 1-2 April 1999.

1. MAP's mandate

In June 1992, the United Nations Conference on Environment and Development (UNCED) brought together in Rio de Janeiro, the greatest number of Heads of State and Government ever assembled in one place to discuss environment and sustainable development.

The "Rio Declaration" adopted, includes an important statement on the right of the general public to be considered in matters related to the environment. Principle 10 of the Rio Declaration on Environment and Development states:

"At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes"

Recognizing the important role which public information and public awareness may play in the success of any MAP strategy for the protection of the Mediterranean environment and the sustainable development of the region, appropriate provisions were made in MAP Phase II, and various amendments have been introduced to the Barcelona Convention and its Protocols as well as the three new protocols approved during the period 1994-1997.

These legal instruments should constitute the legal basis for a MAP Information and Public Awareness Strategy.

2. The role of MAP

The role which MAP is called to play on information is to coordinate action and act as a catalyst for the protection of the Mediterranean environment and the promotion of sustainable development in the region.

Specifically:

- 2.1 to provide relevant information to decision-makers in order to assist them in the promotion and the implementation of sustainable development and the protection of the environment;
- 2.2 to provide information to the public in connection with the state of the environment of the Mediterranean region and the measures adopted for improvement in order that environmental awareness in the Mediterranean region be enhanced;
- 2.3 to encourage public access to and participation in information activities for the protection of the environment in the Mediterranean region;
- 2.4 to mobilize participation and the involvement of major actors concerned.

3. MAP's strategy on information and public awareness

In order to enable MAP to fulfill its role, a detailed MAP Information and Public Awareness Strategy should be formulated. This strategy should describe the kind of information and the message(s) to be communicated to the MAP partners and the public at large as well as the most effective Environmental Communication procedure. Information may be defined as follows:

- 3.1 **Information for decision-making:** A critical component of environmental policy making. In fact, communication and development are inseparable. Policy makers, business and industry leaders and government officers soon came to realize that public sentiment had become an important consideration in matters related to the environment, and that policy decisions should be based on sound information.
- 3.2 **Public Information, general awareness raising:** The process of conveying information to the public or sometimes to special target groups (e.g. schoolchildren, tourists, industrialists etc) with a view to enlisting their support for particular MAP objectives and promoting general MAP aims. Participation is not a solitary thing, rather it refers to a combination of activities and outcomes.
- 3.3 **Public access and participation:** Publicizing the issues addressed, objectives pursued and breakthroughs made under MAP, to as large and mixed a public as possible through various means of communication, providing access to information and encouraging the public to participate and engage in dialogue.

In order to formulate a fundamental strategy with explicit public information and awareness objectives, and timetables for achieving them, the entire process must be sensitive to the cultural, social, political and economic concerns of region's and adapt accordingly. Therefore, different and strategic roles need to be assigned to the various categories of Focal Points of the Contracting Parties and to the Regional Activity Centres (RACs).

MAP Information and Awareness Strategy should be based on a well-defined plan with clear objectives: WHAT, TO WHOM, HOW.

Recommendations

- **Create a full time Information Officer post at MEDU;**
- **invite the Contracting Parties to appoint contact persons on information;**
- **design and use a common MAP template (MAP brand identification) in all MAP (MEDU, RACs) publications including a MAP logo.**

4. The Product: What is to be communicated

The Barcelona Convention, its mandate and MAPs profile and work. The activities, products and MAP's 20 years of experience in the protection of the environment and the promotion of sustainable development in the region together with other selected and useful information in order to support decision making and enhance environmental awareness.

Recommendation

- **The Contracting Parties should define the kind of information to be communicated.**

5. The Target: To whom the Product is to be communicated

The term Target, in this context, refers to the public at which MAP information and awareness outputs are aimed. This public should be the beneficiary of MAP's information strategy and are grouped as follows:

- 5.1 - Decision-makers (eg. Contracting Parties, Government agencies, MAP Focal Points);
 - IGOs (UNEP, UNDP, IOC, IMO, FAO, WHO, IAEA, WMO, European Commission, Convention Secretariats etc.).
- 5.2 - Economic and social sectors;
 - business community/private sector, including banks;
 - Universities, libraries, scientific community;
 - NGOs.
- 5.3 - Children and youth ;
 - the mass media;
 - tourist population.

In order to reach all target groups the key element is "nationalization". The Regional Activity Centres and the Contracting Parties must be supported in information capacity building, and be urged to assist both in the preparation and dissemination of MAP information. It is unlikely that MAP and its human resources, however efficient, could be effective in reaching regional, national and local audiences without the assistance of the competent authorities at the regional and national levels.

However until the necessary assistance to the present staff is actually funded (to be defined in relation to the scope of the MAP information strategy adopted), improvements could indeed be implemented by the existing MAP human resources.

Recommendations

- **the target groups should be broadened and updated periodically according to the needs;**
- **the MEDU, the RACs and the prospective Information Focal Points should play an active role in the dissemination of MEDU and MAP information on the international, regional, national and local levels;**
- **the MEDU, the RACs and the prospective Information Focal Points should ensure that the MAP mailing list is properly reviewed and routinely updated and that cooperation between MEDU and RACs, regarding the mailing list and the dissemination of information in general, is enhanced;**
- **RACs should ensure the timely deposit of all publications and reports with the MEDU library;**
- **whenever the relevant bodies within the Contracting Parties issue publications on the environment, these publications should refer to MAP and MAP activities when related.**

6. The Means: Ways and resources to be used

The following should be taken into consideration:

Conditions for the wide dissemination of MAP information vary greatly from country to country within the region. Apart from cultural, economic geopolitical and language differences, there are very distinct differences in the technology for the accession, management and dissemination of information among MAP countries.

The Contracting Parties differ in their receptiveness to information about MAP. For example, political and public sensitivity to environmental issues is much keener in some countries than in others, and some have much longer-established traditions, institutions and means for the dissemination of information.

Public information varies greatly in different parts of the region. Certain issues which are of great public concern in some Contracting Parties may have little or no relevance in others.

The processes for reaching the public vary from country to country, and certain media are more developed than others in different countries and situations.

Target groups are presently reached through a mailing list containing approximately

1714 entries compiled by the Athens MEDU and by the RACs. The following means are being used or have been used:

6.1 Publications

- a. SPECIAL PUBLICATIONS
 - MAP Technical Report Series (MTS)
 - Convention and Protocols
 - MAP and RACs Reports of Meetings
 - RACs publications

- b. GENERAL INFORMATION MATERIAL
 - MedWaves
 - Brochures and Leaflets
 - Posters and Stickers

- a. SPECIAL PUBLICATIONS

- MAP Technical Report Series (MTS)

- The series contains selected reports resulting from the various activities performed within the framework of the components of MAP.

- So far, 124 volumes have been published and disseminated as per the MEDU mailing list, and on request.

Recommendations

- **Upgrade the presentation of MTS; immediate action to be taken on the presentation of the MTS. In the medium term the MTS should be systematically proofread and edited by a qualified editor, preferably with a scientific background, prior to publication;**
- **encourage RACs to publish in the MTS;**
- **urge National Focal Points to assist MEDU in the enhancement of the MTS mailing list by supplying a list of national NGOs and libraries.**

Convention and Protocols

- *Mediterranean Action Plan and the Final Act of the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea*, 52 pages. United Nations, New York 1980. Languages: English, French, Spanish, Arabic.

- *Mediterranean Action Plan Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources. Final Act and Protocol*, 18 pages. Published by the United Nations, New York 1980.

- *Protocol concerning Mediterranean Specially Protected Areas*, 32 pages. MEDU, Athens, 1986. Languages: English, French, Spanish, Arabic (in one

volume).

- *Mediterranean Action Plan and Convention for the Protection of the Mediterranean Sea against Pollution and its related Protocols*, 61 pages. MEDU, Athens, 1992. Languages: English, French, Spanish, Arabic.
- *Mediterranean Action Plan and Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols*, Informal Document. MEDU, Athens, 1997.

These have been distributed to a selected group of the MAP family (Focal Points, Government experts, IGOs, NGOs, libraries) and, upon request, to institutions and the media.

Recommendations

- **Improve the presentation (easy-to read, easy-to-access, easy reference); the medium term goal should be a common design template and potential MAP logo;**
- **publications should be available in English and French, special efforts should be made to have them also in Arabic, moreover, publications should be distributed at an information stand during meetings.**

MAP and RAC Meeting Reports

All MAP meeting reports and documents, 1975 to present, are deposited with the MEDU library, and constitute the MEDDOC database. *A MAP List of Meetings and Documents* is published and distributed biennially.

Reports of MAP meetings are distributed to a selected group of the MAP and RAC family (Focal Points, Government experts, IGOs, NGOs) and upon request, to Institutions, academics, researchers, students as well as the mass media.

RAC Publications

Recommendations

- **Encourage RACs to upgrade their publications as they produce and distribute their own;**
- **RACs publications to conform to the common design template (MAP brand identification) and include MAP logo in the long term.**

b. GENERAL INFORMATION MATERIAL

Recommendation

- **MAP Information material should be also published in the Arabic language and when sources are available, in Spanish.**

MedWaves (MW)

The first issue of MedWaves was published in July 1985 in English and French. Since 1990, following the decision of the Contracting Parties, MedWaves has been published in English, French and Arabic. The first issue of MedWaves in Arabic is no 19, January 1990. MedWaves magazine is issued three to four times annually and mailed by MEDU to nearly 2,000 recipients in multiple copies worldwide. It is distributed to Focal Points, Government experts, libraries, scientists, NGOs, IGOs, journalists and others upon request.

Recommendations

- **Place electronic version of MedWaves on the MAP Web Site;**
- **improve the design and layout of MedWaves, though progress has already been made. Restructure contents (analytical part, per major theme and per issue, activities, achievements, RAC/NGO information, list of meetings etc.);**
- **ensure the timely delivery of reports to the MW Editor by the Focal Points and other sources;**
- **allocate a one or a one-half page for each RAC and one page for NGO- MAP Partners, and make these contributors responsible for providing the text for the updating of the page;**
- **send MW to RACs, Focal Points and NGOs, and urge them to distribute MW to National/local NGOs and libraries, institutions, scientists and the media;**
- **appraise the feasibility of increasing the frequency of MW publication (6 issues per year) in conjunction with reducing the number of pages.**

Brochures and leaflets

- The first MAP brochure, the *Mediterranean Action Plan*, 28 pages, was prepared and published in 1985 by MEDU in all Mediterranean languages. It has been distributed by MEDU to international recipients and by the Focal Points on a national level.
- *Genoa Declaration on the Second Mediterranean Decade*, prepared and published by MEDU in 1988. Languages: All Mediterranean languages (in one volume).
- *High and Dry brochure*, 48 pages, designed and published by MEDU and OCA/PAC (Nairobi), in 1991. Languages: English, French, Arabic.
- MAP brochure, the *Mediterranean Action Plan*, 40 pages, prepared for the Rio Summit, compiled and published by MEDU in 1991. Languages: English and French.
- MAP brochure on MCSD, *Mediterranean Commission on Sustainable Development: A Regional Channel for Agenda 21*, prepared and published by MEDU in 1997. Languages: English and French (in one volume).
- MAP brochure, the *Mediterranean Action Plan: A Contribution to Sustainable Development in the Mediterranean Basin*, 36 pages, prepared and published by MEDU in 1996. Languages: English, French.

- MAP leaflet, four-fold prepared and published by MEDU in 1997. Languages: English, French.
- Various Blue Plan and SPA/RAC brochures.

Recommendations

- **Update the institutional MAP brochure as necessary; possibly with the addition of a back page pocket for inserting updated information. Languages: English, French, Arabic;**
- **create a) promotional, analytical eye-catching, easy-to-read, easy-to-absorb brochure**
b) leaflet with focus on the Mediterranean environment.
Languages: English, French, Arabic; all Mediterranean languages in the long term;
- **create a special brochure for children and youth (seek the assistance of a country with proven experience in such types of brochures), possibly as part of a comprehensive educational pack. Languages: All Mediterranean languages.**

Posters and Stickers

- *Turtle poster*
Printed in Athens in 1986 by MEDU. Photograph A. Demetropoulos. 5000 copies;
- *Monk Seal poster*
Printed by Water Branch, UNEP, Nairobi in 1998. Design by J. Lamb. 10000 copies were sent to MEDU;
- *Dolphin poster*
Printed in Athens in 1985 by MEDU. 1000 copies;
- *MEDUNIT poster (Art)*
Printed in Athens in 1986 by MEDU. 1000 copies.

Stickers mentioned hereunder were financed by Water Branch, UNEP, Nairobi. It must be noted that none of these stickers were originally designed to serve MAP purposes.

- *SOS Message in a bottle*: Designed and printed in two sizes by MEDU, in 1984, 100000 copies. Reprinted in 1985, 1986 and 1993.

It must be noted that this sticker is being used by UNEP for the "Year of the Ocean 1998" and appears in the UNEP letterheads;

- *Dolphin*: Designed and printed by MEDU in 1984. 150000 copies. Reprinted in 1985, 1987, 1991, 1993;
- *Pink Whale*: Designed and printed by MEDU in 1985. 50000 copies. Reprinted in 1985 and 1993;

- *Keep our Seas Alive*: Designed and printed by MEDU in 1985. 150.000 copies. Reprinted in 1987 and 1993;
- *Help Stop Global Warming and Sea-level Rise*: Designed by the Water Branch, Nairobi. Printed in Athens by MEDU in 1988. 100000 copies. Reprinted in 1991.

Recommendations

- **A well designed series of posters and stickers is an excellent way to reach the general public. The impact should be mainly visual and include the MAP logo. Where textual message exists this should be in the local language.**

6.2 *The MEDU Library*

The MEDU library, established in May 1986, houses a small special collection of monographs, scientific periodicals, technical reports and reference publications on marine pollution, sustainable development, environmental policy and law, climate change and other related topics. It serves as a depository for RAC publications and reports as well as for UNEP and other United agencies scientific and technical publications, and maintains a complete official documents collection and data base of meetings organized and convened by MAP from 1975 to present. Designated for the use of the MEDU staff, the library, despite its limited resources, has continued to offer assistance and to provide reference services and training to the Mediterranean scientific, professional and student community.

Recommendations

- **Define the policy and set guidelines regarding the MEDU library status, services, as well as its potential in the framework of MAP and MAP policy on information;**
- **organize the library's collection in electronic form in order to facilitate collection management and development and enhance library services;**
- **design and compile a MAP library database of MEDU and RACs library holdings (documents, publications). Make the database accessible and searchable via conventional means and via the Internet;**
- **create a MAP library information network with the MEDU library serving as the Focal Point and the active participation of RACs for effective information exchange and dissemination;**
- **enhance the MEDU library's presence on the MAP Web Site;**
- **support the library and the library's role in order that its growing responsibilities as a Centre for the deposit/acquisition, management and dissemination of environmental information in the region, be met. To that end, full time library staffing and a librarian's post should be established.**

6.3 *MAP Web Site*

The MAP Web Site was designed by Data Processing and the Library and was uploaded to UNEP server in August 1997, upon approval by the professional

staff meeting. It consists of, Information on MAP; History and Milestones; Legal Framework of MAP; Institutional Structure; Partnerships; Programme of Activities; Publications; and up-to-date news as well as glossary of terms. Moreover, it provides downloading option for copies of selected MAP meeting reports, the Barcelona Convention and Protocols, copies of 73 MAP Technical Reports and various other documents and publications.

The Web Site may be accessed at: <http://www.unepmap.org> and is updated approximately, every three weeks.

Recommendations

- **Assign responsibility for the contents and updating of the MAP Web Site to the prospective MEDU Information Officer;**
- **recruit professional services for enhancing the Web Site design;**
- **make contents of Web Site bilingual, English and French.**

6.4 *Mass media*

The press is contacted through, press releases, interviews, direct contact with individual journalists, press conferences on the occasion of the Contracting Parties meetings.

It must be taken into consideration that the Mass Media (Newspapers, magazines, written publications, radio, television) is a very special target group, as they have the potential of reaching a great number of people.

The print medium, most often available to a mass audience, is the newspaper. However, it must be noted that:

- Environmental journalists are often presented with technical and sometimes conflicting information and are required, under deadlines, to make sense of material referring to complex issues and make it readable and comprehensible. This leads to a confusing picture for the public and, at times, undermines the credibility of journalists on environmental issues;
- there is too much press release journalism, crisis-oriented, inconsistent, lacking in follow-up and not enough analysis of the issue;
- MEDU has to manage the press for maximum efficiency in promoting the goals and activities of MAP.

Recommendations

- **Improve liaison with mass media through the prospective Information Officer at MEDU;**
- **prepare a press kit with basic information on MAP goals and activities for distribution at press conferences, during Mediterranean Environment Week etc.;**
- **issue periodic MAP press releases and feature stories in English, French and Arabic;**
- **utilize prospective MAP Information Focal Points for the dissemination of MAP**

information to the local media.

6.5 Other means

- Exhibitions
- TV/Video Film outputs
- special events

Exhibitions

MAP has organized the following exhibitions:

- *The 1983 Exhibition panels:*
In 1983 Mr. T. Farcas, consultant, Water Branch, Geneva, created an exhibition consisting of 12 light-weight panels, which was shown in 1983 during the meeting of the Contracting Parties in Dubrovnik.
- *The 1985 Exhibition panels:*
In 1985, a new MAP exhibition was created by Mr. N. Gabrielli, architect and consultant of the Municipality of Genoa. The exhibition consisted of 35 plastic-coated aluminum panels, each weighing 5 kilos. This exhibition was shown at the 1985 meeting of the Contracting Parties in Genoa; in Athens, December 1985 as part of the celebrations for the 10th anniversary of MAP; in Algiers, March 1986; in Tunis, November 1986; in Nairobi (French Cultural Week), March 1987; in Malta, July 1988; and in Tripoli (Libya), February 1989.

In March 1990, MAP discontinued the use of this exhibition since the data shown had become obsolete.
- *The 1992 Exhibition panels:*
In 1992, a new MAP exhibition was created by Ms. M. Caparis, consultant, and the Senior Information/Conference Assistant. The exhibition consisted of 18 light-weight, easy to transport panels, 43 pictures with photographs and texts. It was shown at the Thessaloniki International Fair, September 1992; in Piraeus at the Music, Vision, Media Exhibition in November 1992; in Athens at the Multimedia Exhibition in December 1992; and at the HELECO Exhibition in April 1993; in Nicosia, in September 1993; at the Thessaloniki International Fair in September 1993; in Antalya, in October 1993; at the Thessaloniki International Fair in September 1994. In January 1995, MAP discontinued the use of this exhibition since the data shown had become obsolete.
- *Computer slide show on MAP:*
Prepared by Data Processing and shown to the delegates at the Contracting Parties Meeting in Barcelona in 1995.
- *UNEP Photo Exhibition:*
On loan by UNEP Nairobi, 60 photographs, no text. Shown at the Cultural Centre of the Municipality of Athens, in September 1994. Inaugurated by the Coordinator and the Deputy Mayor of Athens.

It should be noted that these exhibitions, intended as a portable display for frequent use around the region, are in fact, only barely mobile and are costly to transport.

Recommendations

- **Develop a good set of transparencies and/or slides for the use of professional staff and RACs;**
- **discontinue such type of exhibitions which are costly to transport;**
- **encourage and support exhibitions organized on a national and local level, especially exhibitions for children.**

TV/video Film output

- MAP produced a 15 minute video in 1995 that follows closely along the thematic lines of the MAP first booklet.
This video lacks creative and local appeal and is outdated.
- In 1990, Television Trust for the Environment (TVE) produced a 52 min. video: "*Mucking up the MED*". The video, a great success, is now outdated.

Recommendations

- **Secure funds (external) for an updated video and TV spots on the Mediterranean environment and the Mediterranean Action Plan, promoting MAP and its activities;**

Special Events

World Environment Day

The material for World Environment Day is prepared, produced and disseminated directly by UNEP Headquarters. It must be noted that this material reaches the Contracting Parties and RACs late in May.

Mediterranean Environment Week (Genoa Declaration 1985)

Until now, Mediterranean Environment Week has occasionally been observed. However, it could become the highest expression of Contracting Parties solidarity. Mediterranean Environment Week is a unique opportunity to bring MAP alive for its public.

In order to achieve results, careful planning as well as production of relevant material, timely dissemination and careful planning of events should be organized by MEDU in close cooperation with the Contracting Parties and RACs.

Recommendations

- **Engage schools with a painting competition, the awards to be given during the Mediterranean Environment Week;**
- **consider instituting special awards, e.g. "Most Environment-Conscious Business"**

Enterprise”.

Summary of Recommendations

Introduction

These recommendations were finalized and approved at the conclusion of the meeting of the Working Group on the MAP Information Strategy (Athens, 1-2 April 1999). They are arranged in short-medium-and long term action and are separated by topic in main body of the document.

Recommendations

Short Term (0-12 months)

- Create a full time Information Officer post at MEDU;
- create a full time Librarian post at MEDU;
- invite the Contracting Parties to appoint contact persons on Information;
- upgrade the presentation and the printing quality of MTS;
- recruit professional services for enhancing the MAP Web Site design;
- place electronic version of MedWaves on the MAP Web Site;
- assign responsibility for the contents and updating of the Web Site to the prospective MEDU Information Officer;
- each RAC to assign responsibility on information to a designated staff member;
- in cooperation with the prospective Information Focal Points and the RACs, ensure the proper review and the regular updating of the MAP mailing list for more efficient use;
- ensure the timely deposit of all RACs reports and publications with the MEDU library;
- develop a good set of transparencies and/or slides for the use of professional staff and the RACs.

Medium Term (12-24 months)

- Design and use a common MAP template (MAP brand identification) in all MAP (MEDU, RACs) publications including a MAP logo;
- improve the design/layout of MedWaves. Appraise the feasibility of increasing the frequency of publication (6 issues per year) in conjunction with reducing the number of pages;
- allocate a one or one-half page for each RAC and one page for NGO-MAP Partners, and make these contributors responsible for the updating of the page;
- update the institutional MAP brochure as necessary, Languages: English, French, Arabic;
- create:a) a promotional, analytical, eye-catching, easy-to-read, easy-to-absorb brochure,
 - b) a leaflet with focus on the Mediterranean environment. Languages: English, French, Arabic; all Mediterranean languages in the long term;
- organize the MEDU library's collection in electronic form in order to facilitate collection management and development, and enhance library services;

- enhance the MEDU library's presence on the MAP Web Site;
- make contents of the Web Site bilingual, English and French;
- improve liaison with mass media through the prospective Information Officer at MEDU;
- issue periodic MAP press releases and feature stories in English, French and Arabic;
- utilize prospective MAP Information Focal Points for the dissemination of MAP Information to the local media;
- prepare a press kit with basic information on MAP goals and activities for distribution at press conferences, during Mediterranean Environment Week etc;
- engage schools with a painting competition, the awards to be given during Mediterranean Environment Week;
- have MTS proofread and edited by a qualified editor, preferably with a scientific background, prior to publication.

**Long Term
(24-36 months)**

- Make MAP publications available in English and French and, special efforts should be made to have them also in Arabic and distribute them at an information stand during meetings;
- create a special brochure for children and youth, possibly as part of a comprehensive educational pack;
- design a series of posters and stickers, as an excellent way to reach the general public, with the impact being mainly visual, and include the MAP logo. Where textual message exists, this should be in the local language;
- create a MAP library information network with the MEDU library serving as the Focal Point and the active participation of RACs for effective information sharing and dissemination;
- organize training programmes on information management and public awareness for nationals of developing Mediterranean countries;
- secure funds (external) for an updated video and for TV spots on the Mediterranean environment and the Mediterranean Action Plan, promoting MAP and its activities;
- consider instituting special awards, e.g. "Most Environment-Conscious Business Enterprise".

Appendix V

Recommendations on MAP/NGO COOPERATION as adopted by the Contracting Parties (Malta 27-30 October 1999)

Introduction

1. At their Tenth Meeting, the Contracting Parties to the Barcelona Convention and its protocols (Tunis, 18-21 November 1997), decided to undertake a methodological reflection in relation to NGO participation in MAP® and for this purpose, decided to establish a Working Group composed of representatives of the Contracting Parties® to review this subject and propose the necessary recommendations.
2. At its recent meeting (Tunis, 28 March 1998), the Bureau of the Contracting Parties reviewed the subject, made various comments and requested the Secretariat to convene the meeting of the Working Group and report the results of its deliberation of the Working Group to the next Bureau meeting,
3. In conformity with those decisions, the meeting of the Working Group was convened at MAP premises in Athens on 9 October 1998. The meeting thoroughly reviewed a secretariat report, including draft recommendations on the subject, and made various amendments and modifications thereon. The meeting report was issued as document UNEP(OCA)/MED WG.147/3.
4. During its recent meeting held in Tripoli, Libyan Arab Jamahiriya, on 16 and 17 November 1998, the Bureau of the Contracting Parties reviewed the draft recommendations of the Working Group. Various comments were made by the members of the Bureau, including:
 - acknowledgement of the importance of the issue and the role of NGOs in the field of public awareness and participation;
 - support for the networks approach, which should function as focal points for the various NGOs they represent and should ensure the widest possible dissemination of information on MAP activities to other NGOs and the public at large;
 - relevant NGOs and the private sector should be encouraged to become involved in specific environmental and sustainable development issues;
 - the role of NGOs should be complementary to that of governments and NGOs that are genuinely working to protect the Mediterranean environment should be welcomed;
 - the selection of NGOs to be MAP partners should be established on a solid basis. They should not request funds to assume their responsibilities and should offer their contributions to MAP and to the Mediterranean countries;
 - MAP should select environmental and sustainable development themes, on which NGOs can help and contribute.
5. At the end of the Bureau discussion, the Secretariat was requested to continue

its work on the issue and submit a report to the meeting of the MAP National Focal Points.

6. The following draft recommendations have been suggested by the Working Group on MAP/NGO Cooperation for the consideration of the NFPs meeting, taking into account the above mentioned comments of the Bureau:

Proposed Recommendations

The main objectives of MAP/NGO cooperation are:

1. to advance the general purposes of MAP and to promote the policies, strategies and programmes derived from the Barcelona Convention and its Protocols and the decisions of the meetings of the Contracting Parties;
2. to obtain expert information, law and advice, technical cooperation and assistance from international, regional and national NGOs;
3. to enable NGOs which represent important sectors of public opinion in the Mediterranean to express the views of their members on environmental issues, raise public awareness and influence public opinion and action for the benefit of the environment.

With a view to attaining these objectives, the following specific recommendations are suggested for the consideration of the Contracting Parties:

A. At the Contracting Parties level

1. At the regional level, the Contracting Parties shall endeavour to create the appropriate working conditions for NGOs and to facilitate their involvement and active participation in tasks for which they are specialized, or have expertise, through a capacity-building programme involving financial assistance, legal assistance (such as bringing cases to courts), preparation of environmental projects and techniques of raising public awareness.
2. At the national level, encourage partnership among Contracting Parties, the private sector and relevant NGOs, which could produce positive results in dealing with specific environmental and sustainable development issues.
3. At the national level, encourage NGOs' role in organizing and supporting Apublic hearings@ on particular environmental issues.

B. At the NGO level

1. NGOs shall fully cooperate with the Mediterranean countries and MAP Secretariat for the furtherance of the objectives of the Barcelona Convention and its Protocols.
2. NGOs shall provide the MAP Secretariat regularly with information on their activities and changes in their structures.
3. NGOs shall build and strengthen national and regional networks, with wider representation of Mediterranean NGOs in the Networks.

4. NGOs shall cooperate individually and collectively (Networks) in the implementation of MAP programmes and shall prepare qualitative inputs to policy and research projects of MAP.
5. Sharing of experience and lessons, communication and exchange of information within the various NGOs shall be strengthened
6. Encourage Networks of NGOs to be present in MAP meetings by sending relevant experts.
7. NGO Networks shall guarantee to act as focal points for the various NGOs they represent.
8. NGOs shall disseminate information on MAP activities through their Newsletters, Internet web pages and through other channels in order to make MAP's efforts and importance in the Mediterranean better known to the public at large.
9. NGOs shall be encouraged to invite MAP representatives to participate in their ordinary meetings.

C. At the Secretariat level

1. The MAP Secretariat shall strengthen and upgrade its support to NGOs from the Southern and Eastern parts of the Mediterranean region, so as to enhance their capabilities and encourage their active participation in MAP activities.
2. The MAP Secretariat shall play a facilitating and enabling role to help NGOs build on and strengthen existing mechanisms of collaboration and networking.
3. Review and update the MAP/NGOs profile database on a regular basis.
4. Devote one-page in the MAP Bulletin *AMedwaves@*, to NGOs activities.
5. Explore the possibility of a multi-party collaboration of NGOs, international and regional financial institutions, the MAP Secretariat and the Contracting Parties, in the form of joint projects.
6. The MAP Secretariat shall designate a MAP official with overall responsibility for NGOs.
7. The MAP Secretariat shall provide information to NGOs on projects being financed through the Mediterranean Trust Fund (MTF) or through joint projects of MAP and regional and international financial institutions.
8. Encourage broad participation by NGOs in MAP activities, not just a selected few.
9. Selection of NGOs to be incorporated in the MAP/NGO List of Partners shall be based on the real profile (competence in the thematic field) of the organization which will be illustrated in a Dossier to be submitted by the NGO in question containing information on:
 - main objectives and field of competence of the organization;
 - NGO constitution, terms of reference, or articles of association;

- activity and financial reports;
 - bulletins and media articles published by the organization.
10. The selection of organizations to be incorporated in the MAP/NGO list of partners is to follow the same criteria used in the selection of the members of the Mediterranean Commission on Sustainable Development (MCSD), namely selection of organizations representing three categories: Local Authorities, Socio-economic Actors and Environmental NGOs.
 11. The selection process shall start with an official request by the organization, and a proposal by the MAP Secretariat to be reviewed by the meeting of the MAP National Focal Points for subsequent approval by the Ordinary Meeting of the Contracting Parties.

Appendix VI

**Guidelines for the MANAGEMENT OF DREDGED MATERIAL
as adopted by the Contracting Parties (Malta, 27-30 October 1999)**

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Preface

These guidelines are designed to assist the Contracting Parties in the implementation of the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea, hereinafter referred to as "the Protocol", with regard to the management of dredged material; the Protocol was signed by 16 Contracting Parties in 1995, but has not yet entered into force.

Some aspects of these guidelines are an adaptation to the technical-economic context of the Mediterranean basin of the Dredged Material Assessment Framework, adopted on 8 December 1995 by the Contracting Parties to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, of 13 November 1972, as amended in 1993.

It is, however, implicitly recognised that the general considerations and detailed procedures described in the guidelines are not applicable in their entirety to all national or local situations.

Introduction

Dredging activities are an essential part of port and harbour activities.

Two main dredging categories can be distinguished:

- **Capital dredging**, mainly for navigational purposes, to enlarge or deepen existing channel and port areas, or to create new ones; this type of dredging activity also includes some technical activities on the seabed such as trenches for pipes or cables, tunnelling, removal of material unsuitable for foundations, or removal of overburden for aggregate extractions;
- **Maintenance dredging**, to ensure that channels, berths or construction works are maintained at their designed dimensions.

All these activities may produce large quantities of material that have to be eliminated. A small part of this material may be polluted by human activities to such an extent that serious ecological conditions have to be imposed where the sediments are dredged or dumped.

It must be also recognised that dredging operations as such may harm the marine environment, especially when they take place in the open sea close to sensitive areas (aquaculture areas, recreational areas, ...). This is the case in particular when dredging operations have a physical impact (increased turbidity) or lead to the re-suspension or the re-releasing of major pollutants (heavy metals, organic or bacterial pollutants).

In view of the foregoing, the Contracting Parties are urged to exercise control over dredging operations in parallel with that exercised over dumping. Use of Best Environmental Practice (BEP) for dredging activities is an essential pre-condition for dumping, in order to minimise the quantity of material that has to be dredged and the impact of the dredging and dumping activities in the maritime area.

Advice is available from a number of international organisations, including the Permanent International Association of Navigation Congresses (PIANC) 1986: Disposal of Dredged Material at Sea (LDC/SG9/2/1). Through its Environmental Policy Framework and close links with industry in developing Cleaner Industrial Production Technologies, the United National Industrial Development Organisation (UNIDO) is able to offer expert advice and training to enhance capabilities to develop an integrated management plan for dredged waste materials.

1. REQUIREMENTS OF THE DUMPING PROTOCOL

1.1 Under Article 4.1 of the Protocol, the dumping of waste and other matter is prohibited.

Nevertheless, pursuant to Article 4.2 (a) of the Protocol, this principle may be waived and the dumping of dredged material authorised under certain conditions.

1.2 Under Article 5, dumping requires a prior special permit from the competent national authorities.

1.3 Furthermore, in accordance with Article 6 of the Protocol, the permit referred to in Article 5 shall be issued only after careful consideration of the factors set forth in the Annex to the Protocol. Article 6.2 provides that the Contracting Parties shall draw up and adopt criteria, guidelines and procedures for the dumping of wastes or other matter listed in Article 4.2 so as to prevent, abate and eliminate pollution.

1.4 These Guidelines for the Management of Dredged Material, which include advice on dredged material sampling and analysis, have been prepared for the purpose of providing guidance to the Contracting Parties on:

- (a) fulfilment of their obligations relating to the issue of permits for the dumping of dredged material in accordance with the provisions of the Protocol;
- (b) transmission to the organisation of reliable data on the input of contaminants to Protocol waters by the dumping of dredged material.

1.5 In view of the foregoing, these guidelines are designed to allow Contracting Parties to manage dredged material without polluting the marine environment. In accordance with Article 4.2 (a) of the Dumping Protocol, these guidelines relate specifically to the dumping of dredged material from ships and aircraft. They do not concern either dredging operations or the disposal of dredged material by methods other than dumping.

1.6 The guidelines are presented in two parts. Part A deals with the assessment and management of dredged material, while part B provides guidance on the design and conduct of monitoring of marine dumping sites.

The guidelines commence with a guidance on the conditions under which permits might be issued. Sections 4, 6 and 7 address the relevant considerations in the Annex to the Protocol, namely, the characteristics and composition of the dredged material (part A), the characteristics of the dumping site and method of deposit (part B), and general considerations and conditions (part C). Section 5 provides additional guidance on the sampling and analysis of dredged material.

**CONDITIONS UNDER WHICH PERMITS FOR DUMPING OF DREDGED MATERIAL
MAY BE ISSUED**

PART A

ASSESSMENT AND MANAGEMENT OF DREDGED MATERIAL

1. CHARACTERISATION OF DREDGED MATERIAL

1.1 For the purpose of these guidelines, the following definition[s] apply[s]:

- "dredged material" means any sedimentary formation (clay, silt, sand, gravel, rocks, and any indigenous parent rock material) removed from areas that are normally or regularly covered by sea water, by using dredging or other excavation equipment;

For any other relevant definition, the text of Art. 3 of the Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircrafts or Incineration at Sea, applies.

2. DISPOSAL OF DREDGED MATERIAL

2.1 In the vast majority of cases, dumping harms the natural environment so before taking any decision to grant a dumping permit other methods of disposal should be considered. In particular, all possible uses of dredged material should be considered (see Technical Annex 3)

3. DECISION MAKING PROCESS

3.1 Proper dumping site selection rather than a test application is recommended. Site selection to minimise the impact on commercial or recreational fishery areas is a major consideration in resource protection and is covered in greater detail in Part C of the Annex to the Protocol. (Further guidance for the application of Part C of the Annex is given in Section 7 below).

3.2 In order to define the conditions under which permits for the dumping of dredged material may be issued, the Contracting Parties should develop on a national and/or regional basis, as appropriate, a decision-making process for evaluating the properties of the material and its constituents, having regard to the protection of human health and the marine environment.

3.3 The decision-making process is based on a set of criteria developed on a national and/or regional basis, as appropriate, which meet the provisions of Articles 4, 5, and 6 of the Protocol and are applicable to specific substances. These criteria should take into consideration the experience acquired on the potential effects on human health and the marine environment.

These criteria may be described in the following terms:

- (a) physical, chemical and geochemical characteristics (e.g. sediment quality criteria);
- (b) biological effects of the products of the dumping activity (impact on marine ecosystems);
- (c) reference data linked to particular methods of dumping or to dumping sites;
- (d) environmental effects that are specific to dumping of dredged material and are considered undesirable outside and/or in close proximity to the designated dumping sites;
- (e) the contribution of dumping to already-existing local contaminant fluxes (flux criteria)

3.4 Criteria should be derived from studies of sediments that have similar geochemical properties to those to be dredged and/or to those of the receiving system. Depending upon the natural variation in sediment geochemistry, it may be necessary to develop individual sets of criteria for each area in which dredging or dumping is conducted.

3.5 The decision-making process, with respect to the background natural baseline reference level and to some specified contaminants or biological responses, may lay down an upper and a lower reference threshold, giving rise to three possibilities:

- (a) material which contains specified contaminants or which causes biological responses in excess of the relevant upper threshold should generally be considered as unsuitable for dumping at sea;
- (b) material which contains specified contaminants or which causes biological responses below the relevant lower threshold should generally be considered of low environmental concern for dumping at sea;
- (c) material of intermediate quality should be subject to more detailed assessment before suitability for dumping at sea can be determined.

3.6 When the criteria and the associated regulatory limits cannot be met (case (a) above), a Contracting Party should not issue a permit unless detailed consideration in accordance with Part C of the Annex to the Protocol indicates that dumping at sea is, nonetheless, the least detrimental option, compared with other disposal techniques. If such a conclusion is reached, the Contracting Party should:

- (a) implement a programme for the reduction at source of pollution entering the dredged area, where there is a source that can be reduced by such a programme, with a view to meeting the established criteria;
- (b) take all practical steps to mitigate the impact of the dumping operation on the marine environment including, for example, the use of containment (capping) or treatment methods;
- (c) prepare a detailed marine environment impact hypothesis;
- (d) initiate monitoring (follow-up activity) designed to verify any predicted adverse effects of dumping, in particular with respect to the marine environment impact hypothesis;
- (e) issue a specific permit;
- (f) report to the Organisation on the dumping which has been carried out, outlining the reasons for which the dumping permit was issued.

When it is unlikely that dredging management techniques will alleviate the harmful effects of contaminated material, physical separation on land of the more contaminated fractions (e.g. by use of hydrocyclones) may be employed to minimise the quantities of material for which such measures are required.

3.7 With a view to evaluating the possibility of harmonising or consolidating the criteria referred to in paragraphs 3.3 - 3.6 above, including any sediment quality criteria, the Contracting Parties are requested to inform the Organisation of the criteria adopted, as well as the scientific basis on which these criteria were developed.

3.8 An important element of these guidelines for the management of dredging activities is the preparation of a marine environment impact hypothesis (see Part B, paragraphs 5.1 and 5.2) for each marine dumping operation. In concluding their assessments of the environmental implications of these

operations, prior to the issue of a permit, the Contracting Parties should formulate impact hypotheses in accordance with the guidance provided in Part B, paragraphs 5.2 - 7.1. This impact hypothesis will provide the principal basis for the design of post-operational monitoring activities.

4. ASSESSMENT OF THE CHARACTERISTICS AND COMPOSITION OF DREDGED MATERIAL

Physical characterisation

4.1 For all dredged material to be dumped at sea, the following information should be obtained:

- quantity of dredged material (gross wet tonnage);
- method of dredging (mechanical dredging, hydraulic dredging, pneumatic dredging, and application of BEP¹;
- rough preliminary determination of sediment characteristics (i.e. clay / silt / sand / gravel / rock).

4.2 In order to assess the capacity of the site to receive dredged material, both the total amount of material and the anticipated or actual loading rate at the dumping site should be taken into consideration.

Chemical and biological characterisation

4.3 A chemical and biological characterisation will be needed to fully assess the potential impact. Information may be available from existing sources, for example from field observations on the impact of similar material at similar sites, or from previous test data on similar material tested not more than five years previously, and from knowledge of local discharges or other sources of pollution, supported by a selective analysis. In such cases, it may be unnecessary to measure again the potential effects of similar material in the vicinity.

4.4 Chemical, and as appropriate biological, characterisation will be necessary as a first step in order to estimate gross loading of contaminants, especially for new dredging operations. The requirements for the elements and compounds to be analysed are set out in Section 5.

4.5 The purpose of testing under this section is to establish whether the dumping at sea of dredged material containing contaminants might cause undesirable effects, especially the possibility of chronic or acute toxic effects on marine organisms or human health, whether or not arising from their bioaccumulation in marine organisms and especially in food species.

4.6 The following biological test procedures might not be necessary if the previous physical and chemical characterisation of the dredged material and of the receiving area, and the available biological information, allows an assessment of the environmental impact on an adequate scientific basis.

If, however:

- the previous analysis of the material shows the presence of contaminants in quantities exceeding the upper reference threshold in paragraph 3.5 (a) above or of substances whose biological effects are not understood,
- if there is concern for the antagonistic or synergistic effects of more than one substance,
- or if there is any doubt as to the exact composition or properties of the material,

¹ Best Environmental Practice

it is necessary to apply suitable biological test procedures.

These procedures, which should involve bio-indicators species may include the following:

- acute toxicity tests;
- chronic toxicity tests capable of evaluating long-term sub-lethal effects, such as biotests covering an entire life cycle;
- tests to determine the potential for bioaccumulation of the substance of concern;
- tests to determine the potential for alteration of the substance of concern.

4.7 Substances in dredged material may undergo physical, chemical and biochemical changes when deposited in the marine environment. The susceptibility of dredged material to such changes should be considered in the light of the eventual fate and potential effects of the dredged material. This may be reflected in the impact hypothesis and also in a monitoring programme.

Exemptions

4.8 Dredged material may be exempted from the testing referred to in paragraphs 4.3 and 4.6 of these guidelines if it meets one of the criteria listed below; in such cases, the provisions of the Parts B and C of the Annex to the Protocol (see Sections 6 and 7 below) should be taken into account.

- (a) dredged material is composed almost exclusively of sand, gravel or rock; such materials are frequently found in areas of high current or wave energy, such as streams with large bed loads or coastal areas with shifting bars and channels;
- (b) dredged material is composed of previously undisturbed geological material;
- (c) dredged material is for beach nourishment or restoration and is composed predominantly of sand, gravel or shell, with particle sizes compatible with material on the receiving beaches.

In the case of Capital dredging projects national authorities may, taking into account the nature of the material to be dumped at sea, exempt part of that material from the provisions of these guidelines, after representative sampling. However Capital dredging in areas which may contain contaminated sediments should be subject to characterisation in accordance with these guidelines, notably paragraph 4.4.

5. GUIDELINES ON DREDGED MATERIAL SAMPLING AND ANALYSIS

Sampling for the purpose of issuing a dumping permit

5.1 For dredged material which requires detailed analysis (i.e. which is not exempted under paragraph 4.8 above), the following guidelines indicate how sufficient analytical information may be obtained for the purpose of issuing a permit. Judgement and knowledge of local conditions will be essential in the application of these guidelines to any particular operation (see paragraph 5.11).

5.2 An *in situ* survey of the area to be dredged should be carried out. The distribution and depth of sampling should reflect the size of the area to be dredged, the amount to be dredged and the expected variability in the horizontal and vertical distribution of contaminants. In order to evaluate the number of samples to be analysed, different approaches might be retained.

5.3 Two examples of these different approaches are given below:

- a. The number of sampling stations should be adjusted to the area to be dredged by applying the

formula $N=px/25$, where x is the area in square metres and N the number of sampling stations where $N \geq 4$. According to the exchange characteristics of the area to be dredged, the number of sampling stations should be smaller for open areas (cf. "Recommendations for the management of dredged material in the port of Spain" (Cedex 1994)).

b. The table that follows gives an indication of the number of samples to be analysed in relation to the number of m^3 to be dredged in order to obtain representative results, assuming a reasonably uniform sediment in the area to be dredged.

Amount dredged (m^3 <i>in situ</i>)	Number of stations
Up to 25 000	3
from 25 000 to 100 000	4 - 6
from 100 000 to 500 000	7 - 15
from 500 000 to 2 000 000	16 - 30
> 2 000 000	extra 10 per million m^3

Core samples should be taken where the depth of dredging and the expected vertical distribution of contaminants warrant; otherwise a grab sample is considered appropriate. Sampling from the dredger is not acceptable.

5.4 Normally, the samples from each location should be analysed separately. However, if the sediment is clearly homogeneous with respect to sediment features (grain-size fractions and organic matter load) and expected level of contamination, it may be possible to take composite samples from adjacent locations, two or more at a time, provided care has been taken to ensure that the results give a justified mean value for the contaminants. The original samples should be retained until the procedure for the issue of a permit has been completed, in case the results indicate that further analysis is necessary.

Sampling in the case of the renewal of a dumping permit

5.5 If a survey indicates that the material is essentially below the lower reference threshold in paragraph 3.5 (b) above and no new events of pollution have taken place indicating that the quality of the material has deteriorated, surveys need not be repeated.

5.6 If the dredging activity involves material with a contaminant content between the upper and lower reference thresholds in paragraph 3.5 (a) and (b) above, it may be possible, on the basis of the initial survey, to reduce either the number of sampling stations or the number of parameters to be measured. However, sufficient information must be provided to confirm the initial analysis for the purpose of issuing a permit. If such a reduced sampling programme does not confirm the earlier analysis, the full survey should be repeated. If the number of parameters for repetitive measurement is reduced, a further analysis of all the parameters listed in Technical Annex I list is advisable at appropriate intervals not exceeding 5 years.

5.7 However, in areas where there is a tendency for sediments to show high levels of contamination, or where contaminant distribution changes rapidly in response to varying environmental factors, analysis of the relevant contaminants should be frequent and linked to the permit renewal procedure.

Provision of Input Data

5.8 The sampling scheme described above provides information for the purpose of issuing permits. However, the scheme can at the same time provide a suitable basis for estimating of total inputs and, for the time being in the current situation, can be considered the most accurate approach available for this purpose. In this context it is assumed that materials exempt from analysis represent insignificant inputs of contaminants and therefore it is not necessary to calculate or to report contaminant loads.

Parameters and methods

5.9 Since contaminants concentrate mainly in the fine fraction (# 2 mm) and even more specifically in the clay fraction (# 2 Fm), analysis should normally be carried out on the fine fraction sample (# 2 mm). It will also be necessary, in order to assess the likely impact of contaminant levels to provide information on:

- grain size fractions (% sand, silt, clay);
- load of organic matter;
- dry matter (% solids).

5.10 In those cases where analysis is required, it should be mandatory for metal substances listed in Technical Annex 1 (Primary group determinants). With respect to organochlorines, polychlorobiphenyls (PCBs) should be analysed on a case-by-case basis in non-exempt sediments because they remain a significant environmental contaminant. Other organohalogens should also be measured if they are likely to be present as a result of local inputs.

5.11 In addition, the authority responsible for issuing permits should carefully consider specific local inputs, including the likelihood of contamination by arsenic, polycyclic aromatic hydrocarbons (PAH) and organotin compounds. The authority should make provision for the analysis of these substances as necessary.

The following should be taken into account in this connection:

- potential routes by which contaminants could reasonably have been introduced into the sediments;
- probability of contamination from agricultural and urban surface run-off;
- spills of contaminants in the area to be dredged, in particular as a result of port activities;
- industrial and municipal waste discharges (past and present);
- source and prior use of dredged material (e.g. beach nourishment); and
- substantial natural deposits of minerals and other natural substances.

5.12 Further guidance on the selection of determinants and methods of contaminant analysis under local conditions, and on procedures to be used for harmonisation and quality assessment purposes, will be found in the Technical Annexes to these guidelines as adopted, and updated periodically, by the Contracting Parties.

6. CHARACTERISTICS OF THE DUMPING SITE AND METHOD OF DEPOSIT

6.1 Matters relating to dumping site selection criteria are addressed in greater detail in studies prepared by GESAMP¹ (Reports and Studies No. 16: Scientific Criteria for the Selection of Waste Disposal Sites at Sea, IMO 1982) and by ICES (Ninth Annual Report of the Oslo Commission, Annex 6).

The selection of a site for dumping at sea does not only involve the consideration of environmental parameters, but also economic and operational feasibility.

6.2 In order to be able to assess a new dumping site, basic information on the characteristics of the dumping site have to be considered by national authorities at a very early stage of the decision-making process.

For the purpose of studying the impact, this information should include the geographical coordinates of the dumping area (latitude, longitude), the distance to the nearest coastline as well as proximity of the dumping area to the following:

- recreational areas;
- spawning, recruitment and nursery areas of fish, crustaceans and molluscs;
- known migration routes of fish or marine mammals;
- commercial and sport fishing areas;
- mariculture areas;
- areas of natural beauty or significant cultural or historical importance;
- areas of special scientific, biological or ecological importance;
- shipping lanes;
- military exclusion zones;
- engineering uses of the seafloor (e.g. potential or ongoing seabed mining, undersea cables, desalination or energy conversion sites).

The dumping of dredged material should not interfere with nor devalue legitimate commercial and economic uses of the marine environment. The selection of dumping sites should take into account the nature and extent of both commercial and recreational fishing, as well as the presence of aquaculture areas, spawning, nursery and feeding areas.

6.3 In view of uncertainties regarding in the diffusion of marine contaminants giving rise to transboundary pollution, dumping of dredged material in the open sea is not considered to be the most suitable environmental solution to prevent marine pollution and should not be carried out.

6.4 For dredged materials, the only data to be considered for this purpose should include information on:

- disposal method (e.g. vessels, hopper discharge; and other controlled methods, like discharge through pipes);
- dredging method (e.g. hydraulic or mechanical), having regard to Best Environmental Practice (BEP).

6.5 For the evaluation of dispersal characteristics, the use of mathematical diffusion models requires the collection of certain meteorological, hydrodynamic and oceanographic data. In addition, data on the speed of the vessel dumping the material and the rate of dumping should also be made available.

6.6 The basic assessment of a site, whether a new or existing includes the consideration of possible effects that might arise due to the increase in certain constituents or to interaction (e.g. synergistic effects) with other substances introduced in the area, either through other dumping, input from rivers, discharges from coastal areas, exploitation areas, maritime transport, or through the atmosphere.

The existing stress on biological communities as a result of such activities should be evaluated before any new or additional dumping operations are conducted.

The possible future uses of resources and amenities in the sea receiving area should be kept in mind.

6.7 Information from baseline and monitoring studies at existing dumping sites will be important in the evaluation of any new dumping activity at the same site or nearby.

7. GENERAL CONSIDERATIONS AND CONDITIONS

NATURE, PREVENTION AND MINIMISATION OF THE IMPACT OF DISPOSAL OF DREDGED MATERIAL

7.1 Particular attention should be given to dredged material contaminated by hydrocarbons and containing substances that have a tendency to float following re-suspension in the water column. Such materials should not be dumped in a manner or at a location which may interfere with fishing, shipping, amenities or other beneficial uses of the marine environment.

7.2 In selecting dumping sites, the habitats of rare, vulnerable or endangered species must be avoided, taking into account the preservation of the biodiversity.

7.3 In addition to toxicological effects and bioaccumulation of the constituents of dredged material, other potential impacts on marine life should be considered, such as:

- alteration of the sensorial and physiological capacities and the behaviour of fish in particular in respect of natural predators;
- nutrient enrichment;
- oxygen depletion;
- increased turbidity;
- modification of the sediment composition and blanketing of the sea floor.

Physical impact

7.4 All dredged materials, whether or not contaminated, have a significant physical impact at the point of disposal. This impact includes covering of the seabed and a localised increase in the levels of suspended solids.

The physical impact may also extend to zones outside the dumping zone as such, resulting from the forward movement of the dumped material due to wave and tidal action and residual current movements, especially in the case of fine fractions.

In relatively enclosed waters, oxygen-consuming sediments (e.g. organic carbon-rich) could adversely affect the oxygen regime of receiving systems. In the same way, dumping of sediments with high levels of nutrients may significantly affect the nutrient fluxes and, subsequently, in extreme cases, contribute significantly to the eutrophication of the receiving zone.

Chemical impact

7.5 The chemical impact of dredged material disposal on the marine water quality and the marine biota, is mainly from the dispersion of pollutants in association with suspended particles, and the release of pollutants from the dumpsite sediments.

The binding capacity of contaminants may vary considerably. Contaminant mobility is dependant upon several factors among which are chemical form of contaminant, contaminant partitioning, type of matrix, physical state of the system (e.g. pH, TE, ..), waterflow, suspended matter (organic matter), physico-chemical state of the system, type of interactive processes, such as sorption/desorption - or precipitation/dissolution - mechanisms, and biological activities.

Bacteriological impact

7.6 Bacteriologically, dredging activities and dumping of dredged material may involve a resuspension, of sedimentary flora, particularly faecal bacteria, which are trapped in the sediment. Studies carried out show that, in particular on dredging sites, there is a significant correlation between turbidity and concentrations of germs tested (faecal coliforms, faecal streptococci).

Biological impact

7.7 The immediate biological consequence of this physical impact includes smothering of benthic flora and fauna in the dumping area.

Nevertheless, in some instances, after dumping activities stop, there may be a modification of the ecosystem, in particular when the physical characteristics of the sediments in the dredged material are very different to those in the receiving zone.

In certain special circumstances, disposal may interfere with migration of fish or crustaceans (e.g. if dumping is in the coastal migration path of crabs).

In other respects, the chemical pollution impact resulting from the dispersion of pollutants associated with suspended matter, and from the contaminants "relargage" from the sediments which are accumulated on the dumping site, can induce a change in the composition, biodiversity and abundance of benthic communities.

Economic impact

7.8 An important consequence of the physical presence of dumping of dredged material is interference with fishing activities and, in some instances, with navigation and recreation. The former concerns both the smothering of areas that may be used for fishing and interference with fixed fishing gear; shoaling following dumping can lead to navigational hazards and clay or silt deposition may be harmful in recreational areas. These problems can be aggravated if the spoil is contaminated with bulky harbour debris such as wooden beams, scrap metal, pieces of cable etc.

Approaches to management

7.9 This section deals only with management techniques to minimise the physical effects of disposal of dredged material. Measures to control the contamination of dredged materials are covered in other sections of these guidelines.

7.10 The key to management lies in careful site selection (see section 5) and assessment of the conflict between marine resources, the marine environment and activities. These notes are intended to supplement these considerations.

7.11 To avoid excessive use of the seabed, the number of sites should be limited as far as possible and each site should be used to the maximum extent possible without interfering with navigation (sand-shoals formation).

All measures should be taken to allow recolonization to take place once deposition stops.

7.12 Effects can be reduced by ensuring as far as possible that the sediments in the dredged material and receiving area are similar. Locally, the biological impact may be further reduced if the sedimentation area is naturally subject to physical disturbance (horizontal and vertical currents). Where this is not possible, and the materials are clean and fine, a deliberately dispersive style of dumping should be utilised so as to limit blanketing to a small site.

7.13 With capital and maintenance dredging, the material may be different in character to the sediments at the receiving site and re-colonisation may be affected. Where bulky material such as rock and clay are deposited, there may be interference with fishing activity, even in the long term.

7.14 Temporal restrictions on dumping activities may have to be imposed (for example tidal and seasonal restrictions). Interference with fish or crustacean migration or spawning or with seasonal fishing activities may be avoided by imposing a calendar for dumping operations.

Trench digging and refilling activities may also interfere with migratory patterns and similar restriction measures are needed.

7.15 Where appropriate, disposal vessels should be equipped with accurate positioning systems for example, satellite systems. Disposal vessels should be inspected and operations controlled regularly to ensure that the conditions of the dumping permit are being observed and that the crew is aware of its responsibilities under the permit. Ships' records and automatic monitoring and display devices (e.g. black-boxes), where these have been fitted, should be inspected to ensure that dumping is taking place at the specified dumping site.

Where solid waste is a problem, it may be necessary to specify that the disposal vessel (or dredger) is fitted with a grid to facilitate removal for disposal (or recovery) on land, rather than being dumped at sea.

7.16 Monitoring is an essential component of management action (see Part B).

8. DISPOSAL MANAGEMENT TECHNIQUES

8.1 Ultimately, the problem of disposal of contaminated dredged material can only be resolved effectively by implementing programmes and adopting measures for the progressive elimination of polluting discharges into the waters from which the dredged materials are taken.

Until this objective is met the problems caused by contaminated dredged material could be resolved by using appropriate disposal management techniques.

8.2 "Disposal management techniques" are actions and processes by which the impact of persistent

and potentially toxic substances contained in dredged material may be reduced to or maintained at a level that does not constitute a hazard to human health, harm living resources and marine life, damage amenities or interfere with other legitimate uses of the sea.

8.3 In any event, such techniques must be used in full conformity with relevant considerations in the Annex to the Dumping Protocol such as comparative assessment of alternative disposal options, and should always be associated with post-disposal monitoring (ecological follow-up) to assess the effectiveness of the techniques and the need for any follow-up management action.

9. PERMITS

9.1 The permit authorising sea disposal will contain the terms and conditions under which sea disposal may take place as well as provide a framework for assessing and ensuring compliance.

9.2 Permit conditions should be drafted in plain and unambiguous language and will be designed to ensure that:

- (a) only those materials which have been characterised and found acceptable for sea disposal, based on the impact assessment, are dumped;
- (b) the material is disposed of at the selected disposal site;
- (c) any necessary disposal management techniques identified during the impact analysis are carried out; and
- (d) any monitoring requirements are fulfilled and the results reported to the permitting authority.

10. REPORTS

10.1 Contracting Parties should transmit to the Organisation of the issued permits, the total amount of dredged material and the loads of contaminants. They should also inform the Organisation of their monitoring activities (see Part B).

10.2 Report to the Organisation of materials exempted from analysis will be voluntary.

PART B

MONITORING OF DREDGED MATERIAL DUMPING OPERATIONS

1. DEFINITION

1.1 In the context of assessing and regulating the environmental and human health impacts of dredged material dumping operations, monitoring is defined as all measures whose purpose is to determine, from the repeated measurement of a contaminant or an effect, whether direct or indirect, of the introduction of this contaminant into the marine environment, the spatial and temporal modifications undergone by the receiving zone as a result of the activity under consideration.

2. RATIONALE

2.1 Monitoring of dredged material dumping operations is generally undertaken for the following reasons:

- (i) to establish whether the permit conditions have been respected - conformity control - and consequently have, as intended, prevented adverse effects on the receiving area as a consequence of dumping;
- (ii) to improve the basis on which permit applications are assessed by improving knowledge of the field effects of major discharges which cannot be directly estimated by a laboratory evaluation or from the literature;
- (iii) to provide the necessary evidence to demonstrate that within the framework of the Protocol the monitoring measures applied are sufficient to ensure that the dispersive and assimilative capacities of the marine environment are not exceeded, and so do not cause damage to the environment.

3. OBJECTIVES

3.1 The purposes of monitoring are to determine contaminant levels in all sediments above the lower reference threshold in paragraph 3.5(b) of the guidelines and in bio-indicator organisms, the biological effects and consequences for the marine environment of the dumping of dredged material and, ultimately, to help managers to combat exposure of organisms to dredged materials and associated contaminants.

4. STRATEGY

4.1 Monitoring operations are expensive since they require considerable resources both to carry out measurement and sampling programmes at sea and the subsequent analytical work on the samples.

In order to approach the monitoring programme in a resource-effective manner, it is essential that the programme should have clearly defined objectives, that the measurements made can meet those objectives, and that the results should be reviewed at regular intervals in relation to the objectives.

Since the effects of dredged material dumping are likely to be similar in many areas, there appears to be little justification for monitoring all sites, particularly those receiving small quantities of dredged material. It would be more effective to carry out more detailed investigations at a few carefully chosen sites (e.g. those subject to large inputs of dredged material) in order to obtain a better understanding of the processes and effects involved.

In zones which present the same physical, chemical and biological characteristics, or nearly the same characteristics, there is strong presumptive evidence that the effects of dredged material dumping

are similar. On scientific and economic grounds, it is very difficult to justify monitoring of all sites, particularly those receiving small quantities of dredged material (e.g. less than 25,000 tons per year). It is therefore more appropriate and cost-effective to concentrate on detailed investigations at a few carefully chosen sites (e.g. those subject to large inputs of dredged material) in order to obtain a better understanding of the processes and effects involved.

5. IMPACT HYPOTHESIS

5.1 In order to establish such objectives, it is first necessary to derive an impact hypothesis describing predicted effects on the physical, chemical and biological environment both of the dumping zone and of the zones outside it. The impact hypothesis forms the basis for defining the field monitoring programme.

5.2 The aim of an impact hypothesis is to provide, on the basis of the available information, a concise scientific analysis of the potential effects of the proposed operation on human health, living resources, marine life, amenities and other legitimate uses of the sea. For this purpose, an impact hypothesis should incorporate information on the characteristics of the dredged material and on conditions at the proposed dumping site. It should encompass both temporal and spatial scales of potential effects.

One of the main requirements of the impact hypothesis is to produce criteria which describe the specific environmental effects of dumping activities, taking into account the fact that such effects have to be avoided outside the designated dredging and dumping zones (see Part A, Section 3).

6. PRELIMINARY EVALUATION

6.1 The preliminary evaluation should be as comprehensive as possible. The primary areas of potential impact should be identified as well as those considered to have the most serious consequences for human health and the environment. Alterations to the physical environment, risks to human health, devaluation of marine resources, and interference with other legitimate uses of the sea are often seen as priorities in this regard.

6.2 The expected consequences of dumping (targets) could be described in terms of the habitats, processes, species, communities and uses affected by the dumping. The precise nature of the change, response, or interference (effect) predicted could then be described. The target and the effect could be described (quantified) together in sufficient detail to eliminate any doubt as to the parameters to be measured during post-operational field monitoring. In the latter context, it might be essential to determine "where" and "when" the impacts can be expected.

7. REFERENCE BASELINE

7.1 In order to develop an impact hypothesis, it may be necessary to conduct a baseline survey which describes not only the environmental characteristics, but also the variability of the environment. It may also be helpful to develop sediment transport, hydrodynamic and other mathematical models, to determine the possible effects of dumping.

Where either physical or chemical effects at the seabed are expected, it will be necessary to examine the benthic community structure in areas where the dredged material disperses. In the case of chemical effects, it may also be necessary to examine the chemical quality of the sediments and the biota (including fish), in particular the major pollutant contents.

In order to assess the impact of the proposed activity on the surrounding environment, it will be necessary to compare the physical, chemical and biological quality of the affected areas with reference sites located away from dredged material dumping pathways. Such areas can be identified during the early stages of the impact assessment.

8. IMPACT HYPOTHESIS VERIFICATION: DEFINING THE MONITORING PROGRAMME

8.1 The measurement programme should be designed to ascertain that physical, chemical and biological changes in the receiving environment are within those projected and do not exceed the predicted impact hypothesis.

The measurement programme should be designed to determine:

- (a) whether the zone of impact differs from that projected; and,
- (b) whether the extent of changes outside the zone of direct impact is within the scale predicted.

The first question can be answered by designing a sequence of measurements in space and time that circumscribe the projected zone of impact to ensure that the projected spatial scale of change is not exceeded.

The second question can be answered by making physical, chemical and biological measurements that provide information on the extent of change that occurs outside the zone of impact, after the dumping operation takes place (verification of a null hypothesis).

Then, before any programme is drawn up and any measurements are made, the following questions should be addressed:

- (i) what testable hypothesis can be derived from the impact hypothesis?
- (ii) what exactly should be measured to test these impact hypotheses?
- (iii) in what compartment or at which locations can measurements most effectively be made?
- (iv) for how long should measurements continue to be made to meet the original aim?
- (v) what should be the temporal and spatial scale of the measurements made?
- (vi) how should the data be processed and interpreted?

8.2 It is recommended that the choice of contaminants to be monitored should depend primarily on the ultimate purposes of monitoring. It is definitely not necessary to monitor regularly all contaminants at all sites and it should not be necessary to use more than one substrate or effect to meet each aim.

9. MONITORING

9.1 The dumping of dredged material has its primary impact at the seabed. Thus although a consideration of water column effects cannot be discounted in the early stages of monitoring planning, it is often possible to restrict subsequent monitoring to the seabed.

9.2 Where it is considered that effects will be largely physical, monitoring may be based on remote methods such as side-scan sonar, to identify changes in the character of the seabed, and bathymetric techniques (e.g. echo sounding) to identify areas of dredged material accumulation. Both of these techniques will require a certain amount of sediment sampling to establish ground-truth. In addition, multispectral scanning can be used for monitoring the dispersion of suspended material (plumes, etc.).

9.3 Tracer tests may also prove useful in following the dispersal of the dredged material and assessing any minor accumulation of material not detected by bathymetric surveys.

9.4 Where, in relation to the impact hypothesis, either physical or chemical effects at the seabed are expected, it will be necessary to examine the benthic community structure in areas where the dredged material disperses. In the case of chemical effects, it may also be necessary to examine the chemical quality of the biota (including fish).

9.5 The spatial extent of sampling will need to take into account the size of the area designated for dumping, the mobility of the dumped dredged material and water movements which determine the direction and extent of sediment transport. It should be possible to limit sampling within the dumping site itself if effects in this area are considered to be acceptable and their detailed definition unnecessary. However, some sampling should be carried out to aid the identification of the type of effect which may be expected in other areas and for reasons of scientific rigour.

9.6 The frequency of surveying will depend on a number of factors. Where a dumping operation has been going on for several years, it may be possible to establish the effect at a steady state of input and repeated surveys would only be necessary if changes are made to the operation (quantities or type of dredged material dumped, method of disposal, etc.).

9.7 If it is decided to monitor the recovery of an area which is no longer used for dumping dredged material, more frequent measurements might be needed.

10. NOTIFICATION

10.1 The Contracting Parties should inform the Organisation of their monitoring activities.

Concise reports on monitoring activities should be prepared and transmitted to the Organisation as soon as they are available, in conformity with Article 26 of the Barcelona Convention.

Reports should detail the measurements made, results obtained and how these data relate to the monitoring objectives and confirm the impact hypothesis. The frequency of reporting will depend upon the scale of dumping activity, the intensity of monitoring and the results obtained.

11. FEEDBACK

11.1 Information gained from field monitoring (and/or other related research) can be used to:

- (a) modify or, in the best of cases, terminate the field monitoring programme;
- (b) modify or revoke the permit;
- (c) refine the basis on which applications for permits are assessed.

TECHNICAL SUPPLEMENTS TO THE GUIDELINES FOR THE MANAGEMENT OF DREDGED MATERIAL

TECHNICAL ANNEX 1

Analytical Requirements for the Assessment of Dredged Material

1. This Annex amplifies the analytical requirements set out in paragraphs 5.9 - 5.12 of the Guidelines for the Management of Dredged Material.
2. An integrated approach is essential. It includes a tiered approach under which the following are assessed in sequence:
 - the physical properties;
 - the chemical properties;
 - the biological properties and effects.

At each tier it will have to be determined whether there is sufficient information to allow a management decision to be taken or whether further analysis is required. Further information determined by local circumstances can be added at each tier.
3. As a preliminary to the tiered analysis scheme, information required under section 4.1 of the guidelines will be available. In the absence of appreciable pollution sources and if the visual determination of sediment characteristics leads to the conclusion that the dredged material meets one of the exemption criteria under paragraph 4.9 of the guidelines, the material will not require further analysis.
4. It is important that, at each stage, the assessment procedure takes account of the method of analysis.
5. Analysis should be carried out on the fraction of the sediment (# 2 mm).

Tier I: PHYSICAL PROPERTIES

In addition to the preliminary assessment of the characteristics of the sediments required by paragraph 4.1 of these guidelines, it is strongly recommended that the following be determined:

- distribution of grain size (% of sand, silt, clay);
- humidity ratio (%);
- amount of organic matter.

Tier II: CHEMICAL PROPERTIES

Primary group determinants:

In all cases where chemical analysis is required, the concentrations of the following trace metals should be determined:

Cadmium (Cd)	Chromium (Cr)
Copper (Cu)	Lead (Pb)
Mercury (Hg)	Nickel (Ni)
Zinc (Zn)	Tin (Sn)

In certain cases, the analysis may also include other metal pollutants. In the case of mercury, special attention should be paid to speciation.

Where dry matter analysis is required, the ratio of fresh weight/dry weight has to be considered, and the analysis has to be made on the interstitial water.

When examining the toxic trends of contaminated dredged sediment, the analysis should also include the leaching water before the dumping operation. Lastly, the total organic carbon should be measured.

With regard to organic pollutants, the total PCB content should be estimated. If local circumstances so require, the analysis should be extended to families of congeners.

In any event, the analysis must be carried out on the fraction of the sediment (# 2mm).

The polycyclic aromatic hydrocarbons (PAH) and the tributyltin compounds (TBT) and their degradation products should also be measured.

The measurement of PCB and PAH and TBT will not be necessary when:

- sufficient information from previous investigations indicates the absence of contamination ;
- there are no known sources (point or diffuse) of contamination nor historic inputs;
- the sediments are predominantly coarse; and
- the levels of total organic carbon are low.

Secondary group determinants:

Based upon local information on sources of contamination (point or diffuse sources) or historic inputs, other determinants may need to be measured for instance: arsenic; organophosphorus pesticides; organochlorine pesticides; organotin compounds; polychlorinated dibenzodioxins (PCDD); polychlorinated dibenzofurans (PCDF).

Tier III: BIOLOGICAL PROPERTIES AND EFFECTS

In a significant number of cases the physical and chemical properties do not allow the biological impact to be measured directly. Moreover, they do not adequately identify all the physical disturbances nor constituents associated with sediments present in the dredged material.

If the potential impact of the dredged material to be dumped cannot be adequately assessed on the basis of chemical and physical characteristics, biological measurements should be made.

1. Toxicity bioassays

The primary purposes of the biological bioassays is to provide direct measures of effects of all sediment constituents acting together, taking into account their bioavailability. For ranking and classifying the acute toxicity of harbour sediments prior to maintenance dredging, short term bioassays may often suffice as screening tool :

- C To evaluate the effects of the dredged material, bioassays for acute toxicity can be carried out with pore water, on elutriate or the whole sediment. In general, a set of 2-4 bioassays is recommended with organisms from different taxonomic groups (e. g. crustaceans, molluscs, polychaetes, bacteria, echinoderms);
- C In most bioassays, survival of the test species is used as an endpoint. Chronic bioassays with sub-lethal endpoint (growth, reproduction, etc.) covering a significant part of the test species life cycle may provide a more accurate prediction of potential impacts of dredging operations. However, standard test procedures are still under developments.

The outcome of sediment bioassays can be unduly influenced by factors other than sediment-associated chemicals. Confounding factors like ammonia, hydrogen sulphide, grain size, oxygen content and pH should therefore be determined during the bioassays.

Guidance on the selection of appropriate test organisms, use and interpretation of sediment bioassays is given by e.g. EPA/CE (1991/1994) and IADC/CEDA (1997) while guidance on sampling of sediments for toxicological testing is given by e.g. ASTM (1994).

2. Biomarkers

Biomarkers may provide early warning of more subtle (biochemical) effects at low and sustained levels of contamination. Most biomarkers are still under development but some are already applicable for routine application on dredged material (e.g. one which measures the presence of dioxin-like compounds - Murk *et al.*, 1997) or organisms collected in the field (e.g. DNA strand/breaks in flat fish).

3. Microcosm experiments

There are short-term microcosm tests available to measure the toxicant tolerance of the community e.g. Pollution Induced Community Tolerance (PICT) (Gustavson and Wangberg, 1995).

4. Mesocosm experiments

Because of the costs and time involved these experiments cannot be used for issuing permits but are useful in cases where the extrapolation of laboratory testing to field conditions is complicated or when environmental conditions are very variable and hinder the identification of toxic effects as such. The results of these experiments would be then available for future decisions on permits.

5. Field observations of benthic communities

In situ monitoring of benthic communities (fish, benthic invertebrates) in the area of the disposal site can provide important indications of the condition of marine sediments. Field observations give an insight into the combined impact of physical disturbance and chemical contamination. Guidelines on the monitoring of benthic communities are provided by e.g. the Paris Convention, 1992, ICES.

6. Other biological properties

Where appropriate, other biological measurements can be applied in order to determine, for example, the potential for bioaccumulation and for tainting.

SUPPLEMENTARY INFORMATION

The need for this information will be determined by local circumstances and may form an essential part of the management decision. Appropriate data might include: redox potential, sediment oxygen demand, total nitrogen, total phosphorus, iron, manganese, mineralogical information or parameters for normalising trace metal data (e.g. aluminium, lithium, scandium see Technical Annex 2).

TECHNICAL ANNEX 2

NORMALISATION TECHNIQUES FOR STUDIES ON THE SPATIAL DISTRIBUTION OF CONTAMINANTS²

1. Introduction

Normalisation in this discussion is defined as a procedure to compensate for the influence of natural processes on the measured variability of the concentration of contaminants in sediments. Most contaminants (metals, pesticides, hydrocarbons) show high affinity to particulate matter and are, consequently, enriched in bottom sediments of estuaries and coastal areas. In practice, natural and anthropogenic substances entering the marine system are subjected to a variety of biogeochemical processes. As a result, they become associated with fine-grained suspended solids and colloidal organic and inorganic particles. The ultimate fate of these substances is determined, to a large extent, by particulate dynamics. They therefore tend to accumulate in areas of low hydrodynamic energy, where fine material is preferentially deposited. In areas of higher energy, these substances are "diluted" by coarser sediments of natural origin and low contaminant content.

It is obvious that the grain size is one of the most important factors controlling the distribution of natural and anthropogenic components in the sediments. It is, therefore, essential to normalise for the effects of grain size in order to provide a basis for meaningful comparisons of the occurrence of substances in sediments of various granulometry and texture within individual areas or among areas. Excess levels, above normalised background values, could then be used to establish sediment quality.

For any study of sediments, a basic amount of information on their physical and chemical characteristics is required before an assessment can be made on the presence or absence of anomalous contaminant concentrations. The concentration at which contamination can be detected depends on the sampling strategy and the number of physical and chemical variables that are determined in individual samples.

The various granulometric and geochemical approaches used for the normalisation of trace elements data as well as the identification of contaminated sediments in coastal sediments has been extensively reviewed by Loring (1988). Two normalisation approaches widely used in oceanography and in atmospheric sciences have been selected here. The first is purely physical and consists of characterising the sediment by measuring its content of fine material. The second approach is chemical in nature and is based on the fact that the small size fraction is usually rich in clay minerals, iron and manganese oxides and organic matter. Furthermore, these components often exhibit a high affinity for organic and inorganic contaminants and are responsible for their enrichment in the fine fraction. Chemical parameters (e.g., Al, Sc, Li) representative of these components may thus be used to characterise the small size fraction under natural conditions.

² Extract from 1989 ACMP Report (Section 14) ICES Coop. Res. Rep. 167, pp. 68-75

It is strongly suggested that several parameters be used in the evaluation of the quality of sediments. The types of information that can be gained by the utilisation of these various parameters are often complementary and extremely useful considering the complexity and diversity of situations encountered in the sedimentary environment. Furthermore, measurements of the normalising parameters selected here are rather simple and inexpensive.

This report presents general guidelines for sample preparation, analytical procedures, and interpretation of physical and chemical parameters used for the normalisation of geochemical data. Its purpose is to demonstrate how to collect sufficient data to normalise for the grain-size effect and to allow detection, at various levels, of anomalous concentrations of contaminants within coastal sediments.

2. Sampling Strategy

Ideally, a sampling strategy should be based on a knowledge of the source of contaminants, the transport pathways of suspended matter and the rates of accumulation of sediments in the region of interest. However, existing data are often too limited to define the ideal sampling scheme. Since contaminants concentrate mainly in the fine fraction, sampling priority should be given to areas containing fine material that usually correspond to zones of deposition.

The high variability in the physical, chemical and biological properties of sediments implies that an evaluation of sediment quality in a given area must be based on a sufficient number of samples. This number can be evaluated by an appropriate statistical analysis of the variance within and between samples. To test the representativity of a single sediment specimen at a given locality, several samples at one or two stations should be taken.

The methodology of sampling and analysis should follow the recommendations outlined in the "Guidelines for the Use of Sediments as a Monitoring Tool for Contaminants in the Marine Environment" (ICES 1987). In most cases, the uppermost layer of sediments collected with a tightly closing grab sampler (Level I in the Guidelines) is sufficient to provide the information concerning the contamination of the sediments of a given area compared to sediments of uncontaminated locations or other reference material.

Another significant advantage of using sediments as monitoring devices is that they have recorded the historical evolution of the composition of the suspended matter deposited in the area of interest. Under favourable conditions, the degree of contamination may be estimated by comparison of surface sediments with deeper samples, taken below the biological mixing zone. The concentrations of trace elements in the deeper sediment may represent the natural background level in the area in question and can be defined as baseline values. This approach requires sampling with a box-corer or a gravity corer (Levels II and III in the Guidelines).

3. Analytical Procedures

Typical analytical procedures to be followed are outlined in Figure 2. The number of steps that are selected will depend on the nature and extent of the investigation.

3.1 Grain size fractionation

It is recommended that at least the amount of material <63 μm , corresponding to the sand/silt classification limit, be determined. The sieving of the sample at 63 μm is, however, often not sufficient, especially when sediments are predominantly fine grained. In such cases, it is better to normalise with lower size thresholds since the contaminants are mainly concentrated in the fraction <20 μm , and even more specifically in the clay fraction (> 2 μm). It is thus proposed that a determination be made, on a sub-sample, of the weight fraction > 20 μm and that > 2 μm with the aid of a sedimentation pipette or by elutriation. Several laboratories are already reporting their results relative to the content of fine fractions of various sizes and these results may be useful for comparison among areas.

3.2 Analysis of contaminants

It is essential to analyse the total content of contaminants in sediments if quality assessment is the goal of the study, and it is thus recommended that the unfractionated sample (#2 mm) be analysed in its entirety. The total content of elements can be determined either by non-destructive methods, such as X-ray fluorescence or neutron activation, or by a complete digestion of the sediments (involving the use of hydrofluoric acid (HF)) followed by methods such as atomic absorption spectrophotometry or emission spectroscopy. In the same way, organic contaminants should be extracted with the appropriate organic solvent from the total sediment.

An individual size fraction of the total sediment may be used for subsequent analysis, if required, to determine the absolute concentrations of contaminants in that fraction, providing that its contribution to the total is kept in perspective when interpreting the data. Such size fraction information might be useful in tracing the regional dispersal of metals associated with specific grain-size fractions, when the provenance of the material remains the same. However, sample fractionation is a tedious procedure that introduces considerable risk of contamination and potential losses of contaminants due to leaching. The applicability of this approach is thus limited.

4. Normalisation Procedures

4.1 Granulometric normalization

Since contaminants tend to concentrate in the fine fraction of sediments, correlations between total concentrations of contaminants and the weight percent of the fine fraction, determined separately on a sub-sample of the sediment by sieving or gravity settling, constitute a simple but powerful method of normalisation. Linear relationships between the concentration and the weight percentage of the fine fraction are often found and it is then possible to extrapolate the relationships to 100% of the fraction studied, or to characterise the size dependence by the slope of the regression line.

4.2 Geochemical normalisation

Granulometric normalisation alone is inadequate to explain all the natural trace variability in the sediments. In order to interpret better the compositional variability of sediments, it is also necessary to attempt to distinguish the sedimentary components with which the contaminants are associated throughout the grain-size spectrum. Since effective separation and analysis of individual components of sediments is extremely difficult, such associations must rest on indirect evidence of these relationships.

Since contaminants are mainly associated with the clay minerals, iron and manganese oxides and organic matter abundant in the fine fraction of the sediments, more information can be obtained by measuring the concentrations of elements representative of these components in the samples.

An inert element such as aluminium, a major constituent of clay minerals, may be selected as an indicator of that fraction. Normalised concentrations of trace elements with respect to aluminium are commonly used to characterise various sedimentary particulate materials (see below). It may be considered as a conservative major element, that is not affected significantly by, for instance, early diagenetic processes and strong redox effects observed in sediments.

In the case of sediments derived from the glacial erosion of igneous rocks, it has been found that contaminant/Al ratios are not suitable for normalising for granular variability (Loring, 1988). Lithium, however, appears to be an ideal element to normalise for the grain size effect in this case and has the additional advantage of being equally applicable to non-glacial sediments.

In addition to the clay minerals, Mn and Fe compounds are often present in the fine fraction, where they exhibit adsorption properties strongly favouring the incorporation of various contaminants. Mn and Fe are easily analysed by flame atomic absorption spectrometry and their measurement may provide insight into the behaviour of contaminants.

Organic matter also plays an important role as scavenger of contaminants and controls, to a major

degree, the redox characteristics of the sedimentary environment.

Finally, the carbonate content of sediments is easy to determine and provides additional information on the origin and the geochemical characteristics of the sediments. Carbonates usually contain insignificant amounts of trace metals and act mainly as a diluent. Under certain circumstances, however, carbonates can fix contaminants such as cadmium and copper. A summary of the normalisation factors is given in Table 1.

4.3 Interpretation of the data

The simplest approach in the geochemical normalization of substances in sediments is to express the ratio of the concentration of a given substance to that of the normalising factor.

Normalisation of the concentration of trace elements with respect to aluminium (or scandium) has been used widely and reference values on a global scale have been established for trace elements in various compartments: crustal rocks, soils, atmospheric particles, river-borne material, marine clays and marine suspended matter (cf., e.g., Martin and Whitfield, 1983; Buat-Menard and Chesselet, 1979).

This normalisation also allows the definition of an enrichment factor for a given element with respect to a given compartment. The most commonly used reference level of composition is the mean global normalised abundance of the element in crustal rock (Clarke value). The enrichment factor EF is given by:

$$EF_{\text{crust}} = (X/Al)_{\text{sed}} / (X/Al)_{\text{crust}}$$

where X/Al refers to the ratio of the concentration of element X to that of Al in the given compartment.

However, estimates of the degree of contamination and time trends of contamination at each sampling location can be improved upon by making a comparison with metal levels in sediments equivalent in origin and texture.

These values can be compared to the normalised values obtained for the sediments of a given area. Large departures from these mean values indicate either contamination of the sediment or local mineralization anomalies.

When other variables (Fe, Mn, organic matter and carbonates) are used to characterise the sediment, regression analysis of the contaminant concentrations with these parameters often yields useful information on the source of contamination and on the mineralogical phase associated with the contaminant.

A linear relationship between the concentration of trace constituents and that of the normalisation factor has often been observed (Windom *et al.*, 1989). In this case and if the natural geochemical population of a given element in relation to the normalising factor can be defined, samples with anomalous normalised concentrations are easily detected and may indicate anthropogenic inputs.

According to this method, the slope of the linear regression equation can be used to distinguish the degree of contamination of the sediments in a given area. This method can also be used to show the change of contaminant load in an area if the method is used on samples taken over intervals of some years (Cato, 1986).

A multi-element/component study in which the major and trace metals, along with grain size and organic carbon contents, have been measured allows the interrelationships between the variables to be established in the form of a correlation matrix. From such a matrix, the most significant ratio between trace metal and relevant parameter(s) can be determined and used for identification of metal carriers, normalisation and detection of anomalous trace metal values. Factor analyses can sort all the variables into groups (factors) that are associations of highly correlated variables, so that specific and/or non-specific textural, mineralogical, and chemical factors controlling the trace metal variability may be inferred from the

data set.

Natural background levels can also be evaluated on a local scale by examining the vertical distribution of the components of interest in the sedimentary column. This approach requires, however, that several favourable conditions are met: steady composition of the natural uncontaminated sediments; knowledge of the physical and biological mixing processes within the sediments; absence of diagenetic processes affecting the vertical distribution of the component of interest. In such cases, grain-size and geochemical normalisation permits compensation for the local and temporal variability of the sedimentation processes.

5. Conclusions

The use of the granulometric measurements and of component/reference element ratios are useful approaches towards complete normalisation of granular and mineralogical variations, and identification of anomalous concentrations of contaminants in sediments. Their use requires that a large amount of good analytical data be collected and specific geochemical conditions be met before all the natural variability is accounted for, and the anomalous contaminant levels can be detected. Anomalous metal levels, however, may not always be attributed to contamination, but rather could easily be a reflection of differences in sediment provenance.

Geochemical studies that involve the determination of the major and trace metals, organic contaminants, grain size parameters, organic matter, carbonate, and mineralogical composition in the sediments are more suitable for determining the factors that control the contaminant distribution than the measurement of absolute concentrations in specific size fractions or the use of potential contaminant/reference metal ratios alone. They are thus more suitable for distinguishing between uncontaminated and contaminated sediments. This is because such studies can identify the factors that control the variability of the concentration of contaminants in the sediments.

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TECHNICAL ANNEX 3

CONSIDERATIONS BEFORE TAKING ANY DECISION TO GRANT A DUMPING PERMIT

This technical Annex was prepared bearing in mind that, although the guidelines strictly only apply to the disposal of dredged material, Contracting Parties are urged to consider other methods of disposal than dumping (e.g. land disposal), and to explore all possible beneficial uses of dredged material, before taking any decision to grant a dumping permit (See Part A, par. 3). The goal of this Technical Annex is not to screen all the possibilities offered by the different techniques, but to give some indications about them.

I. BENEFICIAL USES OF DREDGING MATERIAL

Material arising from Capital dredging are often used for construction purposes. This is, however, not normally the case when dredged material result from maintenance dredging. However that may be, if the dredged material is clean or slightly contaminated, it might be regarded as a valuable resource, and consequently, be considered for beneficial use. Nevertheless, before choosing a specific beneficial use, it is necessary to make a cost/benefit analysis to establish that the cost of such an option is not prohibitive (BATNEEC principle : Best available techniques not entailing excessive costs).

Depending on the composition and grain size distribution of the dredged material, it might be used beneficially for construction or environmental enhancement.

Construction uses

Generally these uses are located in or adjacent to coastal areas or within the waterway margin. Examples are land creation, beaches nourishment, formation of suitable offshore berms, construction of dikes or dams, replacement fill (restoration of former excavation sites of construction materials, obsolete canals and docks, ...).

Environmental enhancement

Numerous applications of dredged material for the enhancement of the environment can be envisaged. These range from restoration and establishment of wetlands to multipurpose site development, including restoration and establishment of terrestrial habitats, nesting islands, and fisheries;. It also included the construction of artificial reefs, particularly if the dredged material is bulky (for example, rocks). (Any construction of an artificial reef, however, should be preceded by a specific study of the structure's impact on the natural environment: in this case, advice from biologists specialising in fisheries is essential.). In any case, during and after the execution of the project, the impact and the performance of the beneficial use should be monitored.

To assess the possibilities for the beneficial use of material in a specific situation, the following parameters have to be considered : physical characterisation, contaminant status, beneficial use options, site selection, technical feasibility, regulatory acceptability, cost/benefit analysis.

When considering the possibilities other than dumping, if no acceptable beneficial use solution is found, land disposal and/or treatment are the other options.

II. LAND DISPOSAL

When neither sustainable relocation nor beneficial use options are appropriate, disposal in land based confined disposal facilities is usually the only remaining option.

In principle, land based confined disposal sites are preferred for polluted dredged material which

is unsuitable for open water disposal.

Various configurations are possible but no one presents a complete safeguard against risk of environmental pollution. Possible pathways resulting in risk are : effluent which is expelled from the disposal sites, during and after the disposal ; leaching and transport of contaminants into surrounding ground and surface water ; animal and plant uptake, dust and gaseous emissions, and excavations.

The potential effects of such sites therefore depend on both the characteristics of the site and its environs (mainly regarding the ground water table situation), and on the characteristics of the dredged material, the latter including the contaminants that are present.

To minimise the transport of contaminants into the ground water and surrounding surface water through advection and diffusion processes, application of insulation layers or hydrological management might be considered. Treatment of surplus water resulting from the expellation of water from the compressed dredged material, might also be considered.

III. TREATMENT OF DREDGED MATERIAL

Treatment is defined as a way of processing with the aim of reducing the amount of contaminated material (e.g. separation) or reducing the contamination to meet regulatory standards and criteria.

Treatment processes can in general be classified as follows :

- Pretreatment, the goal of which being to reduce the volume of dredged material requiring further treatment or disposal, and to improve the physical quality of the material for further handling and treatment ; the main categories of pretreatment are : dewatering ; size separation ; washing ; density separation ; magnetic separation.
- Biological treatment (degradation of organic substances by micro-organisms);
- Chemical treatment (pH adjustment, oxidation, ion exchange, etc.) ; the categories of chemical treatment are : destruction of organic compounds ; extraction of organic compounds ; extraction of metals ;
- Thermal treatment (thermal desorption, incineration, thermal reduction and vitrification) (Most technologies in this category provide a product such as gravel or bricks which can be used as building material);
- Immobilisation treatment (by chemically binding of the contaminants to the solid particles - fixation - or by physically preventing the contaminants from moving - solidification).
- Pretreatment excess water treatment.

The cost of treatment is generally higher, sometimes considerably greater than the cost of disposal. The cost versus effectiveness ratio is one of the most important questions which every national controlled authority will have to face.

TECHNICAL ANNEX 4

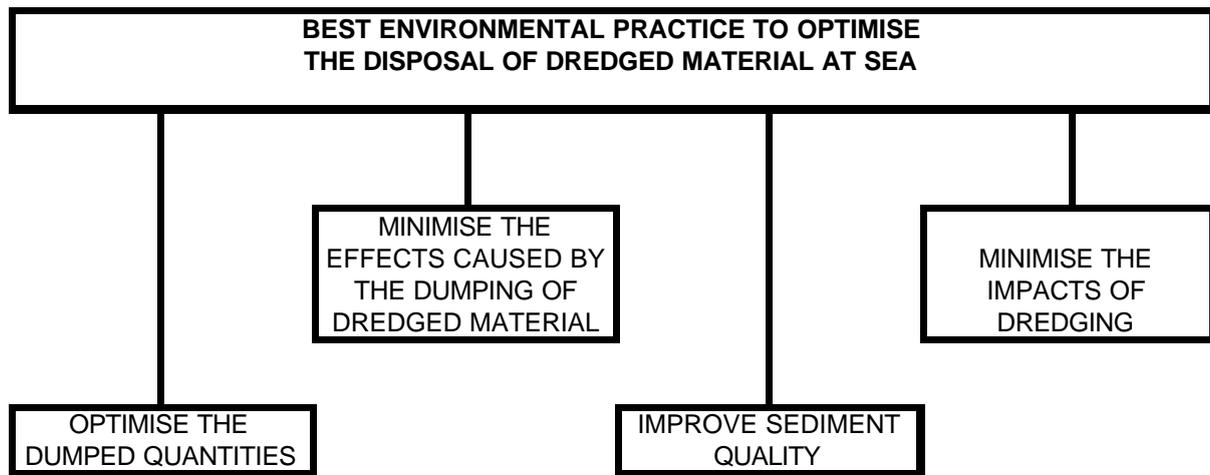
DREDGING ACTIVITIES : BEST ENVIRONMENTAL PRACTICE (BEP)

This Technical Annex was prepared bearing in mind that, although the guidelines strictly only apply to the disposal of dredged material, Contracting Parties are encouraged also to exercise control over dredging operations.

This Technical Annex has as its aim to provide guidance to national regulatory authorities,

operators of dredging vessels and port authorities on how to minimise the effects on the environment of dredging and disposal operations. Careful assessment and planning of dredging operations are necessary to minimise the impacts on marine species and habitats.

The items given as BEP under the different headings of this Technical Annex are given as examples. Their applicability will generally vary according to the particular circumstances of each operation and it is clear that different approaches may then be appropriate. More detailed information on dredging techniques and processes can be found in Guide 4 of the IADC/CEDA series on Environmental Aspects of Dredging.



Point A - Minimisation of the effects caused by the disposal of dredged material is comprehensively described in the main body of these guidelines

Point B - Optimisation of the disposed quantities; **Point C** - "Improvement of sediment quality "; and **Point D** - "Minimise the impacts of dredging" do not fall within the strict remit of the Protocol, but are relevant to the prevention of pollution of the marine environment resulting from the dumping of dredged material.

Figure 1: INDICATIVE FLOW DIAGRAM

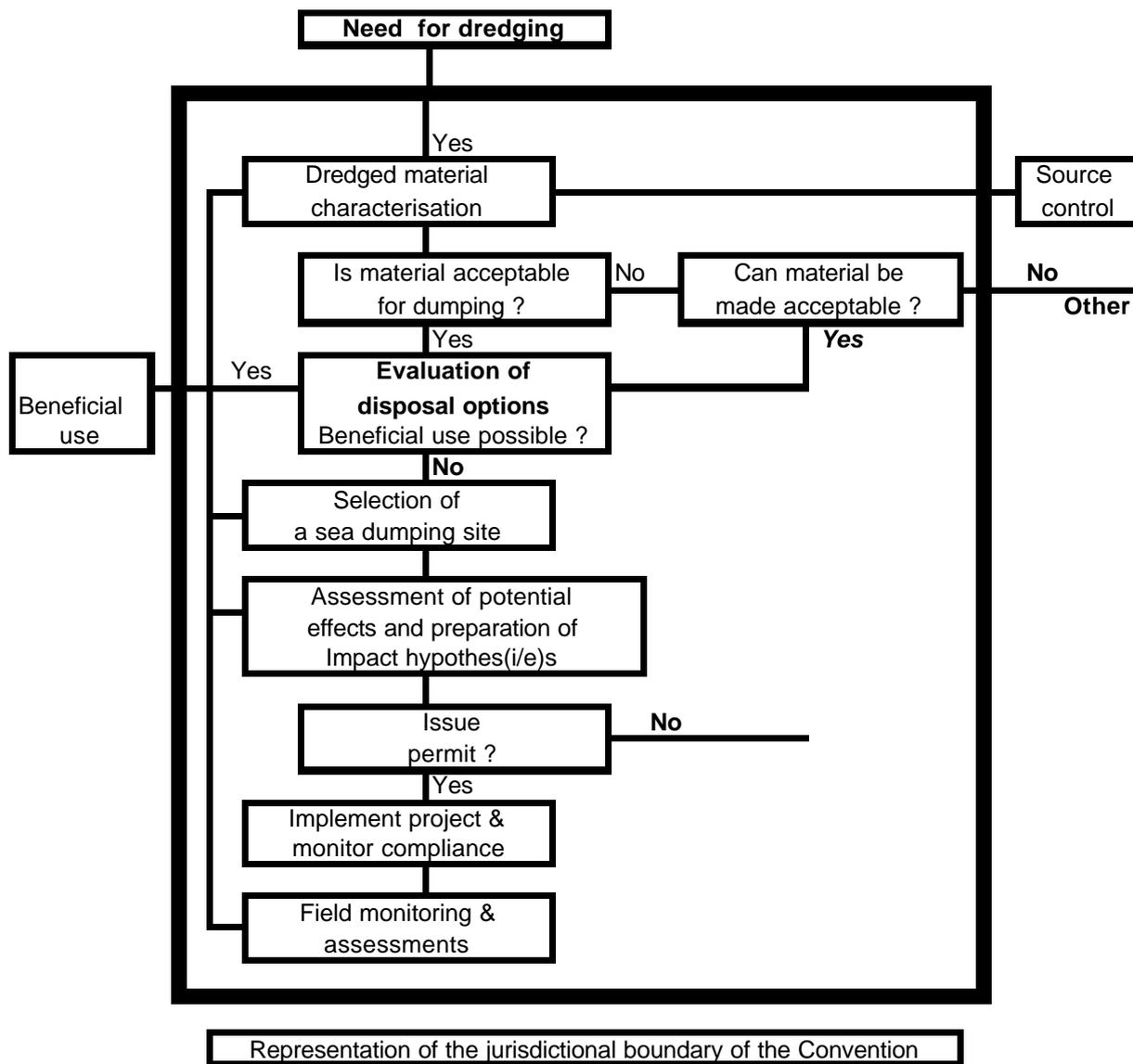


Figure 2 : A TYPICAL APPROACH FOR THE DETERMINATION OF PHYSICAL AND CHEMICAL PARAMETERS IN MARINE SEDIMENTS

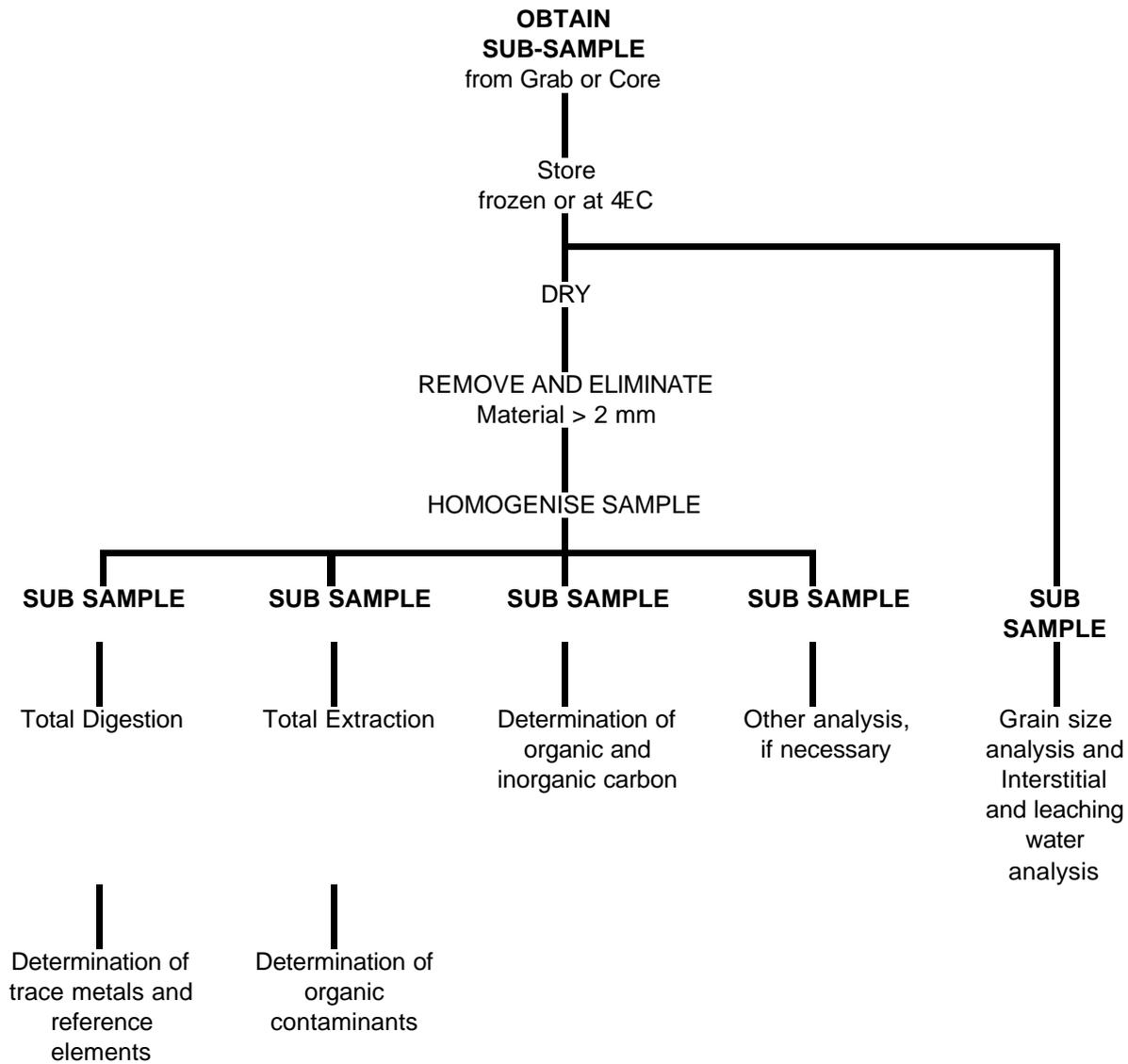


Table 1: SUMMARY OF NORMALISATION FACTORS

NORMALISATION FACTOR	GRAIN SIZE (Fm)	INDICATOR	ROLE
<u>Textural</u>			
Sand	2000 to 63	Coarse-grained metal-poor minerals / compounds	Determines physical sorting and depositional pattern of metals Usually diluent of trace metal concentrations
Mud	< 63	Silt and clay size metal-bearing minerals / compounds	Usually overall concentrator of trace metals
Clay	< 2	Metal-rich clay minerals	Usually fine-grained accumulator of trace metals
<u>Chemical</u>			
Si		Amount and distribution of metal-poor quartz	Coarse-grained diluter of contaminants
Al		All silicates but used to account for granular variations of metal-rich fine silt and clay size Al-silicates	Chemical tracer of Al-silicates, particularly the clay minerals
Li, Sc		Structurally combined in clay minerals and micas	Tracer of clay minerals, particularly in sediments containing Al-silicates in all size fractions
Organic carbon		Fine-grained organic matter	Tracer of organic contaminants. Sometimes accumulator of trace metals like Hg and Cd.
Fe, Mn		Metal-rich silt and clay size Fe-bearing clay minerals. Fe-rich heavy minerals and hydrous Fe and Mn oxides	Chemical tracer for Fe-rich clay fraction. High absorption capacity of organic and inorganic contaminants
Carbonates		Biogenic marine sediments	Diluter of contaminants. Sometimes accumulate trace metals like Cd and Cu.

Appendix VII

REFERENCE CLASSIFICATION OF MARINE HABITAT TYPES FOR THE MEDITERRANEAN REGION

as adopted by the Contracting Parties (Malta, 27-30 October 1999)

FOREWORD

Aims of this working document

The present document includes the draft classification of benthic marine habitat types as it has been finalized by the 4th Meeting of the National Focal Points for SPA (Tunis, 12-14 April 1999) and cleared by the Meeting of MAP National Focal Points (Athens, 6-9 September 1999). It is submitted to the 11th Ordinary Meeting of the Contracting Parties for adoption.

Background information

Section 2.1 of the Mediterranean Action Plan - Phase II and Articles 3.3 and 15 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean contain provisions for the preparation of inventories of the elements of biological diversity important for its conservation and sustainable use. MAP Phase II also provides for such inventories to be prepared according to common criteria jointly established by the Contracting Parties.

Within this framework, the Regional Activity Centre for Specially Protected Areas (RAC/SPA) was invited by the Extraordinary Meeting of the Contracting Parties held in Montpellier, 1-4 July 1996, to prepare common criteria and guidelines for the preparation of inventories.

To carry out this mandate, RAC/SPA convened a Meeting of Experts on criteria for the preparation of inventories of the elements of biological diversity in the Mediterranean region (Athens, 8-10 September 1997). The meeting finalized criteria for the preparation of national inventories of natural sites of conservation interest. To guide the identification of sites to be inventoried, the criteria provide inter alia for the establishment of a reference list of marine and coastal habitat types. The criteria also indicate that the list should be elaborated taking into account a model classification of habitat types to be established by RAC/SPA.

The criteria were adopted by the 10th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Tunis, 18-21 November 1997). The same meeting invited RAC/SPA to work on elaborating of the reference list of habitat types, as well as the model classification of habitat types for the Mediterranean region. It also decided that such tools will be finalized at the level of the meeting of the National Focal Points for SPA and adopted at the level of the Meeting of the Contracting Parties (Doc. UNEP(OCA)/MED IG.11/10, Annex IV).

With a view to providing input for the elaboration of the above-mentioned habitat classification and reference list, RAC/SPA convened a Meeting of Experts on marine habitat types in the Mediterranean region. The meeting, which received financial and technical support from France, was held in Hyères from 18 to 20 November 1998. The work of the meeting led to the elaboration of a draft classification of benthic marine habitat types for the Mediterranean region.

On the basis of the outcomes of the mentioned meeting of experts in Hyères, the 4th Meeting of the National Focal Points for SPA (Tunis, 12-14 April 1999) finalized the classification of benthic marine habitat types for the Mediterranean region with a view to transmitting it to the 11th Ordinary Meeting of the Contracting Parties for adoption.

In addition to the classification of marine benthic habitats thus finalized, the meeting recommended to work on the elaboration of a classification of habitats for the pelagic environment, and invited RAC/SPA to organize to this end a working group of experts. Following the meeting, the members of the group were identified in consultation with the National Focal Points for SPA.

1. INTRODUCTION

The present classification of the various marine habitats types for the Mediterranean region is being established within the framework of the Mediterranean Action Plan of UNEP, with the primary aim of serving as a common reference for the establishment of national inventories of marine and coastal natural sites of conservation interest, to be compiled pursuant to the Mediterranean Action Plan - Phase II and art. 15 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

The specificity of the Mediterranean Sea, its high level of diversity, and the density of the knowledge already acquired call for harmonisation and for a specific study to be carried out. The types of habitats taken into account constitute most often the general case, whereas the local specificities are dealt with within the framework of national studies.

Numerous initiatives, meetings, and reports enabled hierarchical lists of European marine habitats to be established. The main purpose of these initiatives (CORINE¹-biotopes, EEC Habitat Directive 92/43 - Annex 1, Palaeartic Classification, EUNIS² habitat classification) was to establish valid lists of all the habitats in Europe.

As early as 1988, France published a zoning scheme covering the whole of the land and part of the coastal areas as Natural Zones of Fauna, Flora and Ecological Interest (ZNIEFF³). The classification of the biocenoses established by Peres and Picard (1964) was used for determining the sea-ZNIEFF (Anonymous, 1988) and was taken into account not only for the French coasts but also for the whole of the Mediterranean basin. For the Provence-Alpes-Cote d'Azur Region 107 Sea-ZNIEFF have been created, the main objective of which was to present a synthesis of the scientific data available on this environment to optimise its management.

The inventory of the ZNIEFFs concerns knowledge and is considered as a scientific instrument and not as a legal tool although it is used as a protection and management administrative decision making support tool.

The inventory of the ZNIEFFs is of primary importance for the French state as a basis for international programmes and obligations (inventory of Important Bird Areas, Special Protection Areas in keeping with the EEC "Bird" Directive, inventory as a prerequisite for the designation of Special Conservation Areas in keeping with the EEC "Habitats, Fauna, Flora" Directive, Alpine Convention, Statistics for the European Environment Agency, etc.).

As early as 1991, when the inventory of ZNIEFFs was widely used, a reflection process took place that involved the real estate developers, the users and the scientists in order to:

- learn from the utilisation of the existing inventory,
- improve the legibility of the forms established,
- include new data,
- harmonise and standardise information at national level and with foreign partners.

In 1993, a first list of Parameters and Biocenoses of the metropolitan French coasts (Dauvin *et al.*, 1993) was established by a working group composed of French Mediterranean and

¹ CORINE: Coordination of Information on the Environment

² EUNIS: European Nature Information System of the European Environment Agency, managed by its Topic Centre on Nature Conservation in Paris

³ ZNIEFF: Zones Naturelles d'Intérêt Ecologique, Faunistique et Floristique: Inventory of natural sites in France

Atlantic experts on the benthos.

In 1994, a second updated and completed edition (Dauvin *et al.*, 1994) provided a detailed typology based on the CORINE-biotopes list for the metropolitan French coast.

At the European level, the document 'CORINE biotopes manual' (1988) updated in 1989 and edited in 1991 (Anonymous, 1991) and which is a reference for the EEC Directive 92/43 EEC proved to be of difficult use for maritime purpose and more so in the Mediterranean zone. Not only was it too schematic but it also contained several errors and some misleading information.

For the north-east part of the Atlantic coast, Connor *et al.* (1995), taking as a model the typology of the ZNIEFFs and after several meetings of European experts, could establish a classification of the benthic marine biotopes of the United Kingdom and of the Republic of Ireland. This activity was carried out within the BIOMAR programme.

The classification of Palaeartic habitats (Devilliers and Devilliers-Terschuren, 1996) is a development and a geographical extension of the CORINE biotopes which does not provide significantly more information for the Mediterranean Sea.

For the Mediterranean Sea several more or less complete documents suited to the problem can be used for the demarcation of zones of heritage or ecological interest, zones that require a certain level of protection or for which sensible management is sought:

- the definition of benthic biocenoses resulting from the works in the line of Peres and Picard (1964) and for which there are only few syntheses available (Gamulin Brida, 1967; Augier, 1982; Peres, 1982; Ros *et al.*, 1985; Bellan-Santini *et al.*, 1994);
- the CORINE biotopes classification which is too succinct;
- the classifications of Palaeartic and BIOMAR habitats, unsuitable for the Mediterranean Sea;
- the list of marine biocenoses for the French metropolitan coasts (Dauvin *et al.* 1994) which has been validated for France but which must be completed and reviewed for the Mediterranean Sea; this work is in progress within the framework of the French programme for the revision of ZNIEFFs started in 1995.

The list of marine biocenoses of the French metropolitan coasts (Dauvin *et al.*, 1994) is the result of a compilation made by scientists who worked on benthic populations (communities or biocenoses; habitats as defined by the EEC Directive) in the Mediterranean Sea and on the Atlantic and Channel coasts, followed by a common reflection of these scientists.

Biocenoses have been classified as a function of the zonation and granulometric nature of the sediment.

Priority environments are those that contribute to the identification of the zone either for their own value or for that of the species that dwell in them leaving aside any consideration about the surface. Most assemblages of plants and animals (biocenoses, facies) are fairly easy to identify but the sole mention of the biocenosis can justify the creation of a ZNIEFF in as much as it is sufficiently determinant and most of all accompanied with a list of significant priority species.

This document which concerns the Mediterranean Sea only is based on the document written by Dauvin *et al.* (1994), but since the homogeneity with the Atlantic coasts is no

longer necessary it has been completely revised and adapted to the specificities of the Mediterranean zone for the French coastlines (ZNIEFFs re-actualisation programme), and then extended to the whole of the Mediterranean Sea to meet the needs of RAC/SPA. This document has been revised and amended with the assistance of the "biotopi marini" group of the "Ministero dell Ambiente" (Italy).

The typology proposed for the Mediterranean Sea, elaborated from the CORINE biotopes nomenclature, is hierarchical, phytosociological and uses the following as bases of references:

- the zonation as defined by Peres and Picard in 1964 (Appendix I),
- the granulometric nature of the sea beds classified as per the model adopted by Dauvin *et al.* 1994 (Appendix II).

The levels of the facies and sub-facies are mainly limited to those most widely distributed since their number increases as a function of the number of works on benthic communities and they most often constitute a strictly local datum. The facies mentioned have indicative value only. Environments affected by human activity (polluted environments and harbours) are not considered in the text.

The terms used in this report may have appeared with rather different meanings in referenced documents. A lexicon (Appendix III) gives the meaning adopted herein.

2. TYPOLOGY: LIST OF MEDITERRANEAN BENTHIC MARINE BIOCENOSES

I. SUPRALITTORAL

I. 1. MUDS

- I. 1. 1. Biocenosis of beaches with slowly-drying wracks under glassworts

I. 2. SANDS

- I. 2. 1 Biocenosis of supralittoral sands

- I. 2. 1. 1. Facies of sands without vegetation, with scattered debris
- I. 2. 1. 2. Facies of depressions with residual humidity
- I. 2. 1. 3. Facies of quickly-drying wracks
- I. 2. 1. 4. Facies of tree trunks which have been washed ashore
- I. 2. 1. 5. Facies of phanerogams which have been washed ashore (upper part)

I. 3. STONES AND PEBBLES

- I. 3. 1. Biocenosis of slowly drying wracks

I. 4. HARD BEDS AND ROCKS

- I. 4. 1. Biocenosis of supralittoral rock

- I. 4. 1. 1. Association with *Entophysalis deusta* and *Verrucaria amphibia*
- I. 4. 1. 2. Pools with variable salinity (mediolittoral enclave)

II. MEDIOLITTORAL

II. 1. MUDS, SANDY MUDS AND SANDS

II. 1. 1. Biocenosis of muddy sands and muds

II. 1. 1. 1. Association with halophytes

II. 1. 1. 2. Facies of saltworks

II. 2. SANDS

II. 2. 1. Biocenosis of mediolittoral sands

II. 2. 1. 1. Facies with *Ophelia bicornis*

II. 3. STONES AND PEBBLES

II. 3. 1. Biocenosis of mediolittoral coarse detritic bottoms

II. 3. 1. 1. Facies of banks of dead leaves of *Posidonia oceanica* and other phanerogams

II. 4. HARD BEDS AND ROCKS

II. 4. 1. Biocenosis of the upper mediolittoral rock

II. 4. 1. 1. Association with *Bangia atropurpurea*

II. 4. 1. 2. Association with *Porphyra leucosticta*

II. 4. 1. 3. Association with *Nemalion helminthoides* and *Rissoella verruculosa*

II. 4. 1. 4. Association with *Lithophyllum papillosum* and *Polysiphonia* spp.

II. 4. 2. Biocenosis of the lower mediolittoral rock

II. 4. 2. 1. Association with *Lithophyllum lichenoides* (= entablature with *L. tortuosum*)

II. 4. 2. 2. Association with *Lithophyllum byssoides*

II. 4. 2. 3. Association with *Tenarea undulosa*

II. 4. 2. 4. Association with *Ceramium ciliatum* and *Corallina elongata*

II. 4. 2. 5. Facies with *Pollicipes cornucopiae*

II. 4. 2. 6. Association with *Enteromorpha compressa*

II. 4. 2. 7. Association with *Fucus virsoides*

II. 4. 2. 8. *Neogoniolithon brassica-florida* concretion

II. 4. 2. 9. Association with *Gelidium* spp.

II. 4.2.10. Pools and lagoons sometimes associated with vermetids (infralittoral enclave)

II. 4. 3. Mediolittoral caves

- II. 4. 3. 1. Association with *Phymatolithon lenormandii* and *Hildenbrandia rubra*

III. INFRALITTORAL

III. 1. SANDY MUDS, SANDS, GRAVELS AND ROCKS IN EURYHALINE AND EURYTHERMAL ENVIRONMENT

III. 1. 1. Euryhaline and eurythermal biocenosis

- III. 1. 1. 1. Association with *Ruppia cirrhosa* and/or *Ruppia maritima*
III. 1. 1. 2. Facies with *Ficopomatus enigmaticus*
III. 1. 1. 3. Association with *Potamogeton pectinatus*
III. 1. 1. 4. Association with *Zostera noltii* in euryhaline and eurythermal environment
III. 1. 1. 5. Association with *Zostera marina* in euryhaline and eurythermal environment
III. 1. 1. 6. Association with *Gracilaria* spp.
III. 1. 1. 7. Association with *Chaetomorpha linum* and *Valonia aegagropila*
III. 1. 1. 8. Association with *Halopithys incurva*
III. 1. 1. 9. Association with *Ulva laetevirens* and *Enteromorpha linza*
III. 1. 1. 10. Association with *Cystoseira barbata*
III. 1. 1. 11. Association with *Lamprothamnium papulosum*
III. 1. 1. 12. Association with *Cladophora echinus* and *Rytiphloea tinctoria*

III. 2. FINE SANDS WITH MORE OR LESS MUD

III. 2. 1. Biocenosis of fine sands in very shallow waters

- III. 2. 1. 1. Facies with *Lentidium mediterraneum*

III. 2. 2. Biocenosis of well sorted fine sands

- III. 2. 2. 1. Association with *Cymodocea nodosa* on well sorted fine sands
III. 2. 2. 2. Association with *Halophila stipulacea*

III. 2. 3. Biocenosis of superficial muddy sands in sheltered waters

- III. 2. 3. 1. Facies with *Callianassa tyrrhena* and *Kellia corbuloides*

- III. 2. 3. 2. Facies with fresh water resurgences with *Cerastoderma glaucum* and *Cyathura carinata*
- III. 2. 3. 3. Facies with *Loripes lacteus*, *Tapes* spp.
- III. 2. 3. 4. Association with *Cymodocea nodosa* on superficial muddy sands in sheltered waters
- III. 2. 3. 5. Association with *Zostera noltii* on superficial muddy sands in sheltered waters
- III. 2. 3. 6. Association with *Caulerpa prolifera* on superficial muddy sands in sheltered waters
- III. 2. 3. 7. Facies of hydrothermal oozes with *Cyclope neritea* and nematodes

III. 3. COARSE SANDS WITH MORE OR LESS MUD

- III. 3. 1. Biocenosis of coarse sands and fine gravels mixed by the waves
 - III. 3. 1. 1. Association with rhodolithes
- III. 3. 2. Biocenosis of coarse sands and fine gravels under the influence of bottom currents (also found in the Circalittoral)
 - III. 3. 2. 1. Maërl facies (= Association with *Lithothamnion corallioides* and *Phymatolithon calcareum*) (can also be found as facies of the biocenosis of coastal detritic).
 - III. 3. 2. 2. Association with rhodolithes

III. 4. STONES AND PEBBLES

- III. 4. 1. Biocenosis of infralittoral pebbles
 - III. 4. 1. 1. Facies with *Gouania wildenowi*

III. 5. POSIDONIA OCEANICA MEADOWS

- III. 5. 1. Posidonia oceanica meadows (= Association with *Posidonia oceanica*)
 - III. 5. 1. 1. Ecomorphosis of striped meadows
 - III. 5. 1. 2. Ecomorphosis of "barrier-reef" meadows
 - III. 5. 1. 3. Facies of dead "mattes" of *Posidonia oceanica* without much epiflora
 - III. 5. 1. 4. Association with *Caulerpa prolifera*

III. 6. HARD BEDS AND ROCKS

III. 6. 1. Biocenosis of infralittoral algae⁴:

III. 6. 1. 1. **Overgrazed facies with encrusting algae and sea urchins**

III. 6. 1. 2. Association with *Cystoseira amentacea* (var. *amentacea*, var. *stricta*, var. *spicata*)

III. 6. 1. 3. Facies with Vermetids

III. 6. 1. 4. Facies with *Mytilus galloprovincialis*

III. 6. 1. 5. Association with *Corallina elongata* and *Herposiphonia secunda*

III. 6. 1. 6. Association with *Corallina officinalis*

III. 6. 1. 7. Association with *Codium vermilara* and *Rhodymenia ardissoni*

III. 6. 1. 8. Association with *Dasycladus vermicularis*

III. 6. 1. 9. Association with *Alsidium helminthochorton*

III. 6. 1. 10. Association with *Cystoseira tamariscifolia* and *Saccorhiza polyschides*

III. 6. 1. 11. Association with *Gelidium spinosum* v. *hystrix*

III. 6. 1. 12. Association with *Lobophora variegata*

III. 6. 1. 13. Association with *Ceramium rubrum*

III. 6. 1. 14. Facies with *Cladocora caespitosa*

III. 6. 1. 15. Association with *Cystoseira brachycarpa*

III. 6. 1. 16. Association with *Cystoseira crinita*

III. 6. 1. 17. Association with *Cystoseira crinitophylla*

III. 6. 1. 18. Association with *Cystoseira sauvageauana*

III. 6. 1. 19. Association with *Cystoseira spinosa*

III. 6. 1. 20. Association with *Sargassum vulgare*

III. 6. 1. 21. Association with *Dictyopteris polypodioides*

III. 6. 1. 22. Association with *Calpomenia sinuosa*

III. 6. 1. 23. Association with *Stypocaulon scoparium* (= *Halopteris scoparia*)

III. 6. 1. 24. Association with *Trichosolen myura* and *Liagora farinosa*

⁴ the facies and associations of the biocenosis of infralittoral algae are presented in accordance with the two dominant factors affecting this biocenosis, namely hydrodynamics and light, in descending order.

- III. 6. 1. 25. Association with *Cystoseira compressa*
- III. 6. 1. 26. Association with *Pterocladia capillacea* and *Ulva laetevirens*
- III. 6. 1. 27. Facies with large Hydrozoa
- III. 6. 1. 28. Association with *Pterothamnion crispum* and *Compsothamnion thuyoides*
- III. 6. 1. 29. Association with *Schottera nicaeensis*
- III. 6. 1. 30. Association with *Rhodymenia ardissoni* and *Rhodophyllis divaricata*
- III. 6. 1. 31. Facies with *Astroides calycularis*
- III. 6. 1. 32. Association with *Flabellia petiolata* and *Peyssonnelia squamaria*
- III. 6. 1. 33. Association with *Halymenia floresia* and *Halarachnion ligulatum*
- III. 6. 1. 34. Association with *Peyssonnelia rubra* and *Peyssonnelia* spp.
- III. 6. 1. 35. Facies and Associations of Coralligenous biocenosis (in enclave)
- II. 6. 1. 36. Facies with *Chondrilla nucula*
- III. 6. 1. 37. Facies with *Microcosmus exasperatus*

IV. CIRCALITTORAL

IV. 1. MUDS

IV. 1. 1. Biocenosis of coastal terrigenous muds

- IV. 1. 1. 1. Facies of soft muds with *Turritella tricarinata communis*
- IV. 1. 1. 2. Facies of sticky muds with *Virgularia mirabilis* and *Pennatula phosphorea*
- IV. 1. 1. 3. Facies of sticky muds with *Alcyonium palmatum* and *Stichopus regalis*

IV. 2. SANDS

IV. 2. 1. Biocenosis of the muddy detritic bottom

- IV. 2. 1. 1. Facies with *Ophiothrix quinquemaculata*

IV. 2. 2. Biocenosis of the coastal detritic bottom

- IV. 2. 2. 1. Association with rhodolithes

- IV. 2. 2. 2. Maërl Facies (*Lithothamnion corallioides* and *Phymatholithon calcareum*)
- IV. 2. 2. 3. Association with *Peyssonnelia rosa-marina*
- IV. 2. 2. 4. Association with *Arthrocladia villosa*
- IV. 2. 2. 5. Association with *Osmundaria volubilis*
- IV. 2. 2. 6. Association with *Kallymenia patens*
- IV. 2. 2. 7. Association with *Laminaria rodriguezii* on detritic
- IV. 2. 2. 8. Facies with *Ophiura texturata*
- IV. 2. 2. 9. Facies with Synascidies
- V. 2. 2. 10. Facies with large Bryozoa

IV. 2. 3. Biocenosis of shelf-edge detritic bottom

- IV. 2. 3. 1. Facies with *Neolampas rostellata*
- IV. 2. 3. 2. Facies with *Leptometra phalangium*

IV. 2. 4. Biocenosis of coarse sands and fine gravels under the influence of bottom currents (biocenosis found in areas under specific hydrodynamic conditions - straits-; also found in the Infralittoral)

IV. 3. HARD BEDS AND ROCKS

IV. 3. 1. Coralligenous biocenosis

- IV. 3. 1. 1. Association with *Cystoseira zosteroides*
- IV. 3. 1. 2. Association with *Cystoseira usneoides*
- IV. 3. 1. 3. Association with *Cystoseira dubia*
- IV. 3. 1. 4. Association with *Cystoseira corniculata*
- IV. 3. 1. 5. Association with *Sargassum* spp. (indigenous)
- IV. 3. 1. 6. Association with *Mesophyllum lichenoides*
- IV. 3. 1. 7. Association with *Lithophyllum frondosum* and *Halimeda tuna*
- IV. 3. 1. 8. Association with *Laminaria ochroleuca*
- IV. 3. 1. 9. Association with *Rodriguezella strafforelli*
- IV. 3. 1. 10. Facies with *Eunicella cavolinii*
- IV. 3. 1. 11. Facies with *Eunicella singularis*
- IV. 3. 1. 12. Facies with *Lophogorgia sarmentosa*
- IV. 3. 1. 13. Facies with *Paramuricea clavata*
- IV. 3. 1. 14. Facies with *Parazoanthus axinellae*
- IV. 3. 1. 15. Coralligenous platforms

IV.3. 2. Semi-dark caves (also in enclave in upper stages)

IV. 3. 2. 1. Facies with *Parazoanthus axinellae*

IV. 3. 2. 2. Facies with *Corallium rubrum*

IV. 3. 2. 3. Facies with *Leptopsammia pruvoti*

IV. 3. 3. Biocenosis of shelf-edge rock

V. BATHYAL

V. 1. MUDS

V. 1. 1. Biocenosis of bathyal muds

V. 1. 1. 1. Facies of sandy muds with *Thenaea muricata*

V. 1. 1. 2. Facies of fluid muds with *Brissopsis lyrifera*

V. 1. 1. 3. Facies of soft muds with *Funiculina quadrangularis* and *Apporhais seressianus*

V. 1. 1. 4. Facies of compact muds with *Isidella elongata*

V. 1. 1. 5. Facies with *Pheronema grayi*

V. 2. SANDS

V. 2. 1. Biocenosis of bathyal detritic sands with *Grypheus vitreus*

V. 3. HARD BEDS AND ROCKS

V. 3. 1. Biocenosis of deep sea corals

V. 3. 2. Caves and ducts in total darkness (in enclave in the upper stages)

VI. ABYSSAL

VI. 1. MUDS

VI. 1. 1. Biocenosis of abyssal muds

RECENT CASES OF HABITATS AFFECTED BY INTRODUCED AND/OR INVASIVE SPECIES

Two majors cases have been observed :

1. The species constitutes an individualized facies or association (eg. *Sargassum mutans*, *Brachydontes pharaonis*, *Styopodium shimperi*,...)
2. The species affects several habitats, possibly on several stages (eg. *Caulerpa taxifolia*, *Caulerpa racemosa*,...)

ZONATION OF BIOCENOSES IN THE MEDITERRANEAN REGION

(Bellan-Santini *et al.* 1994)

Two main systems can be distinguished as a function of the vertical light gradient:

- the phytal system which is the habitat of all types of flora;
- the aphytaal system which is not the habitat of autotrophic flora except for certain algae in conditions still unclear.

Each of the two main systems comprises subdivisions or stages.

The phytal system comprises:

- the Supralittoral stage where organisms that require a high level of humidifying but that are never immersed are present. The upper limit corresponds to the zone splashed by the waves (including the spray of the waves);
- the Mediolittoral stage which corresponds to the zone affected by waves, submitted to sea level variations caused by the wind, atmospheric pressure and tides;
- the Infralittoral stage which is the immersed zone compatible with the life of the marine phanerogams and photophilous algae;
- the Circalittoral stage which stretches up to the survival boundary of autotrophic pluricellular algae (general case).

The aphytaal system comprises:

- the Bathyal stage which stretches up to the boundary of the continental slope;
- the Abyssal stage, the presence of which is acknowledged in the Mediterranean sea (Pérès, 1984; Bellan-Santini, 1985; Laubier & Emig, 1993) and which corresponds to the plain that would start at about 2,000 m. A faunistic renewal is noticed there, the reasons of which are still unclear, and a high endemism rate.

The boundary between the last two stages is still insufficiently defined in the Mediterranean sea.

TYPES OF SEDIMENTS SELECTED

(Dauvin *et al.*, 1993, modified)

- Mud: more than 75% of fine particles < 63µm
- Sandy mud: 25 to 75% fine particles < 63µm
- Fine sand with more or less mud: 5 to 25% of fine particles < 63µm
- Fine sand: less than 5% of fine particles, fraction larger than 2 mm < 15%, median smaller than 250µm
- Dune medium sand: about 0% of fine particles, fraction larger than 2 mm < 15%, median between 315 and 800 µm
- Heterogeneous muddy sand: fine particles between 10 and 30%, sand, coarse sand and gravel between 50 and 80%
- Coarse sand: less than 5% of fine particles, more than 50% of sand + fine particles, median smaller than 2 mm
- Muddy heterogeneous sediment: more than 5% of fine, median larger than 500 µm, high percentage of pebbles or shells
- Gravel: less than 5% of fine particles, less than 50% of pebbles + shells, median larger than 2 mm
- Small stones: less than 5% of fine particles, more than 50% of pebbles + shells.

Granulometry (as per Larsonneur, 1977, modified)

- . Rock chaos;
 - . Blocks: larger than 10 cm;
 - . Pebbles and shells: elements larger than 2 cm ;
 - . Coarse gravel: elements between 1 and 2 cm ;
 - . Medium gravel: elements between 5 and 10 mm ;
 - . Small gravel and particles: elements between 2 and 5 mm ;
 - . Coarse sand: elements between 1 and 2 mm ;
 - . Medium sand: elements between 0.5 and 1 mm ;
 - . Fine sand: elements between 0.2 and 0.5 mm ;
 - . Finer sand: elements between 0.1 and 0.2 mm ;
 - . Finest sand: elements between 0.063 and 0.1 mm ;
 - . Fine particles: mud + clay: fraction smaller than 0.063 mm.
-
- . well sorted sediment ;
 - . poorly sorted sediment, heterogeneous.

LEXICON

- Association :** permanent aspect of a biocenosis with a vegetal physiognomic dominance where the species are linked by an ecological compatibility and a chorological affinity.
- Biocenosis :** grouping of living organisms, linked by relationships of interdependence within a biotope with relatively homogenous major characteristics; each biocenosis comprises mainly the phytocenosis, which includes flora, and the zoocenosis, which includes fauna. The notions of community or association in the phytosociological sense of the word are very close to the notion of biocenosis although they cannot exactly replace it.
- Biotope :** geographical area with variable surface or volume submitted to ecological conditions where the dominant elements are homogenous.
- Characteristics :** a species is considered as characteristic when it is exclusive or preferential for the biotope considered, whether it is represented widely or not, sporadic or not.
- Community :** grouping of living organisms linked by interdependence relationships within a biotope, typically characterized with respect to one or several dominant species.
- Ecomorphosis :** a particular morphology linked to local ecological conditions.
- Enclave :** local existence for microclimatic reasons of a habitat within a surface normally occupied by another habitat or another stage.
- Euryhaline :** which exhibits a large range of variation of the salinity.
- Facies :** aspect exhibited by a biocenosis when the local predominance of certain factors causes the prevalence of either one or a very small number of species, essentially animal ones.
- Habitat :** area distinguished by geographic, abiotic and biotic features (definition of EEC Directive 92/43). the definition of the habitat can be compared herein to that of a biocenosis, facies and association.

Introduced species : species whose remote (not marginal) extension of the range is linked, directly or indirectly, to human activity. Within its new area, populations of individuals are born *in situ*, without human assistance (it is naturalized).

Invasive species : is an introduced species which has become a key species, or which has a significant impact on key species, functional groups or landscape, and/or a species which has a negative economic impact.

Stage : vertical space of the marine benthic domain where the ecological conditions, as a function of its situation with respect to the sea level, are notably constant or fluctuate regularly between the two critical levels which indicate the boundaries of the stage.

Appendix VIII

REVISED ACTION PLAN FOR THE CONSERVATION OF MEDITERRANEAN MARINES TURTLES

as adopted by the Contracting Parties (Malta, 27-30 October 1999)

FOREWORD

Following a recommendation made by the third meeting of the National Focal Points for SPA (Tunis, 25-27 March 1996), the Contracting Parties to the Barcelona Convention approved at their Tenth Ordinary Meeting held in Tunis, 18-21 November 1997, the convening by SPA/RAC in 1998 of a meeting of experts on the implementation of the three action plans for the conservation of species adopted within the Mediterranean Action Plan. For organizational reasons, it was decided to divide the originally-conceived single meeting into two separate ones, one of these dealing with the issues relevant to the implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles.

With the aim of providing technical input to the meeting, SPA/RAC convened in Tunis on 27 and 28 March 1998 a working group of independent experts on the conservation of marine turtles in the Mediterranean. The group considered that the information which had become available since the adoption of the Action Plan suggested the revision of some of its provisions, and elaborated a first draft revised version of the Action Plan. A further draft was then finalized by RAC/SPA after the meeting and circulated to members of the group for their further advice. On the basis of comments received, a new draft version was elaborated.

The draft revised version so elaborated was submitted to the Meeting of Experts on the Implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles, convened in Arta, Greece, from 27 to 29 October 1998. The works of the Meeting led to a new draft amended version of the Action Plan. The meeting also proposed the convening of another meeting of experts aimed at producing a list of priority actions for the implementation of the Action Plan to be submitted to the next Ordinary Meeting of the Contracting Parties.

At its meeting held in Tripoli from 16 to 17 November 1998, the Bureau of the Contracting Parties approved the convening of this new meeting.

The Meeting of Experts on priority actions for the implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles was convened in Tunis from 18 to 20 February 1999, and was effective in producing a draft list of priority actions, proposed to be annexed to the Action Plan.

The draft revised Action Plan and list of priority actions for its implementation so elaborated were submitted for review and approval to the 4th Meeting of the National Focal Points for SPA, held in Tunis from 12 to 14 April 1999 and subsequently to the Meeting of MAP National Focal Points, held in Athens from 6 to 9 September 1999.

The present document includes the draft revised Action Plan for the conservation of Mediterranean marine turtles including the proposed priority actions for its implementation, as it has been agreed by the Meeting of MAP National Focal Points. It is submitted to the 11th Ordinary Meeting of the Contracting Parties for adoption.

INTRODUCTION

1. The Parties to the Barcelona Convention included among their priority targets for the period 1985-1995 the protection of Mediterranean marine turtles (Genoa Declaration, September 1985). To this purpose, they adopted in 1989 the Action Plan for the Conservation of Mediterranean Marine Turtles. In 1996, the Parties confirmed their commitment to the conservation of marine turtles by including the 5 species of marine turtle recorded for the Mediterranean in the List of Endangered and Threatened Species annexed to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 1995). The Protocol calls on the Parties to continue to cooperate in implementing those action plans already adopted.
2. There is evidence of important negative impact on the populations of Mediterranean marine turtles by human activities. The most serious threats to the turtles are :
 - deterioration of the critical habitats for the life cycle of marine turtles, such as nesting, feeding and wintering areas, and migration routes;
 - incidental or intentional capture in fisheries;
 - pollution.

These threats have to be taken into account in any plan for the conservation of marine turtles and appropriate protection measures proposed.

3. Many important aspects of the status, biology and behaviour of marine turtles remain too poorly known to plan a complete management strategy for the conservation of these species in the Mediterranean. Nevertheless, the information which has become available since the adoption of the Action Plan allows a revision of some of its provisions. This Plan will be readjusted if necessary, as further information becomes available.
4. Information from various sources is taken into account in this Action Plan. Coordinated programmes for scientific research (population dynamics, tagging, biology, physiology, etc.), public awareness campaigns, proposals for the management of nesting beaches, etc. can ensure the survival and help the reconstitution of populations of marine turtles.
5. An effective and durable protection of the Mediterranean marine turtles implies management of the Mediterranean as a whole, and should take advantage of the action of all the concerned actors, notably NGOs, and be carried out in cooperation with existing programmes and plans, in particular:
 - at the international level : the Mediterranean Action Plan (MAP); Fisheries Management Plans (FAO/GFCM); Global Strategy for the Conservation of Marine Turtles (IUCN/SSC); International Commission for the Conservation of Atlantic Tunas (ICCAT); International Commission for the Scientific Exploration of the Mediterranean Sea (ICSEM);
 - at the national level : the plans established by the various countries.
6. This Action Plan for the Conservation of Mediterranean Marine Turtles outlines objectives, priorities, and implementation measures in different fields and their coordination. The different components of the Action Plan are mutually reinforcing and must be taken together to have the best chance of success.

OBJECTIVES

7. The objectives of this Action Plan are :
- a. Protection, conservation and, where possible, enhancing of the populations of marine turtles in the Mediterranean. Special priority should be accorded to Chelonia mydas, wherever appropriate.
 - b. Appropriate protection, conservation and management of the marine turtle habitats including nesting, feeding, and wintering areas and migration routes.
 - c. Improvement of the scientific knowledge by research and monitoring.

PRIORITIES

8. The following general priorities are recommended :
- protection and management of known nesting, feeding (benthic and pelagic) and wintering areas and migration routes;
 - restoration of degraded nesting beaches;
 - banning of exploitation and minimization of incidental catches;
 - identification of feeding and wintering areas and migration routes;
 - investigation of new nesting areas;
 - more knowledge on the biology of the species, in particular aspects related to its life cycle.
9. The following priority actions are specified :
- a. For the protection and management of the species and their habitats :
 - development and implementation of legislation;
 - protection and management of nesting areas;
 - management of feeding and wintering areas;
 - minimization of the impact of fisheries on marine turtles.
 - b. For research and monitoring :
Knowledge needs to be improved concerning the following priority topics:
 - identification of marine turtle critical habitats;
 - assessment of fisheries' interaction;
 - population structure and dynamics;
 - development of nesting beach management techniques;
 - recording of dead, sick and injured sea turtles through stranding networks.
 - c. For public awareness, information and education :
The general public and local stakeholders have to be addressed and, in particular, depending on specific conditions - target groups such as:
 - the local population and visitors to nesting areas;
 - fishermen and other stakeholders;
 - tourists and tourism-related organizations;
 - schoolchildren and teachers;
 - decision makers at local and regional levels.
 - d. For coordination:
it is necessary to promote and enhance cooperation and coordination between the Contracting Parties , as well as the organisations and experts in

the region.

In order to satisfy the set of priorities, emphasis should *inter alia* be given to :

- information media and, in particular, electronic media; for this purpose, the appropriate networks are to be used, wherever possible;
- production of Mediterranean information material, notably publications and audio-visual material ;
- national information campaigns.

IMPLEMENTATION MEASURES

10. An adequate implementation of the measures recommended in this action plan will only be possible in the presence of appropriate support by the Parties and competent international organizations, particularly as regards the provision of adequate financial support, through national and regional financing programmes and through support for applications to donors for relevant projects.

A. PROTECTION AND MANAGEMENT

With regard to management, the following measures are recommended :

A.1 Legislation

11. The Contracting Parties that have not yet extended legal protection to marine turtles should do so as soon as possible, especially having regard to the relevant international conventions.
12. Each Contracting Party should be encouraged to develop and implement the necessary legislation for the establishment, protection, conservation and management of protected areas for marine turtles.

A.2 Protection and Management of Critical Habitats

13. Integrated management plans should be drafted for terrestrial and marine areas which encompass marine turtle critical habitats.
14. Measures and regulations aimed at protecting critical habitats, on land and at sea, should be developed and implemented. In the case of nesting beaches, such measures should be in relation to public access, use of vehicles, use of artificial lights, noise, nautical activities, minimization of predation and inundation, etc.
15. Information campaigns directed at local authorities, residents, teachers, visitors, fishermen, and other stakeholders, are urgently needed in order to enlist their participation in the efforts for the conservation of marine turtles.

A.3 Reducing Mortality at Sea and Eliminating Local Consumption and Use

16. A reduction of accidental catch and mortality can be achieved by:
- applying appropriate fishing regulations concerning depth, season, gear, etc. especially in areas with a high concentration of turtles;
 - the modification of fishing gear and methods. For instance, the use of Turtle Excluder Device (TED) and modified longlines could be tried and, as

- appropriate, introduced in fishing practices;
 - regulating speedboats at areas frequented by turtles;
 - education/training of fishermen to correctly haul, handle, release and record incidentally caught turtles.
17. Consumption, exploitation and deliberate killing of marine turtles should be eliminated by:
- designing and enforcing appropriate legislation;
 - carrying out campaigns among fishermen in order to urge them to release marine turtles caught incidentally and to participate in the information networks on turtles (report sightings of turtles, of tags, participation in tagging programmes, etc.);
 - carrying out campaigns for fishermen and local populations to facilitate the implementation of legislation to ban the consumption and trade/use of all products derived from marine turtles as well as to reduce mutilations and killings because of ignorance and/or prejudice.
18. Establishment of first-aid and rescue centres for the rehabilitation of sick and injured (accidentally or intentionally) marine turtles.
- A.4 Establishment of a Mediterranean Network of Marine and Coastal Protected Areas for Marine Turtles
19. All the Contracting Parties that have critical habitats for marine turtles should make immediate efforts for the adequate protection, conservation and management of the areas encompassing those habitats.
20. An inventory of marine turtle critical habitats, including migrations routes, in the Mediterranean should be prepared urgently, and should be regularly reviewed in the light of increased knowledge.
21. A network of marine and coastal protected areas throughout the Mediterranean should be created covering known areas for reproduction, feeding, migration and wintering of marine turtles.
- A.5 Information, Education and Training
22. A public-awareness programme, including special documentary information material, should be developed for fishermen, local populations, tourists and tourism-related organizations to help reduce the mortality rates of marine turtles, to induce respect for nesting, feeding and wintering areas, and to promote the reporting of any useful information concerning sea turtles.
23. A widespread campaign for the protection of Mediterranean marine turtles should be carried out in order to sensitize the public and encourage it to support conservation measures.
24. Training programmes should be elaborated for the exchange of expertise among the Contracting Parties, and particularly for those Parties that have no experts with specialized knowledge of marine turtles, or for managers of specially protected areas, including critical habitats for turtles.

B. SCIENTIFIC RESEARCH AND MONITORING

B.1 Scientific Research

25. The development of research and exchange of information should cover all the priority fields for the conservation of marine turtle population by using various methods such as surveys, tagging, data logging, satellite telemetry, Geographic Information Systems (GIS), genetics, on-board observers, and modelling.
26. For some Contracting Parties there is little or no information on critical habitats and size of breeding populations of marine turtles. These Parties should be encouraged and assisted to undertake such research programmes.

B.2 Monitoring

27. All Contracting Parties should encourage monitoring programmes aimed at gathering information on population status and trends. For this purpose, important areas should be selected, included in the Mediterranean network, and a standardized methodology should be followed in order to allow statistical comparisons to be made.

C. COORDINATION STRUCTURE

28. It is necessary to develop cooperation among the Contracting Parties for the implementation of the Action Plan and to improve the coordination of activities within the region. It is considered that the Mediterranean Action Plan/Regional Activity Centre for Specially Protected Areas is the most appropriate existing mechanism for this coordination, in cooperation with other bodies concerned.
29. The major function of the coordinating mechanism with regard to marine turtles would be to :
- collect and evaluate the data at Mediterranean level;
 - prepare inventories of existing and potential networks of protected areas for marine turtles;
 - contribute to the creation of a Mediterranean network of protected areas for marine turtles;
 - prepare a timetable of activities and financing proposals for the Contracting Parties' meetings;
 - contribute to the dissemination and exchange of information;
 - assist and/or organize expert meetings on specific topics regarding marine turtles, as well as training courses.
30. Complementary work carried out by other international bodies aiming at the same objectives should be encouraged, promoting coordination and preventing possible overlapping.
31. The status of Mediterranean marine turtles and the content of this Action Plan for marine turtles should be reviewed whenever necessary.

PRIORITY ACTIONS FOR THE IMPLEMENTATION OF THE ACTION PLAN FOR THE CONSERVATION OF MEDITERRANEAN MARINE TURTLES

RECOMMENDED ACTIONS AT THE REGIONAL AND SUBREGIONAL LEVELS

A. PROTECTION AND MANAGEMENT

A.1 Legislation

- *Elaborate guidelines to design legislation and regulations relative to the conservation and management of marine turtle populations and their habitats, taking into account the need to enforce existing international legislation*

A.2 Protection and Management of Critical Habitats

No action recommended at the regional and subregional levels at this point

A.3 Reducing Mortality at Sea and Eliminating Local Consumption and Use

- *Establish guidelines to improve the involvement of marine turtle rescue centres as an additional tool to reduce mortality. Establish a network of centres that comply with such guidelines.*

A.4 Establishment of a Mediterranean Network of Marine and Coastal Protected Areas for Marine Turtles

- *Prepare an inventory of nesting areas, of those areas known for mating, feeding and wintering, and of migration routes all around the Mediterranean, which should subsequently be regularly updated. Compile and synthesize information on these areas in an Atlas.*
- *Establish a network of managed and monitored nesting sites, with the aim of facilitating the exchange of information and experience.*

A.5 Information, Education and Training

- *Prepare training and information/awareness modules and tools addressed to fishermen, aimed at reducing the mortality of marine turtles incidentally caught in fishing gear.*
- *Support the continuation of training courses for Mediterranean scientists and SPA managers in marine turtle conservation techniques.*

B. SCIENTIFIC RESEARCH AND MONITORING

B.1 Scientific Research

- *Encourage the elaboration and execution of cooperative research projects of regional importance aimed at*
 - *assessing the interaction between turtles and fisheries;*
 - *identifying marine turtle critical habitats, including migration routes.*
- *Promote the development of management techniques for nesting beaches.*
- *Encourage standardization of methodologies to estimate demographic parameters for population dynamics analysis, such as population modelling.*

B.2 Monitoring

- *Encourage:*
 - *long-term beach monitoring programmes;*
 - *saturation tagging and genetic analysis, to be used where appropriate;*
 - *cooperation among beach monitoring programmes in order to have compatibility in data collection and analysis, and thus detect population trends and their response to management policies.*

C. COORDINATION

- *Convene the first Mediterranean Conference on marine turtles.*
- *Open a dialogue through national focal points for SPA with fishing administrations and stakeholders in the marine environment, to discuss fishing techniques and their impact and the possibilities of improving such techniques.*
- *Create:*
 - *a Mediterranean newsletter on marine turtles that could be eventually developed and incorporated in a specific Web site with the help of national experts.*
 - *a Mediterranean newsgroup.*
- *Establish a directory of sea turtle specialists working in the Mediterranean.*

RECOMMENDED ACTIONS AT THE NATIONAL LEVEL

Acknowledging the progress achieved over the past years and the proliferation of projects, activities and actions in many countries it is considered a priority action to continue and enhance ongoing projects and activities related to marine turtle conservation, research and monitoring.

The following recommendations apply to all, or most countries :

- *Develop education and training programmes for fishermen on techniques for correctly*

hauling, handling, releasing and recording incidentally caught turtles, with possible support from and cooperation with GFCM and ICCAT. Involvement of existing rescue centres and aquariums should be sought.

- *Develop systematic public awareness projects, structured in such a way that the objectives and target groups are clearly defined. Some of the main target groups involve local residents and tourists at nesting sites, local and national authorities, schoolchildren, fishermen, yachtsmen and other sea users. The establishment of such programmes could be triggered and assisted by appropriate regional initiatives.*

Specific additional proposals for individual countries follow.

Albania

- *Grant full legal protection to marine turtles.*
- *Undertake a prospection campaign to assess the occurrence of marine turtle nesting on Albanian coasts.*

Algeria

- *Speed up procedures for the enacting of legal texts granting protection to marine turtles.*
- *Establish a monitoring programme on by-catches of marine turtles by Algerian fisheries.*

Bosnia and Herzegovina

No additional actions recommended.

Croatia

- *Develop research and monitoring on Caretta caretta in Croatian waters, focused on the following main topics:*
 - *overwintering and feeding areas and ecology;*
 - *migration patterns, population structure and dynamics ;*
 - *interaction with fisheries.*
- *Undertake a prospection campaign to assess the occurrence of marine turtle nesting on Mljet island sandy beaches.*
- *Strengthen the legal protection for the sandy habitats of Sapunara and Blace Bays by moving them from the present "protected landscape" category to the "protected botanical and zoological reserve" category.*
- *Establish bottom trawling restrictions in northern Croatian waters throughout the winter in areas where the sea is less than 50 m deep.*

- *Establish a network of rescue centres along the Croatian coasts.*

Cyprus

- *Ensure the long-term conservation of important nesting beaches by including their adequate protection and management in all coastal management plans, notably in relation to tourist development, and also by including them in a long-term monitoring and protection plan.*
- *Finalize the decision on the Conservation Management Plan for the Akamas peninsula, and implement it.*
- *Pursue the project on the hatching and rearing of juvenile stages (head-starting) of green turtles, and assess its results in terms of its impact on the wild population.*

Egypt

- *Reduce substantially, and finally eliminate, intentional mortality by:*
 - *enforcing existing legislation protecting marine turtles and promulgating new protection texts where necessary;*
 - *establishing well-targeted environmental education and public awareness programmes for key Mediterranean coastal communities where sea turtle consumption still takes place.*
- *enforce regulations for the reduction of by-catch and fishery- related mortality caused by bottom trawl and by small coastal fisheries.*
- *Identify and implement adequate protection and management measures for the most important nesting beaches along the Mediterranean coast.*

France

- *Set up a programme to estimate incidental capture by the various fisheries within the framework of a specific sampling plan.*
- *Develop the network of observers along the Mediterranean coast of France.*
- *Determine the origin of turtles caught in French waters.*

Greece

- *See to continue monitoring the nesting population and take effective management measures at all "major" nesting areas.*
- *Finalize the process of setting up the Zakynthos National Marine Park and its managing body, and further strengthen the appropriate conservation and management of the site.*
- *Grant adequate protection and management to, and where appropriate restore, other important nesting areas, in particular: the Bay of Kyparissia, Rethymno, Lakonikos Bay, the Bay of Chania, Bay of Messara.*
- *Assess sea turtle mortality caused by fisheries' interactions and powered pleasure*

- *boats, and elaborate relevant conservation measures.*
- *Develop a nation-wide stranding network and improve existing facilities for rehabilitation of injured and sick turtles.*
- *Initiate research programmes aimed at:*
 - *identifying feeding and/or wintering areas along Greek coasts, and*
 - *assessing discreteness of nesting populations (through genetic studies).*

Israel

- *Ensure long-term protection of major and potential nesting beaches.*
- *Promote the process of legal declaration of protected marine and coastal areas.*
- *Eliminate both destructive human activities on nesting beaches and the disorientation of hatchlings caused by artificial light.*

Italy

- *Assess the impact of Italian fisheries on marine turtle populations, particularly in the Ionian Sea and the Sicily Channel.*
- *Envisage management and protection measures in the most sensitive areas.*
- *Ensure the protection of the few remaining nesting beaches, having them integrated in any possible development plan, and provide a commitment to long-term monitoring.*
- *Anticipate monitoring of other potential nesting sites.*
- *Pursue or support research to identify feeding and wintering areas and migration routes.*
- *Continue to develop the network of observers along the Italian coast.*

Lebanon

- *Enact legislation banning the consumption and sale of products derived from sea turtles.*
- *Undertake a survey aimed at assessing sea turtle nesting and potential nesting sites, feeding and wintering areas on the coast of Lebanon.- Establish a programme for the long-term monitoring of sea turtle nesting in the Palm Island reserve.*
- *Prepare a National Action Plan for the conservation of marine turtles in Lebanon.*

Libya

- *Further study the dimension of the nesting populations and nesting distribution along the coasts.*
- *Identify the most valuable nesting beaches, grant them adequate long-term protection*

and management and include them in a long-term monitoring programme. The following beaches are already identified as deserving special attention: Eastern beach of Ain-Algazala, Aboulfraes, Kouf National Park, Al-Ghbeba.

- *Assess the impact of coastal fisheries on marine turtles.*

Malta

- *Assess the impact of fisheries' by-catches.*

Monaco

- *Activate the procedure of legal protection for marine turtles.*

Morocco

- *Activate the procedure of legal protection for marine turtles.*
- *Strengthen the monitoring programme on by-catches of marine turtles by Moroccan fisheries.*

Slovenia

No additional action recommended.

Spain

- *Ensure periodical assessment of the fisheries' impact in the Balearic G.F.C.M. area (Spanish Mediterranean Area).*
- *Develop research programmes aimed at*
 - *identifying marine turtle migratory patterns in the Gibraltar Strait region;*
 - *evaluating the percentage of turtles of Atlantic and/or Mediterranean origin in the Alboran Sea and connected waters.*
- *Establish a network of stranding observers and rescue centres along the Mediterranean coasts of Spain, with a view to harmonizing rescue methodologies and establishing a common database on stranded and rescued turtles in the Mediterranean.*

Syria

- *Undertake a survey aimed at assessing sea turtle nesting on the coast of Syria.*

Tunisia

- *Elaborate specific legislation for marine turtles.*
- *Develop research and monitoring programmes aimed at:*
 - *assessing by-catches and related mortality, particularly in the Gulf of Gabes;*
 - *assessing the value of the Gulf of Gabes as a feeding/overwintering area;*

- *identifying possible nesting sites as yet unknown.*
- *Grant the nesting sites on the Kuriat islands adequate protection and management, and continue the scientific monitoring programme there on a long term basis.*
- *Establish a marine turtle biology centre in Tunisia.*

Turkey

- *Ensure that an Environmental Impact Assessment (EIA) is made an integral part of the tourist and development projects connected with the important marine turtle nesting beaches.*
- *Ensure the most important nesting beaches adequate legal protected status. Monitor the enforcement of the relevant regulations at the protected sites. Special priority should be given to the nesting sites of Chelonia mydas.*
- *Regulate activities related to tourist use that affects the important nesting beaches' value as nesting grounds, in particular: the use of speed boats and jet-skis; night visiting of beaches; lighting of beaches; riding and driving on beaches.*
- *Take all appropriate measures to prevent illegal sand extraction from the important nesting beaches.*
- *Create and enforce specific regulations for the reduction of by-catch and fishery-related mortality in bottom trawl and small coastal fisheries in the benthic feeding grounds of the Bay of Iskenderun.*
- *Reduce nest predation by applying appropriate techniques. In particular, the use of cages is recommended.*
- *Establish public awareness campaigns targeted at decision-makers.*

Appendix IX

Recommendations

**on topics to be addressed as a matter of priority in the further implementation of the
ACTION PLAN FOR THE MANAGEMENT OF THE MEDITERRANEAN MONK SEAL**

as adopted by the Contracting Parties (Malta, 27-30 October 1999)

Items 7, 8, 9, 11 and 12: Reduction in adult mortality

An integrated approach combining awareness campaigns for fishermen and enforcement of appropriate legislation and regulations, on the model of what has been done in the National Marine Park of Alonissos-Northern Sporades (Greece) should be applied in areas where monk seals interact negatively with fishing activity.

The economic impact of seal damage to coastal fisheries and fish farms, and the ways to prevent or mitigate such impact, should be assessed.

Item 10: Development of systems to avoid entanglement in nets

Pilot research studies to assess the effectiveness and consequences of systems to avoid entanglement of seals in nets which are to be carried out in appropriate locations and/or seasons are considered useful.

Items 13-16: Establishment of a network of marine reserves

Already identified sites important for the conservation of the species should be urgently protected and appropriately managed.

Protected sites should be extended to include all valuable habitats for monk seals, aiming at the creation of a network of protected areas.

Items: 17-19: Monitoring, collection of data and exchange of information

E-mail regional networks should be established to facilitate ready exchange of information. RAC/SPA should encourage further contacts between conservation projects for monk seals.

Whenever appropriate, the range of seal movements should be studied as a matter of priority, using suitable techniques (e.g. telemetry). Relevant protocols should be elaborated according to the available experience.

RAC/SPA is invited to hold workshops and to promote expertise to synthesize available information on the biology, ecology and behaviour of Mediterranean monk seals that is critical for conservation. The output of these workshops should be published and be made the subject of a symposium.

Item 20: Rehabilitation of seals

A workshop to develop agreed technical measures for the rehabilitation of Mediterranean monk seals should be urgently undertaken and appropriate guidelines put in place.

Items 21-22: Other conservation measures

An Emergency Plan should be developed to coordinate all action if a mass mortality or other emergency event occurs. This emergency plan, which applies to the distribution area of the species, should, *inter alia*, include an exchange of information between countries and the secretariat, as well as the concerned international organization.

Items 23-26: Information programmes

Awareness programmes for the public should be developed and should be carefully designed in order to avoid dissemination of information that might adversely affect the conservation of the monk seals (e.g. the location of seal caves).

Special attention should be paid to increasing awareness of decision makers.

Item 27: Training programmes

Emphasis should be placed on the organization of training courses, specific workshops and training grants to address practical aspects which are relevant to the research, conservation and management of monk seals.

Appendix X

Recommendations for further implementation of the ACTION PLAN FOR THE CONSERVATION OF CETACEANS IN THE MEDITERRANEAN SEA

as adopted by the Contracting Parties (Malta, 27-30 October 1999)

1. To elaborate guidelines for improving national legislation and where necessary, making them conform to the provisions of the relevant international Agreements in the field of cetacean conservation.
2. To invite the Contracting Parties to the Barcelona Convention to ratify, if they have not done so, the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area.
3. Noting that the government of France, Italy and Monaco have relaunched the procedure for signing an agreement for the purpose of establishing a sanctuary in the Sardinia-Corsica-Liguria-Provence Basin, the Meeting recommends that the Contracting Parties undertake all necessary action to support the conclusion of the said international agreement as soon as possible.
4. The experts recommend that countries and organizations take into account and develop the work related to the effects of chemical pollution on health and reproductive cycles of marine mammals and of the species on which they feed.
5. To define and implement co-ordinated survey programmes aiming at identifying the status and distribution of cetaceans in the Mediterranean. This work should include organization of a workshop on the most appropriate methodologies to be applied in the common interest, taking into account the need for information about the eastern and southern part of the basin.
6. To promote the establishment of national plans and networks for the study of cetacean strandings, using standardized methods for the collection of data. It is necessary to collect data validated by the Parties on cetacean strandings in the Mediterranean in a common file including basic data on the reported strandings. The keeping of this common file shall be entrusted to a body belonging to one of Mediterranean intergovernmental organizations. The file must be continuously updated.
7. Co-ordination at the Mediterranean level in the field of study of cetacean strandings should be established on the basis of existing national networks and, where they are absent, on the institutions and researchers carrying out monitoring of cetacean strandings. Bilateral Cooperation should be encouraged in order to facilitate the exchange of experience between countries having experience in the study of cetacean strandings and those countries willing to develop this activity.
8. To entrust the Secretariat with the elaboration of a feasibility study (including a financial evaluation) on a Mediterranean network for the study of cetacean strandings. This

feasibility study will be submitted to the Contracting Parties to the Barcelona Convention.

9. To organize a Mediterranean workshop on methods and techniques related to the monitoring and study of cetacean strandings.
10. Interactions between fisheries and cetaceans should be investigated by designing and implementing appropriate research and awareness initiatives. The experts invite the countries, not members of the European Union, to consider the banning of driftnet use.
11. To elaborate a code of conduct for whale-watching in the Mediterranean, to be included in the conditions to be respected by every boat that practises whale-watching for either commercial or non-commercial ends; and to investigate the possibilities of the integration of the code of conduct in the national legislation.
12. The use of powerful noise sources - such as low-frequency active sonar - should be avoided in those areas known to be highly frequented by cetaceans.
13. Elaborate a Directory of organizations (NGOs, laboratories, etc.) active in the field of study and conservation of cetaceans in the Mediterranean.
14. To develop, in co-ordination with the relevant intergovernmental organizations and interested NGOs, informative and educational tools on Mediterranean cetaceans, to be used in all the Mediterranean countries to support awareness and public participation.

Appendix XI

ACTION PLAN FOR THE CONSERVATION OF MARINE VEGETATION IN THE MEDITERRANEAN SEA

as adopted by the Contracting Parties (Malta, 27-30 October 1999)

FOREWORD

At their 10th Ordinary Meeting (Tunis, 18-21 November 1997), the Contracting Parties to the Barcelona Convention, asked the RAC/SPA to elaborate an action plan for the conservation of marine vegetation in the Mediterranean Sea. The draft action plan suggested below has been issued by the Meeting of experts for the elaboration of the Action Plan for the conservation of marine vegetation in the Mediterranean Sea, convened by RAC/SPA in Tunis on 9 and 10 April 1999. It was then reviewed and approved by the Fourth Meeting of the NFP for SPA (Tunis, 12-14 April 1999) and by the MAP National Focal Points at their meeting held in Athens (6-9 September 1999), with a view of submitting it to the Contracting Parties for adoption.

The proposed Action Plan follows a series of three action plans adopted by the Mediterranean countries within the MAP framework, devoted to the conservation of species or groups of species. These action plans are (i) Action plan for the management of the Mediterranean monk seal, (ii) Action plan for the conservation of Mediterranean marine turtles and (iii) Action plan for the conservation of cetaceans in the Mediterranean Sea.

It also follows various initiatives at regional level which highlighted the conservation of species generally and marine vegetation in particular. Among these initiatives we could mention the drafting of the "Livre Rouge, Gerard Vuignier, des vegetaux, peuplements et paysages menaces de Mediterranee", which came out in 1990. Specialists from several countries of the region collaborated on this, to provide a first synthesis of knowledge on the status of the main threatened marine vegetation species in the Mediterranean.

In 1995, a feasibility study for setting up a marine vegetation monitoring network in several Mediterranean countries was carried out. This study, co-ordinated by the Regional Activities Centre for Specially Protected Areas (RAC/SPA) was a response to the recommendations made at the 8th Ordinary Meeting of the Contracting Parties to the Barcelona Convention. The feasibility study, because of the detailed questionnaire which was sent to all the focal points of the Mediterranean, permitted (i) an improved assessment of the state of knowledge, (ii) the key species which could be monitored, and (iii) the necessary scientific and technical needs to be identified.

In 1996, the annexes to the Protocol on Specially Protected Areas and Biological Diversity in the Mediterranean were adopted, among them a list of endangered or threatened species, where 14 endangered or threatened marine vegetation species appear. For the species appearing in this list, the Protocol provides for a set of measures such as scientific follow-up, making of an inventory and protection notably through the control of human activities which are incompatible with the conservation of these species. For these species, the Protocol recommends elaborating and implementing action plans.

At the event organised by MEDMARAVIS in January 1995, which led to the Alghero Convention on Coastal and Marine Biodiversity in the Mediterranean, the participants recommended a certain number of criteria to be taken into consideration when assessing the status of species requiring particular attention. Several marine vegetation species were

particularly identified as being rare, in decline, or having ecological importance in the Mediterranean.

The draft Action Plan proposed below takes into account these initiatives, the data that RAC/SPA has to hand, the work it has undertaken as well as the recommendations and viewpoints of several Mediterranean experts who have collaborated with the RAC/SPA over the last few years.

INTRODUCTION

1. The Contracting Parties to the Barcelona Convention, within the framework of the Mediterranean Action Plan, give priority to the conservation of the marine environment and to the components of its biological diversity. This was confirmed by the adoption of the new 1995 Barcelona Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA Protocol) and of its annexes, among them a list of endangered or threatened species.
2. Elaborating and implementing action plans to conserve one species or group of species is an effective way of guiding, coordinating and strengthening the efforts the Mediterranean countries are making to safeguard the natural heritage of the region.
3. The Mediterranean possesses over one thousand macroscopic marine vegetation species, with a high percentage of rare and/or endemic species. The role of these species in maintaining the balance of marine ecosystems is primordial. The direct and indirect consequences of their decline are many, at the ecological and even the economic level (primary production, spawning grounds, nurseries, stability of coasts...).
4. Although available knowledge on marine vegetation species in the Mediterranean is at present insufficient, and often fragmentary, it is obvious that these species are under increasing pressure, often anthropogenic in origin, in the Mediterranean, which engenders a degradation and decline of these species, observed in many Mediterranean regions.
5. The degradation observed and the evident decline of marine vegetation have reached such levels that it would be serious to postpone any longer taking measures on the scale of all the Mediterranean countries. Information available today allows the drafting of an Action Plan for the Conservation of Marine vegetation in the Mediterranean Sea. The Action Plan will be adapted, where necessary, as further data become available.
6. The threats hanging over the marine plants in the Mediterranean are numerous and vary according to the affected species, and from one region to the next. Most of these threats are of anthropogenic origin. The main known threats are :
 - Infrastructure development on the littoral
 - pollution
 - turbidity
 - anchorage
 - bottom trawling
 - uncontrolled development of aquaculture
 - use of explosives
 - laying of sea cables
 - recovery
 - modification of sedimentary flow
 - Accumulation of sedimentation originating from watersheds
 - sand extracting from the sea bed and enlargement of beaches
 - competition with non-indigenous species
 - trampling

Other threats are foreseeable, such as the exploitation of certain marine vegetation species for industrial purposes.

A. OBJECTIVES

7. The main objectives aimed at by the present Action Plan are :

- 7.1. Ensuring the conservation of macroscopic marine vegetation species and vegetal assemblages in the Mediterranean by implementing management and legal protection measures. These measures should also permit improved knowledge of these species;
- 7.2. Avoiding loss and degradation of the seagrass meadows, and of other vegetal assemblages of importance for the marine environment, as marine habitats that are essential to the survival of many Mediterranean species, and keeping them in favourable conservation status;
- 7.3. Ensuring the conservation of marine vegetal assemblages that could be considered natural monuments, such as barrier reefs of *Posidonia* and organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain *Cystoseira* belts.

B. PRIORITIES

8. In implementing the Action Plan, priority will be accorded to :

- 8.1. At species level: the present Action Plan's provisions are to be implemented for all the macrophyta species inhabiting the Mediterranean. Particular attention must be paid, however, to the species appearing in Annex 2 to the SPA Protocol. These species are :

Magnoliophyta: *Posidonia oceanica*, *Zostera marina*, *Zostera noltii* .

Chlorophyta: *Caulerpa ollivieri*.

Phaeophyta: *Cystoseira amentacea*, *Cystoseira mediterranea*, *Cystoseira sedoides*, *Cystoseira spinosa*, *Cystoseira zosteroides*, *Laminaria rodriguezii*.

Rhodophyta: *Goniolithon byssoides*, *Lithophyllum lichenoides*, *Ptilophora mediterranea*, *Schimmelmanna schousboei*.

Priority should also be given to other species of importance to the natural heritage of the Mediterranean, to be designated at a future time.

Given the particular importance of *Posidonia* meadows and other vegetal assemblages of importance for the marine environment in the Mediterranean, their conservation is to be considered one of the main priorities of the present Action Plan.

- 8.2. At national level:

- inventory of species, determination and mapping of their distribution
- identification of threats
- establishment of protected areas
- detailed mapping of seagrass meadows

- protection of seagrass meadows and of other vegetal assemblages of importance for the marine environment
- reinforced protection of the *Posidonia* barrier reefs and organogenic surface formations and certain *Cystoseira* belts
- elaboration and implementation of appropriate legislation
- establishment of marine vegetation monitoring networks
- controlling the impact made by watershed infrastructures on the marine environment

8.3. At regional level:

- strengthening cooperation and exchange of experience
- make sure information is well circulated, particularly in the case where transboundary phenomena appear (pollution, invasion by non-indigenous species, etc.)
- promote and support the setting up of national marine vegetation monitoring networks
- promote the creation of protected areas to protect *Posidonia* meadows and other vegetal assemblages of importance for the marine environment

C. ACTION REQUIRED TO ATTAIN THE OBJECTIVES OF THE ACTION PLAN

C.1 Legislation

- 9.** The species and vegetal assemblages of importance for the marine environment should be granted legal protection. In particular, the vegetal species enumerated in annex 2 to the SPA Protocol should be accorded legal protection in the countries where they exist in order to control and, if necessary, prohibit any type of destruction or disturbance, including the taking, harvesting, cutting, uprooting, possessing, trading in, transporting and exhibiting for commercial purposes, of these species. It is also important to provide for penal sanctions for damage caused to seagrass meadows and other vegetal assemblages of importance for the marine environment. It is necessary to harmonize the Mediterranean legislation and to elaborate guidelines to assist countries in their efforts in this field.
- 10.** The Contracting Parties which have not yet promulgated legislation for the protection of seagrass meadows and other vegetal assemblages of importance for the marine environment should do so as soon as possible.
- 11.** The regulation relating to impact studies will have to be strengthened to make obligatory the assessment of impact on seagrass meadows of all human activity to be introduced in areas possessing seagrass meadows. The regulation will have to pay special attention to the impact on seagrass meadows and other vegetal assemblages of importance for the marine environment in the case of harbour facilities (including marinas), laying down pipes for sewage discharging at sea, dredging work or deposits of material from dredging and aquaculture projects. Guidelines for the assessment of environmental impact on seagrass meadows will have to be elaborated by RAC/SPA in collaboration with Mediterranean experts and concerned organizations.

C.2 Creating marine protected areas for the protection of seagrass meadows and other vegetal assemblages of importance for the marine environment

12. It is necessary to establish marine protected areas to protect the most representative seagrass meadows and other vegetal assemblages of importance for the marine environment by applying the protection and management measures recommended by articles 6 and 7 of the SPA Protocol.
13. The marine vegetal assemblages that could be considered natural monuments, such as barrier reefs of *Posidonia*, organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain *Cystoseira* belts, will have to be identified as soon as possible and covered by a network of protected areas.
14. Those Mediterranean marine protected areas which contain seagrass meadows, *Posidonia* barrier reefs, organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain *Cystoseira* belts or other marine vegetal assemblages and for which management and monitoring plans have not yet been developed and implemented, must be provided with such plans as soon as possible.

C.3 Publicity, information, public awareness and education

15. Maps showing the distribution of the main meadows in each country will have to be elaborated and circulated to the actors on the littoral (municipalities, industry, tourism, fishermen, etc.). Physical planning and management plans will have to take account of these maps.
16. Public awareness and education programmes directed at stakeholders, the local population and the broad public will have to be implemented to help reduce the impact on marine vegetation, especially as regards organogenic surface formations. NGOs should be encouraged to participate in such programmes.

C.4 Scientific Research

17. As regards scientific research on marine vegetation in the Mediterranean, priority must be given to:
 - enhanced research at the assemblage, species and genetic level;
 - the compilation of check-lists of vegetal taxa, assemblages and seascape as well as the determination and mapping of their distribution;
 - the influence of environmental factors (temperature, nutrients in sea water and in the sediment, salinity, sedimentation, turbidity, etc.), environmental changes, the effects of pollution and biotic interactions;
 - the study of incidental introduction and invasion of non-indigenous species and their impacts;
 - the development of techniques of monitoring, mapping, environmental impact assessments and other tools for planning and management.
18. It is advisable to organize, within one year starting from the date when the present Action Plan is adopted, a Mediterranean symposium on marine vegetation in order to take stock of available scientific data. The symposium should be regularly held every four years.

C.5 Collection and circulation of data

19. Since scientific data on the biology, ecology and conservation of marine vegetation in the Mediterranean are rare and frequently fragmentary, it is necessary to gather the

information that is available in this field and set up a Mediterranean databank held by the RAC/SPA and regularly updated in collaboration with the experts and organizations concerned. This databank will be used to produce technical syntheses and other technical documentation. It must be made available for consultation on the Internet.

- 20.** To facilitate exchange, a directory of specialists, laboratories and organizations concerned with marine vegetation in the Mediterranean shall be established and regularly updated.

C.6 Training

- 21.** It would be advisable to promote the training of specialists in the study and conservation of marine vegetation, especially in the countries of the south and east Mediterranean. To this end, it is important to identify already existing initiatives in this field and to give priority to taxonomy, conservation biology and techniques for monitoring marine vegetation, as well as the subjects of research set out in section C.4 above.

C.7 National plans

- 22.** To ensure more efficiency in the measures envisaged in the implementation of this Action Plan, Mediterranean countries are invited to establish national plans for the conservation of marine vegetation. Each national plan should take into account the concerned country's, or even areas', specific features. It must suggest appropriate legislative measures, particularly for the environmental impact assessment of coastal infrastructure (building works, pipelines out to sea, and deposits of material from dredging) and to control activities which could affect marine vegetation (such as fishing and anchorage). The national plan shall be based on the available scientific data and will include programmes for (i) collection and regular updating of data, (ii) training and refresher courses for specialists, (iii) awareness-raising and education for the general public, actors and decision-makers and (iv) the conservation of seagrass meadows and other vegetal assemblages of importance for the Mediterranean marine environment. The national plans must be brought to the attention of all concerned actors and, when possible, coordinated with the relevant national plans (e.g. emergency plan to deal with pollution).

D. REGIONAL COORDINATION STRUCTURE

- 23.** Regional coordination of the implementing of the present Action Plan will be guaranteed by the Mediterranean Action Plan's (MAP) secretariat through the Regional Activity Centre for Specially Protected Areas. The main functions of the coordinating structure shall consist in:
- collecting, validating and circulating data at Mediterranean level;
 - promoting the drawing up of inventories of species, seagrass meadows and other vegetal assemblages of importance for the Mediterranean marine environment;
 - promoting transboundary cooperation;
 - promoting and supporting the setting up of marine vegetation monitoring networks;
 - preparation of reports on progress in the implementation of the Action Plan, to be submitted to the meeting of national focal points for SPAs and to meetings of the Contracting Parties;
 - organizing meetings of experts on specific subjects relating to marine vegetation and training sessions.

- 24.** Complementary work done by other international organizations, and aiming at the same objectives, shall be encouraged, promoting coordination and avoiding possible duplication of efforts.

E. PARTICIPATION IN THE IMPLEMENTATION

- 25.** Implementing the present Action Plan is the province of the national authorities of the Contracting Parties. The concerned international organizations and/or NGOs, laboratories and any organization or body are invited to join in the work necessary for implementing the present Action Plan. At their ordinary meetings, the Contracting Parties may, at the suggestion of the meeting of National Focal Points for SPAs, grant the status of "Action Plan Associate" to any organization or laboratory which so requests and which carries out, or supports (financially or otherwise) the carrying out of concrete actions (conservation, research, etc.) likely to facilitate the implementation of the present Action Plan, taking into account the priorities contained therein.

- 26.** The coordination structure shall set up a mechanism for regular dialogue between the participating organizations and, where necessary, organize meetings to this effect. Dialogue should be made mainly by mail, including E-mail.

F. TITLE OF PARTNER OF THE ACTION PLAN

- 27.** To encourage and reward contributions to the work of applying the Action Plan, the Contracting Parties may at their ordinary meetings grant the title of "Action Plan Partner" to any organization (governmental, NGO, economic, etc.) that has to its credit concrete actions likely to help protect marine vegetation in the Mediterranean. Conditions for the awarding of the Partner title shall be adopted by the Contracting Parties following the advice given by the meeting of national focal points for SPA.

G. ASSESSING THE IMPLEMENTATION AND REVISION OF THE ACTION PLAN

- 28.** At each of their meetings, the national focal points for the SPAs will assess the progress in the implementation of the Action Plan, on the basis of national reports on the subject and of a report made by the RAC/SPA on implementation at regional level. In the light of this assessment, the meeting of the national focal points for the SPA will suggest recommendations to be submitted to the Contracting Parties. If necessary, the meeting of the focal points may also suggest adjustments to the timetable given in the Annex to the Action Plan.

**Annex
Implementation Timetable**

Action	Deadline
- Ratification of the SPA Protocol	As soon as possible
- Mediterranean symposium (see paragraph 18 of the Action Plan)	Before November 2000 for the first symposium and, thereafter, every four years.
- Guidelines for impact studies (see paragraph 11 of the Action Plan)	October 2000
- First version of the Mediterranean Data Bank (see paragraph 19 of the Action Plan)	October 2000
- First issue of the directory of concerned specialists, laboratories and organizations	October 2000
- Launching of the procedures for legal protection of species (see paragraph 9 of the Action Plan)	Year 2001
- Elaboration of national plans (see paragraph 22 of the Action Plan)	2001-2002
- Inventory of seagrass meadows and other marine vegetal assemblages that could be considered natural monuments (see paragraph 13 of the Action Plan)	Year 2002
- Preparation of management plans for the protected areas	Year 2002
- Preliminary inventory of species	Year 2002
- Setting up of networks for the monitoring of marine vegetation	Year 2003
- Mapping of seagrass meadows and other vegetal assemblages of importance for the marine environment	Year 2006