

PROPOSAL FOR REVIEW

PROJECT TITLE:	IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAMME (SAP) FOR THE RED SEA AND GULF OF ADEN
COUNTRIES:	DJIBOUTI, EGYPT, JORDAN, SAUDI ARABIA *, NORTHERN SOMALI COAST, SUDAN, YEMEN *(non-GEF resources)
GEF FOCAL AREA:	International Waters
GEF ELIGIBILITY:	Eligible under para 9 (b) of GEF Instrument
TOTAL PROJECT COSTS:	US\$ 36,606,000
GEF FINANCING:	US\$ 19,000,000
GOVERNMENTS' CONTRIBUTION:	US\$ 2 million (in cash and in kind)
CO-FINANCING	PERSGA: US\$ 4.65 million Kingdom of Saudi Arabia: US\$ 6 million Islamic Development Bank: US\$ 5 million (to be confirmed) European Commission: US\$ 3 million (to be confirmed) Government of Japan: US\$ 3 million (to be confirmed) UNDP: US\$ 2 million (to be confirmed)
ASSOCIATED PROJECTS:	US\$ 271 million (Annex 7)
GEF OPERATIONAL FOCAL POINT:	Djibouti: Mr. Mohamed Ali Moumin, Head, Directorate of Planning, Land Management and Environment Egypt: Mr. Salah Hafez, CEO of Egyptian Environmental Affairs Agency Jordan: Ms. Nadia Juhari, Ministry of Planning Somalia: Not applicable. Sudan: Mr. Amin Salih Yasin, Ministry of Finance and National Economy Yemen: Mr. Mohsin Al-Hamdani, Chairman of Environment Protection Council
GEF IMPLEMENTING AGENCIES:	UNDP, UNEP, World Bank
EXECUTING AGENCY:	Regional Organisation for the Conservation of the Environment of Red Sea and Gulf of Aden (PERSGA)

LOCAL COUNTERPART AGENCY:	Djibouti: Directorate of Maritime Affairs Egypt: Egyptian Environmental Affairs Agency Jordan: General Corporation for Environment Protection Saudi Arabia: Meteorology and Environment Protection Agency Northern coast of Somalia: Local Authority of Fisheries and Coastal Development, Hargeisa; and Executive Council of Bari Region, Bosaso Sudan: Higher Council for Environment and Natural Resources Yemen: Environment Protection Council
ESTIMATED APPROVAL DATE:	October 1997
PROJECT DURATION:	Five years
PREPARATION COSTS:	GEF: US\$ 340,000 PDF (UNDP, UNEP & World Bank) Norway: US\$ 100,000 PERSGA: US\$ 70,000 UNDP: US\$ 50,000 World Bank: US\$ 50,000

REGION, COUNTRY AND SECTOR BACKGROUND

1. Located at the junction of three major biogeographical realms and characterised by an arid coastal zone with minimal freshwater input, the Red Sea and Gulf of Aden Region (hereafter called “the Region”) contains some of the world’s most important coastal and marine environments and resources. The topography ranges from nearshore, protected shallows, to exposed sandy and rocky shorelines, and depths of over 2,000 metres, giving rise to complex ecosystems and high biological diversity. Extensive mangroves, seagrass and macro-algal beds occur in the Region, forming highly productive habitats for unique species assemblages. The great variety of reef types in the Red Sea is astounding. The diversity of corals, many of which are found only in the Red Sea, is greater than anywhere else in the Indian Ocean. More than 1,300 species of fishes have been recorded from the Red Sea, higher than any other enclosed sea. Endemism at generic, species and sub-species levels in the Red Sea is extremely high, especially among reef fishes and invertebrates. The Gulf of Aden, one of the biologically least known branches of the Indian Ocean, is heavily influenced by seasonal upwelling and contains fishery resources of global importance. Situated at the eastern extreme of the Gulf of Aden, the Socotra Archipelago is of global significance in terms of island biodiversity and species endemism. It has been rated as being one of the highest priority areas warranting protective management in the Arabian Seas region¹.

2. Although the Red Sea is still one of the least disturbed seas relative to other enclosed international water bodies, it is in increasing jeopardy. The transboundary issues of concern are wide ranging, from maritime pollution caused by international shipping, to unregulated exploitation of shared fish stocks, to widespread habitat destruction by uncontrolled coastal zone development leading to loss of important species. There is a growing risk of marine pollution, notably from maritime transport of petroleum, and environmental degradation from rapidly expanding coastal zone development including tourism facilities. In the Gulf of Aden, the fisheries are under great pressure from over-exploitation and illegal fishing. The rich cultural heritage of the Region, including a number of significant archaeological, historical and sacred sites on the coast, may come under increasing risk due to development pressure.

3. The SAP process supports and facilitates the primary objective of the Jeddah Convention² of 1982, which is the conservation of the environment of the Red Sea and Gulf of Aden. The aims of the SAP are to develop and implement a regional framework for protection of the environment and sustainable development of coastal and marine resources. In view of the Region’s uniqueness, the growing environmental threats, and the necessity for action, the preparation of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden was initiated in October 1995.

4. The SAP process was led by the Regional Organisation for the Conservation of the Marine Environment of the Red Sea and the Gulf of Aden (PERSGA) and funded by the GEF PDF mechanism, with supplemental support from PERSGA, the Government of Norway,

1 Kelleher, G., Bleakley, C. and Wells, S. 1995. A Global Representative System of Marine Protected Areas. Volume III. The Great Barrier Reef Marine Park Authority, the World Bank, and the World Conservation Union (IUCN).

2 Final Act of Jeddah Plenipotentiary Regional Conference on the Conservation of the Marine Environment and Coastal Areas in the Red Sea and Gulf of Aden.

UNDP and the World Bank. The SAP process was jointly supported by the three GEF partners. Annexes 4, 5 and 10a describe the SAP process further, as well as its main findings and recommendations. The GEF funding sought for the present proposal is designed to achieve global environmental benefits by removing the barriers against implementation of the SAP, which addresses transboundary issues. GEF funding is also sought to support high priority preventive actions to reduce navigation risks within the Region.

5. The development of the SAP used a participatory process which included workshops to support the development of the Country Reports, Navigation Risk Workshops in Egypt and Yemen and a Living Marine Resources Workshop in Saudi Arabia. Although the Government of Eritrea is not a member state of PERSGA and has not been directly involved in the SAP process, partnerships are being developed between the two through UNDP. The development of the SAP as well as the present proposal has taken into substantial consideration the significant marine biodiversity of Eritrea and its ecological role in the regional context. The recently approved five year GEF project “Conservation Management of Eritrea’s Coastal, Marine and Island Biodiversity” will complement fully the proposed regional SAP and ensure that the SAP will indeed be a viable and sustainable regional initiative.

PROJECT OBJECTIVES

6. The long term objective of the project is to safeguard the coastal and marine environments of the Red Sea and Gulf of Aden Region and ensure sustainable use of its resources. The project will enable the implementation of a series of complementary, preventive and curative actions identified in the SAP.

7. The proposed project will be composed of the following objectives.

- (a) Institutional strengthening to facilitate regional co-operation;
- (b) Reduction of navigation risks and maritime pollution;
- (c) Sustainable use and management of living marine resources;
- (d) Development of a Regional Network of Marine Protected Areas (MPAs);
- (e) Support for integrated coastal zone management (ICZM);
- (f) Enhancement of public awareness and participation; and
- (g) Monitoring and evaluation of programme impacts.

PROJECT DESCRIPTION

8. The Project Components and their Outputs are described below:

Project Component 1. Institutional Strengthening to Facilitate Regional Co-operation

Output 1.1. Strengthened Institutional Capacity of the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden - PERSGA

Activities:

- 1.1.1. Establish a Programme Co-ordination Unit (PCU) within PERSGA, consisting of a Regional Co-ordinator, regional technical experts in the thematic areas of the SAP, administrative support staff and a Chief Technical Advisor. The PCU will strengthen the capacity of PERSGA in co-ordinating and implementing SAP activities, and ensure co-operation with other environmental and development programmes in the Region. PERSGA will also be responsible for programme administration, resource mobilisation, and finance management including procurement and disbursement.

Output 1.2. Enhanced Regional Co-operation

Activities:

- 1.2.1. Develop a work plan for region-wide implementation of the SAP.
- 1.2.2. Continue the existing SAP Task Force and update its terms of reference to allow it to oversee the implementation and monitor the progress of the full programme.
- 1.2.3. Co-ordinate and support the implementation of the national components of the SAP, and their incorporation into national policies and investment programmes.
- 1.2.4. Establish and co-ordinate activities of the different thematic Regional Expert Working Groups envisaged under the other project components, and support their regular meetings and training workshops.
- 1.2.5. Develop, at the request of the PERSGA Council, the additional regional protocols envisaged under the other project components.
- 1.2.6. Facilitate regional communication, information flow and data exchange through newsletters, e-mail and internet services, a regional library and a information database.

Output 1.3. Developing a Sustainable Financing Strategy

Activities:

- 1.3.1. Review the opportunities for self-financing of the different components of the project at regional and national levels, pinpointing the potential economic sources and mechanisms. Undertake consultations with the co-operating governments and all stakeholders involved, including the private sector.
- 1.3.2. Evaluate the establishment of a proposed Red Sea and Gulf of Aden Environmental Fund to support transboundary activities identified in the SAP. This will involve evaluation of existing economic instruments in the countries which may contribute to the Fund as well as possible support from donors. This

will include procedures to define disbursement priorities and the legal, governance and administrative structure of the Fund.

Project Component 2. Reduction of Navigation Risks and Maritime Pollution

Output 2.1. Strengthened Regional Co-operation and Technical Capabilities

Activities:

- 2.1.1. Continue the PERSGA Navigation Working Group as a regional forum for promotion and implementation of “good practices” in navigation risk reduction and dissemination of “lessons learnt” on a sustained basis.
- 2.1.2. Co-operative implementation of major maritime conventions on a regional basis and co-operative development of selected PERSGA Protocols concerning measures to reduce navigation risks.
- 2.1.3. Following establishment of a Regional Agreement on Port State Control, support training of staff in implementation of the agreement to improve the operational and safety standards of vessels operating in the Red Sea and Gulf of Aden.
- 2.1.4. Conduct a re-examination of Traffic Separation Schemes (TSS) for the shipping lanes of the southern Red Sea and the introduction of recommended tracks for through traffic, in co-ordination with the International Maritime Organisation (IMO). Also review the need for TSS at entry/exit points into some major ports.
- 2.1.5. In conjunction with the establishment of the new TSSs, implement surveys to accurately establish water depths and location of obstacles, and install new navigational aids in critical locations.
- 2.1.6. Review the design and planned operation of the Vessel Traffic System (VTS) for the entry to the Gulf of Suez and the Strait of Tiran and prepare an evaluation of the technical and financial feasibility of developing a VTS for the Bab el Mandab.
- 2.1.7. Develop a Regional Oil Spill Contingency Strategy which is complemented by Sub-Regional, National and Local Oil Spill Contingency Plans.
- 2.1.8. Revise the Agreement which established the Marine Emergency Mutual Aid Centre (MEMAC) in Djibouti to make it a Sub-Regional Centre under the umbrella of PERSGA, and update its current Sub-Regional Oil Spill Contingency Plan.
- 2.1.9. Hold regional training courses for oil spill preparedness and combating procedures (*to be funded under PERSGA work programme*).
- 2.1.10. Evaluate and develop sustainable financing mechanisms to support long-term operation of navigation systems and oil spill management programmes at the regional, national and local levels.

Output 2.2. National Actions at Legislative and Technical Levels

Activities:

- 2.2.1. Systematic action on the national level to facilitate the timely ratification of key international maritime conventions for improved navigation standards and reduction of environmental risks associated with maritime accidents.

- 2.2.2. Adoption of Port State Control, following ratification of key conventions, to allow for routine inspections of vessels that make certain the crews and ships are properly qualified and equipped, in order to reduce navigation risks in ports and territorial waters.
- 2.2.3. Improvement of Traffic Separation Schemes for major ports and their approaches, including surveys in selected areas and installation of additional navigational aids.
- 2.2.4. Updating of port regulations which could be supported by development of “model port rules” adapted to individual locations.
- 2.2.5. Dissemination of “good practices” and “lessons learnt” by the PERSGA Working Group at the local level through workshops.
- 2.2.6. Preparation of national oil spill contingency plans and related emergency management systems for countries currently lacking these plans (*to be funded under PERSGA work programme*).
- 2.2.7. Preparation of a “model” local oil spill contingency plan for a selected priority port which could be used as a basis for development of additional locally adjusted plans.

Project Component 3. Sustainable Use and Management of Living Marine Resources

Output 3.1. Capacity Building for Sustainable Management of Living Marine Resources

Activities:

- 3.1.1. Continue the Regional Living Marine Resources (LMR) Working Group supported by a regional expert based at the PERSGA Secretariat. This Working Group will meet twice annually to plan joint activities, evaluate progress, and exchange data and lessons learnt. Its members are the link between the regional project and the national government agencies concerned with the management of LMRs. Specific issues will be dealt with by special experts committees.
- 3.1.2. Support existing fisheries institutions in developing and conducting training courses for fisheries managers and applied researchers directly involved in fisheries assessment, monitoring and management.
- 3.1.3. Implement activities to train fishermen in the collection of landing data and stocks assessment.

Output 3.2. Development of a Sustainable Management Strategy for Transboundary Fish Stocks and Invertebrates

Activities:

- 3.2.1. Develop standardised methods for data collection, statistical analyses and presentation.
- 3.2.2. Produce a Species Identification Guide to the Living Marine Resources of the Red Sea and Gulf of Aden in co-operation with FAO, as a tool for data collection, statistics and fisheries management.

- 3.2.3. Assess the transboundary stocks of pelagic finfish with special attention to sharks. These assessments will cover migration routes, major spawning, nursery areas, fishing pressures and economics. *(Scope of activities requires supplementary resources to those provided by the GEF.)*
- 3.2.4. Analyse the impacts of present shark fisheries on shark populations and local socio-economic parameters of fishing communities.
- 3.2.5. Assess stocks of shrimp and lobsters and other exploited invertebrates. Review the past and present exploitation pressures and economics. *(Scope of activities requires supplementary resources to those provided by the GEF.)*
- 3.2.6. Survey ornamental fish collecting activities for the aquarium trade and develop a monitoring programme.
- 3.2.7. Based on the above information and assessment, develop a Sustainable Management Strategy for Transboundary Fish Stocks and Invertebrates³.
- 3.2.8. Initiate implementation of the Management Strategy at national and local levels through the network of fisheries workers trained under Output 3.1.
- 3.2.9. Develop public awareness programs for fishing communities and other users of marine resources in support of the Management Strategy.

Output 3.3. Development of a Regional Conservation Plan for Turtles, Seabirds and Marine Mammals

Activities:

- 3.3.1. Educate and train members of coastal communities in the protection and monitoring of turtles, nesting seabirds and marine mammals.
- 3.3.2. Conduct seasonal surveys and monitoring of marine turtles, sea birds and marine mammals, including migration routes, nesting and feeding areas; as well as exploitation by local communities.
- 3.3.3. Based on the above findings, develop a Regional Conservation Plan for turtles, sea birds and marine mammals, building on traditional beliefs and conservation practices.
- 3.3.4. Initiate implementation of the Regional Conservation Plan at regional, national and local levels through extensive public awareness programs, and participation of the coastal communities involved in the earlier training.
- 3.3.5. Develop small-scale pilot relief projects for the poorest fishing communities in Sudan and the northern coast of Somalia to reduce pressure on turtles and certain other easily accessible nearshore resources.

3 This Management Strategy should include: mechanisms to monitor and regulate fishing activities and trading; introduction of quota and closed seasons; regulations on fishing gear and methods; and community-based management, building on the revival and strengthening of traditional fisheries conservation practices.

Output 3.4. Development of a Regional Conservation Plan for Key Habitats: Mangroves, Seagrass Beds and Coral Reefs

Activities:

- 3.4.1. Organise a regional workshop on habitat conservation with emphasis on mangroves, seagrass beds and coral reefs in order to draft a detailed workplan for the conservation of key habitats, and integration of habitat conservation into the management of living marine resources, marine protected areas and coastal zone management.
- 3.4.2. Conduct surveys on the status of the Region's mangrove areas to develop a regional framework for site-specific action, including sustainable use of mangrove resources, alternative animal fodder, fuel and building materials, and management of freshwater resources.
- 3.4.3. Conduct survey of mangrove-associated fauna with special emphasis on sensitive stages of harvestable resources.
- 3.4.4. Develop protection, and where necessary, rehabilitation programmes. Establish local mangrove nurseries and re-plantation schemes, with special attention to genetic source of seedlings.
- 3.4.5. Map seagrass beds throughout the Region and assess their status, particularly in trawlable areas.
- 3.4.6. Conduct seasonal survey of diversity and biomass of seagrass-associated fauna, with special emphasis on harvestable fish and shellfish species, as a basis for the development of a comprehensive management and conservation scheme.
- 3.4.7. Conduct seasonal survey of selected coral reef areas to determine the degree and the root causes of widespread deterioration of reef habitats; develop protection and, where necessary, rehabilitation schemes.
- 3.4.8. Develop a programme for a sustainable, non-consumptive use of coral reefs by tourists, including a long-term monitoring scheme.
- 3.4.9. Develop control mechanism for construction work, dredging and landfill with regard to the conservation of mangroves, seagrass beds and coral reefs.

Output 3.5. Establishing the Legal and Policy Framework for Conservation and Sustainable Management of Living Marine Resources

Activities:

- 3.5.1. Develop regional agreements and protocols for the sustainable use of transboundary stocks and protection of threatened and endangered species.
- 3.5.2. Review and consolidate national regulations on species, size, fishing gear and seasons of exploitation, and control through licensing and marketing systems, in line with regional agreements and protocols. Include regulations on the collection of ornamental fish for the aquarium trade.
- 3.5.3. Conduct a study on regional fisheries monitoring, surveillance and control systems, including assessment of possible self-financing mechanisms to support implementation.
- 3.5.4. Liaise with governments and concessionaires to find means of enhancing enforcement of fisheries laws and regulations. Identify possible financial

mechanisms such as licensing and fines to cover the capital and recurrent costs of enforcement programmes.

- 3.5.5. Promote integration of fisheries development into coastal zone management.

Project Component 4. Development of a Regional Representative Network of Marine Protected Areas

Output 4.1. Establishment of a Regional Network of Experts Specialised in MPA Planning and Management

Activities:

- 4.1.1. Establish a Working Group of Marine Protected Area (MPA) planners and managers supported by a regional expert who will be based at the PERSGA Secretariat. The Working Group will meet twice annually to plan joint activities, evaluate progress, and exchange data and lessons learnt. Working Group members are the link between the regional project and the national government agencies in charge of MPAs. They are the key counterparts for all country-based activities within the project.
- 4.1.2. Develop a Regional Master Plan as framework for site specific Management Plans.
- 4.1.3. Adapt existing regional guidelines for the establishment and management of MPAs to regional conditions, including consideration of the specific abiotic, biotic and socio-economic conditions of the region.
- 4.1.4. Integrate findings of surveys and assessments described under Project Component 3 into MPA scheme.

Output 4.2. Increased Human Capacity in MPA Management through Regional Training and Exchange Programmes

Activities:

- 4.2.1. Conduct a series of training courses, one basic and one advanced each, in sanctuary management, survey and monitoring, and marine rangers duties. These courses will be held at various sites throughout the Region, partly building on the experience of existing MPAs. They are based on the guidelines described under 4.3.1.
- 4.2.2. Organise exchange programmes and study tours for current and proposed MPA managers, scientists and rangers in different countries of the Region to enhance the transfer of experience within and outside the Region.
- 4.2.3. Provide formal overseas professional training to selected candidates, followed by on-the-job training in home countries. *(Scope of activities requires supplementary resources to those provided by the GEF.)*

Output 4.3. Completion of Site-Specific Management Plans, supported by detailed habitat, biodiversity and resource use surveys, public consultation, and commitments from the respective governments

Activities:

- 4.3.1. Organise national meetings to evaluate the current legislative framework for MPA management, review required resources for enforcement of regulations at existing priority MPAs, and initiate the legal process for designation of new MPAs of regional priority.
- 4.3.2. Conduct detailed habitat, biodiversity and resource use surveys at four selected sites which lack current information—Djibouti, northern coast of Somalia, Sudan and Yemen (Annex 6). Consult local stakeholders on their views on management throughout the process. Surveys of Socotra in Yemen and areas in Egypt, Eritrea and Saudi Arabia will be covered by other projects (Annex 7), and Sanganeb in Sudan has already been studied.
- 4.3.3. Develop site specific Management Plans for all network MPAs except the Farasan Islands and Ras Muhammad where such plans already exist, and Socotra where such a plan will be developed under another GEF project.

Output 4.4. Effective Implementation of a Network of Representative MPAs

Activities:

- 4.4.1. Provide basic equipment, facilities and on-the-job training for MPA management.
- 4.4.2. Conduct national and local consultations and workshops to initiate implementation of the Management Plans.
- 4.4.3. Develop public awareness and participation programmes for various target groups at each site, in the context of the respective Management Plans.
- 4.4.4. Carry out studies on suitable and viable economic instruments for financing the operations of MPAs in the long run, including eco-tourism potential.
- 4.4.5. Offer alternative livelihood to local fishing communities at Saba Wanak (northern coast of Somalia), Iles des Sept Frères (Djibouti) and Dungonab (Sudan), including fishing gear that is non-destructive and suitable for exploitation of pelagic resources, alternative housing and fuel, and revenue from eco-tourism. *(Scope of activities requires supplementary resources to those provided by the GEF.)*
- 4.4.6. Carry out long-term monitoring activities to check progress and impacts of the Management Plans at each site, and propose adjustments where needed.

Project Component 5. Support for Integrated Coastal Zone Management

Output 5.1. Enhanced Regional Exchange in Expertise, Experience and Information

Activities:

- 5.1.1. Establish a Regional Working Group on ICZM with experts from each participating country to facilitate this component and to exchange lessons learnt from national experience through periodic workshops.
- 5.1.2. Conduct a series of regional training workshops on ICZM and related subjects which would include, but not be limited to, the following: planning and implementation of ICZM, use of environmental assessment in ICZM, resource and economic valuation in coastal areas, mechanisms for improved co-ordination, participatory approaches to planning in coastal areas and methods for conflict resolution. The proposed training programmes would be co-ordinated with complementary activities included under other project components.
- 5.1.3. Review the present database and GIS systems in the Region that contain data relevant to ICZM. Provide technical advice and support to harmonise the different systems to facilitate information exchange.

Output 5.2. Strengthened National Capacity in Developing National ICZM

Activities:

- 5.2.1. Establish or consolidate national ICZM working groups in each of the participating countries, represented by all major relevant government agencies, academic institutions, community leaders, NGOs and the private sector. The cross-sectoral working groups will meet regularly to review progress of activities and exchange lessons learnt in different areas of management within the countries.
- 5.2.2. In countries without ICZM Plans, organise week-long, national, cross-sectoral workshops and brain-storming sessions to trigger Government and public dialogue and interest in ICZM, identify key environmental issues and potential solutions, and assess present capabilities and needs.
- 5.2.3. Provide short-term applied training opportunities to selected candidates who are or will be involved in ICZM.
- 5.2.4. Develop national frameworks for ICZM including issues such as tourism development and environmental standards for fish and shrimp farms.
- 5.2.5. In co-ordination with other components of the programme, develop sustainable financing mechanisms focusing also on coastal investment opportunities which could support the implementation of ICZM.

Project Component 6. Public Awareness and Participation

Output 6.1. Strengthened Networks for Environmental Awareness Activities in the Region

Activities:

- 6.1.1. Establish a Regional Working Group on Public Awareness and Participation with representatives from each country and supported by a regional expert at the PCU.
- 6.1.2. Establish linkages among environmental and community groups participating in the project, through the production of a newsletter and periodic regional workshops that encourage exchange of news, good practices and lessons learnt.
- 6.1.3. Produce a series of awareness and educational materials focusing on regional issues for distribution to all participating countries. Electronic media and web-pages will be utilised, where feasible, for out-reach within and beyond the region. Linkage with the UNDP/GEF Initiative, IW: LEARN will be established.
- 6.1.4. Develop regional awareness programmes whereby concerted activities are launched in the countries and publicised by the media to increase impacts.
- 6.1.5. Building on the experience and expertise gained from the GEF Small Grant Programmes, as well as those from the micro-grants schemes in the Danube River Basin and the Black Sea programmes, develop micro-grant programmes to provide support to local environmental and community groups to undertake micro-projects which integrate environmental awareness with sustainable resource development objectives in coastal and marine areas.

Output 6.2. Strengthened National and Local Environmental Awareness in Support of the SAP

Activities:

- 6.2.1. Initiate dialogues with and among relevant Government agencies to trigger interest in environmental awareness programmes.
- 6.2.2. Organise targeted workshops for representatives of Ministries of Education and other government bodies to review the potential for increased coverage of environmental management of the Red Sea and Gulf of Aden in their programmes and curricula.
- 6.2.3. In countries where environmental NGOs or community groups do not exist or are at the infant stage, assess current needs for training in developing awareness programmes. Following the needs assessment, provide training to the local groups.
- 6.2.4. Involve local groups in developing and implementing awareness programmes in support of other components of the project; targeting different stakeholders such as fishermen, coastal villagers, ship owners/operators and harbour workers.

Project Component 7. Monitoring and Evaluation Programme

Output 7.1. Development of a Regional Monitoring and Evaluation Programme

Activities:

- 7.1.1. Develop a model annual report for PERSGA, design a structured work plan and schedule for report preparation, and establish standard reporting formats for tables.
- 7.1.2. Define the performance and progress indicators and the specific environmental and socio-economic indicators needed to measure the achievements of the different components in relation to the set objectives and expected outputs. This should be done by PERSGA with the technical expertise of the PCU and guidance from the GEF implementing agencies. This will reflect the evolving guidance being developed by the GEF Secretariat.
- 7.1.3. Design a monitoring programme with well defined methodology of data collection and analysis, and a structured database for time series data. The monitoring programme will form an integral part of the different components of the project.
- 7.1.4. Organise regional training workshops for the five thematic expert working groups on monitoring and evaluation, and specifically on the methodology involved.
- 7.1.5. Analyse all data collected from the co-operating countries periodically. Review the results for overall evaluation as well as evaluation by component. Disseminate the results annually.
- 7.1.6. Conduct an independent mid-term and final evaluation and facilitate effective dissemination of the findings and lessons learnt.

Output 7.2. Implementation of the Monitoring and Evaluation Programme at National Levels

Activities:

- 7.2.1. Supervise and co-ordinate implementation of the monitoring programme at the national level through the national PERSGA focal points, supported by members of the Expert Working Group.
- 7.2.2. Collate and submit the monitoring data to PERSGA for monitoring and evaluation purposes.

RATIONALE FOR GEF FINANCING

9. The co-operatively prepared Strategic Action Programme for the Red Sea and Gulf of Aden provides a sound technical basis for a prevention oriented project to address priority activities under GEF Operational Programme Number 9, “Integrated Land and Water Multiple Focal Area Operational Programme⁴.” The objective of this Operational Programme is to support “better use of land and water resource management practices on an area wide basis.”

4 Global Environment Facility (April 1997). GEF Operational Programmes.

Under this Operational Programme, activities are supported which have an “area wide focus, and with biodiversity considerations often included in project objectives, more proactive interventions aimed at the protection of international waters with important biodiversity are common.” A major focus of this Operational Programme is to support measures for “prevention of damage to threatened waters...” and these focus on “preventive measures to address threats rather than remedial, highly capital intensive measures.” The project would also support measures to address these issues in a group of African countries identified as a priority area in the guidance provided by GEF.

10. The objective of the proposed project is to achieve global environmental benefits through implementation of the SAP, which has a major emphasis on cost-effective preventive actions for the conservation of the coastal and marine environment of the Red Sea and Gulf of Aden. The GEF funding sought for the proposed project would “operationalize [a] sustainable development strategy” for the Region and support incremental costs needed to remove barriers to implementation of the SAP, including additional transaction costs for joint planning activities, development of common approaches to sectoral policies, data collection and analyses, and co-ordination of efforts among the participating countries. Consistent with the objectives of the GEF, the proposed project supports complementary policy and technical measures on a regional basis for the reduction of navigation risks and associated maritime pollution; management of important living marine resources which are shared by the co-operating countries; development of a network of representative Marine Protected Areas to conserve unique biodiversity; and support for Integrated Coastal Zone Management to protect the critical interface between the terrestrial and marine environments. The proposed project also has a high potential for replication of key elements, such as the activities for navigation risk and the management of living marine resources, in other international waters programmes of the GEF.

11. The proposed project, consistent with GEF guidance, would contribute significantly to the “reduction of stress to the international waters environment” in this Region and would support PERSGA and the co-operating countries in “making changes in their sectoral policies, making critical investments, [and] developing necessary programmes” to achieve these objectives. The long-term commitment on the part of the concerned governments is demonstrated by the Jeddah Convention, support for PERSGA, participation in the SAP Task Force, and a direct role in the Country Reports and Regional Studies which co-operatively identified priority actions. The support of GEF will play an important catalytic role in the project, and the participation of the European Community, international financial institutions, donors and the private sector will also contribute to this multi-country and multi-stakeholder effort. Linkages with the UNDP/GEF initiative IW:LEARN will provide for sharing and replication of successful practices in the international waters field. The emphasis in the individual project components on the evaluation of sustainable mechanisms for self-financing of a number of activities would contribute to the long-term financial sustainability of project initiated actions.

SUSTAINABILITY AND PARTICIPATION

Government Commitment

12. The co-operating Governments have demonstrated their commitment to regional co-operation for conservation of coastal and marine resources through their approval of the Jeddah Convention, establishment of PERSGA and participation in development of the SAP. The

development of the SAP was initiated at the “Sea to Sea Conference,” held in Jeddah in October 1995, which reviewed the challenges and opportunities for conservation of the Red Sea and Gulf of Aden. The proposed project has been designed to support implementation of agreed priority actions identified in the SAP. The Ministerial level PERSGA Council has fully endorsed the outcome of the SAP process and has authorised the PERSGA Secretariat to pursue the implementation of the SAP and its related initiatives. The project brief has incorporated the comments and suggestions gathered in the Fourth SAP Task Force Meeting and has received the official endorsement of all participating countries (Annex 2). Government commitment is further demonstrated in their financial contribution as listed in the finance section and the budget.

Stakeholder Commitment and Participation

13. The development of the SAP has been a participatory process demonstrating the broad based commitment of a wide range of stakeholders in conservation of the Red Sea and Gulf of Aden. Country Reports were prepared for all co-operating countries with the direct participation of diverse local experts from a range of disciplines. In addition, field surveys were conducted in Djibouti, the northern coast of Somalia, Sudan and Yemen, where baseline data are limited. As part of this process, informal consultations were held with coastal communities in several locations. With the support of UNDP, consultations were also held with the Government of Eritrea. To widen participation and facilitate consensus building, national workshops were conducted to support development of the Country Reports and to identify priority actions required by each country to address environmental threats. A wide range of stakeholders participated, including representatives of national and local government, academic and applied research institutes, non-governmental organisations, and community groups. The activities of the Regional Navigation Working Group benefited from workshops held in Egypt and Yemen while the Regional Living Marine Resources Working Group held a workshop in Saudi Arabia. These workshops provided input from regional groups of specialists for the planning and implementation of the proposed GEF project.

Financial Sustainability

14. Member countries have provided annual contributions in cash to support the work of PERSGA including implementation of the SAP. The budget of PERSGA for fiscal year 1996 included contributions of US\$930,000 from member countries. This was complemented with supplemental support from various international and regional sources. The Kingdom of Saudi Arabia also provides PERSGA with offices and covers selected operational costs. The anticipated support of SAP implementation by the Jeddah-based Islamic Development Bank, an international financial institution, provides a regionally based source of support for the project. The planned participation of the European Commission in SAP implementation brings the experience and resources of the European Union to support proposed priority actions. As noted in the SAP, there also exists significant potential for participation of internationally and regionally based private sector organisations through contributions in cash and kind. All operational components of the proposed Project include activities to develop appropriate resource mobilisation measures to allow for full or partial funding of routine operational costs.

LESSONS LEARNT FROM TECHNICAL REVIEWS

Technical Review

15. An independent technical review was prepared by a STAP Roster expert. The reviewer endorsed the project in positive terms, and made a number of constructive suggestions for further strengthening of the proposal. These proposals have been incorporated into the present text, as described below.

16. The reviewer suggested that IMO be involved in the navigation risk component. This suggestion is extremely well received, and the World Bank, which will be handling this component, will ensure IMO's involvement in the implementation.

17. The reviewer further noted that the component for the sustainable management of living resources did not sufficiently address non-harvesting uses, but was rather limited to the fisheries sector only. This is considered an extremely useful observation and the present Output 3.4 was added in response to the reviewer's suggestions. In addition, the symbiotic linkages between the components addressing fisheries, ICZM and the MPAs has been further strengthened to ensure that these are not implemented in isolation.

18. The reviewer's suggestion that a technical expert advisory group be established is well taken. The Red Sea Task Force will serve this function and this has been further strengthened in the text.

Lessons Learnt from Similar Initiatives

19. To support preparation of the SAP, the World Bank prepared a review of the "Lessons Learnt" from regional environmental programmes and evaluated their specific application to the work of PERSGA⁵. The review included evaluation of lessons learnt to date from planning and implementation of regional environmental programmes for the Baltic Sea, Black Sea and Mediterranean Sea and also benefited from experience from the Aral Sea and Danube River Basin. This review was presented at the "Sea to Sea Conference" which was used to launch the SAP and its findings were discussed with members of the Task Force. During development of the SAP, a co-operative review of the experience in ICZM in the Mediterranean was initiated under the Mediterranean Environmental Technical Assistance Programme (METAP) whose preliminary results were also used to support development of the proposed GEF project⁶.

20. Based on the above, therefore, key lessons learnt which have been incorporated into the SAP and the proposed GEF project include the following:

- (a) *Leadership [by] the Convention Secretariat.* Experience has demonstrated the key role which can be played by an effective Convention Secretariat in the

5 Lintner, S.F.; Arif, S., and Hatziolos, M. 1996. The Experience of the World Bank in the Legal, Institutional and Financial Aspects of Regional Environmental Programmes: Potential Applications of Lessons Learned for the ROPME and PERSGA Programmes. World Bank

6 The World Bank.: An Assessment of ICZM Initiatives in the Mediterranean: Experience from METAP and MAP, 1988 - 1996 (in preparation).

development of the SAP and in co-ordination of its implementation. The Secretariat needs to have a clear work programme which can be implemented with available resources. Local funding for the core expenses of the Secretariat is critical to maintain the operational effectiveness of the organisation. PERSGA was responsible for preparation of the SAP, has been authorised by the PERSGA Council to co-ordinate implementation activities and has its core costs covered by payments from members and the contribution of selected headquarters costs by Saudi Arabia.

- (b) *Critical Role of a Task Force.* Preparation and implementation of the SAP and related projects should be supported by a formally established Task Force comprised of representatives of the contracting parties to the Convention and other interested parties who may take a direct role in supporting its implementation. The Task Force should use the SAP process to develop an integrated understanding of transboundary environmental issues and to identify priority actions. The SAP and the proposed Project were prepared with the support of a PERSGA chaired Task Force which will continue to operate during the implementation phase
- (c) *Adoption of a Long-Term Approach.* Given the nature of transboundary environmental problems, a long-term approach is required, allowing for a series of complementary actions to be undertaken in a phased manner over several years. For this approach to be effective, specific measures should be taken to develop and sustain political commitment and public ownership of regional environmental programmes. The SAP and proposed project have adopted such an approach, which emphasises a range of complementary actions, including a major programme to support public awareness and participation.
- (d) *Support for Preventive and Curative Measures.* Successful programmes include complementary measures which support both preventive measures to avoid or minimise future environmental problems and curative measures to remedy existing ones. Given the current status of the Red Sea and Gulf of Aden, the SAP and proposed project place very high emphasis on preventive action through improved environmental planning, coastal zone management and interventions to reduce navigation risks. Curative measures are focused on improved management of living marine resources and management of water, wastewater and solid waste in coastal areas.
- (e) *Co-operative Planning and Implementation.* Experience from previous programmes has demonstrated the importance of co-operative approaches in planning and implementation, in development of a regional vision, and in sustaining support. The SAP and proposed project have included the use of a Task Force which has been complemented by the participation of a diversity of organisations and individuals in the preparation of Country Reports and the activities of the Working Groups.

PROJECT FINANCING AND BUDGET

21. The five year programme is estimated at a total cost of US\$ 36,606,000. Of this amount, US\$ 19,000,300 is being sought from the Global Environment Facility, US\$ 5,995,000 will be secured from the Kingdom of Saudi Arabia, US\$ 1,307,000 from PERSGA, and US\$ 2.0 million (in cash and in kind) from the co-operating countries. Additional co-financing is being sought from the European Commission, the Governments of Denmark and Japan and the Islamic Development Bank. Parallel financing from associated projects amounts to US\$ 271 million (Annex 7). See budget table for cost allocation by components.

INCREMENTAL COSTS

22. The incremental costs analysis, following GEF guidelines, is attached in Annex 1.

ISSUES, ACTIONS AND RISKS

23. During the implementation of the PDF SAP project, PERSGA has proven that it has provided an effective forum for regional co-operation, especially at the technical level, despite complex relationships between the countries in the region. The present project will further the work of this regional body in facilitating co-operation on a diversity of topics of mutual concern and interest. Moreover, the bottom up approach, whereby technical bodies at the working level in the countries act as the main driving force in the design and implementation of independent and collaborative activities, will keep the momentum going in times of conflicts.

24. Broad-based public participation and sustainable financing are two important elements of the project which will reduce the project's dependence on governments in adverse situations. In this context, it is important to stress that UNDP has a fully operational programme in northern Somalia with active project offices in Bosaso, Hargeisa, Berbera, Johar and Belet Wayn. These offices are staffed with both international and national UNDP staff. UNDP's total programme in northern Somalia is presently at US\$ 37 million for the period 1997-1999. The programme focuses on port rehabilitation and improved revenue collection, local governance, infrastructure rehabilitation (water, schools, clinics, etc.), and income generation. In addition, it should be noted that the UN operates an airplane which has daily flights between Nairobi and one of the above mentioned cities. In the Sudan, UNDP supports an active programme, which for 1997-1999 is at the US\$ 40 million mark. The UNDP programme in northern Sudan focuses on Area Development Schemes, which address poverty issues at the local level, working directly with local communities. The "area development" approach is also being introduced in the southern part of the country, in the form of "Area Rehabilitation Schemes". In addition, UNDP's programme supports basic education, especially for girls, renewable energy (biomass, wind and solar), and natural resource management activities, especially community based projects to combat desertification.

25. In view of the active programme mentioned above, it is considered that PERSGA's regional outreach coupled with UNDP's on-the-ground presence in the countries afflicted by insecurity, will be well able to address any risks which might be associated with a project such as the present one.

PROJECT IMPLEMENTATION AND INSTITUTIONAL FRAMEWORK

26. Building on the successful implementation of the PDF phase, the full project will continue to be jointly implemented by the three GEF partners, each with its specialised expertise and comparative advantage in the Region. PERSGA will become the Executing Agency of the full project. The Project Co-ordination Unit (PCU) to be established at PERSGA will provide technical and managerial support to PERSGA. It will be responsible for contracting, resource mobilisation, fund management, procurement, disbursement, programme administration and monitoring. It will consist of a Regional Co-ordinator, regional technical experts in the areas of the SAP, administrative support staff and a Chief Technical Advisor. At the country level, the PERSGA national focal points will also play an important role in co-ordinating national and regional activities of the programme.

27. The Regional Task Force will consist of PERSGA representatives from each participating country, the three GEF partners and the Islamic Development Bank. The Task Force will continue to oversee the direction and progress of the programme and ensure co-operation among countries, international financial institutions and donors. The Expert Working Groups on Navigation and Living Marine Resource formed during the PDF will continue to be the driving force of these two programme components. New Expert Working Groups supported by the respective regional experts at the PCU will be formed for the other components of the programme.

28. As this is a truly joint programme supported in equal part by the three GEF Implementing Agencies, the relative strengths of each agency has been drawn upon for the design of the present project. The backstopping, management and support to the project will draw equally on the comparative advantage of each GEF Implementing Agency. In line with this, therefore, the three partner agencies will implement the project components as follows:

- (a) Institutional strengthening to facilitate regional co-operation (UNEP).
- (b) Reduction of navigation risks and maritime pollution (World Bank).
- (c) Sustainable use and management of living marine resources (UNDP).
- (d) Development of a Regional Network of Marine Protected Areas (MPAs) (UNDP).
- (e) Support for integrated coastal zone management (ICZM) (World Bank).
- (f) Enhancement of public awareness and participation (UNDP).
- (g) Monitoring and evaluation of programme impacts (UNDP).

Regional Institutions

29. Based in Jeddah, PERSGA is responsible for the development, implementation, co-ordination, monitoring and evaluation of regional programmes for the protection and conservation of the marine environment of the Red Sea and Gulf of Aden. Major functions of PERSGA include the implementation of the Jeddah Convention, the Action Plan for the Conservation of the Marine Environment and Coastal Areas in the Red Sea and Gulf of Aden, and the Protocol Concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency. The role of PERSGA has been instrumental in the development of the SAP during the PDF as it has provided a basis for co-operation with international financial institutions, donor agencies and other potential sources of funding. The experience of PERSGA in managing the Red Sea Regional Framework Plan under the GEF

project for the Red Sea Coastal Ecosystems of Yemen has led to the development of institutional mechanisms and capacity for international co-ordination and co-operation in the Region. PERSGA has recently supported regional workshops concerning environmental impact assessment, marine protected areas, living marine resources, and navigation risks. In addition, the series of national workshops which facilitated the development and finalisation of the SAP Country Reports were co-ordinated by PERSGA.

National Institutions

30. A large number of national government and non-government institutions will participate in the different components of the project (Annex 9).

Budget for the Strategic Action Programme for the Red Sea and Gulf of Aden

Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	Op/M & Misc.
1. Institutional Strengthening for Regional Cooperation						
1.1. Strengthening capacity of PERSGA	1,230,000	0	0	20,000	0	0
1.2. Enhanced regional cooperation	700,000	66,000	22,000	64,000	70,000	68,000
1.3. Developing a sustainable financing strategy	0	60,000	0	0	10,000	5,000
<i>GEF-Contribution</i>	<i>1,930,000</i>	<i>126,000</i>	<i>22,000</i>	<i>84,000</i>	<i>80,000</i>	<i>73,000</i>
<i>Non-GEF</i>	<i>195,000</i>	<i>0</i>	<i>443,000</i>	<i>0</i>	<i>0</i>	<i>400,000</i>

Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	Op/M & Misc.
2. Reduction of Navigation Risks and Maritime Pollution						
2.1. Regional Cooperation & Technical Capacity	200,000	154,000	1,500,000	800,000	200,000	200,000
2.2. National Actions at Legislative and Technical Levels		108,000		48,000	200,000	90,000
<i>GEF-Contribution</i>	<i>200,000</i>	<i>262,000</i>	<i>1,500,000</i>	<i>848,000</i>	<i>400,000</i>	<i>290,000</i>
<i>Non-GEF</i>	<i>0</i>	<i>40,000</i>	<i>0</i>	<i>24,000</i>	<i>0</i>	<i>0</i>

Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	Op/M & Misc.
3. Conserv. & Sustain. Use & Management of LMR						
3.1. Capacity building for LMR management	200,000	190,000	440,000	540,000	100,000	160,000
3.2. Sustainable Management of Transboundary Fish Stocks	0	324,000	120,000	310,000	0	160,000
3.3. Regional Conservation Plan for Turtles, Seabirds & Mamr	0	180,000	0	150,000	0	90,000
3.4. Legal and Policy Framework	0	252,000	80,000	0	70,000	0
<i>GEF-Contribution</i>	<i>200,000</i>	<i>946,000</i>	<i>640,000</i>	<i>1,000,000</i>	<i>170,000</i>	<i>410,000</i>
<i>Non-GEF</i>		<i>8,062,000</i>	<i>1,100,000</i>	<i>270,000</i>		<i>240,000</i>

Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	Op/M & Misc.
4. Representative System of MPAs						
4.1. Regional Working Group & Master Plan	200,000	108,000	0	0	100,000	140,000
4.2. Regional training & exchange programs	0	168,000	50,000	440,000	0	20,000
4.3. Site-specific Management Plans	0	336,000	65,000	95,000	30,000	90,000
4.4. Effective Implementation of Management Plans	0	108,000	820,000	80,000	90,000	80,000
<i>GEF-Contribution</i>	<i>200,000</i>	<i>720,000</i>	<i>935,000</i>	<i>865,000</i>	<i>220,000</i>	<i>330,000</i>
<i>Non-GEF</i>	<i>500,000</i>	<i>1,072,000</i>	<i>1,250,000</i>	<i>1,280,000</i>	<i>0</i>	<i>1,030,000</i>

Component Outputs & Activities	Personnel	Sub-	Equip-	Training	Workshop	Op/M &
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	contract	ment			Misc.	
5. Support for ICZM						
5.1. Regional networking and training	200,000	168,000	210,000	230,000	100,000	41,000
5.2. Developing national capacity in ICZM	120,000	302,000	50,000	280,000	180,000	229,000
<i>GEF-Contribution</i>	<i>320,000</i>	<i>470,000</i>	<i>260,000</i>	<i>510,000</i>	<i>280,000</i>	<i>270,000</i>
<i>Non-GEF</i>	<i>0</i>	<i>250,000</i>	<i>50,000</i>	<i>0</i>	<i>0</i>	<i>0</i>
Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	Op/M & Misc.
6. Public Awareness & Participation						
6.1. Regional Networking & Support	200,000	1,012,000	60,000	160,000	100,000	590,000
6.2. National & Local Environmental Awareness	0	168,000	20,000	216,000	0	20,000
<i>GEF-Contribution</i>	<i>200,000</i>	<i>1,180,000</i>	<i>80,000</i>	<i>376,000</i>	<i>100,000</i>	<i>610,000</i>
<i>Non-GEF</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Component Outputs & Activities	Personnel	Sub-contract	Equip-ment	Training	Workshop	O/M & Misc.
7. Monitoring and Evaluation						
7.1. Development of Regional M & E Programme	0	96,000	0	60,000	190,000	40,000
7.2. Implementation of M & E Programme	0	60,000	0	0	0	50,000
<i>GEF-Contribution</i>	<i>0</i>	<i>156,000</i>	<i>0</i>	<i>60,000</i>	<i>190,000</i>	<i>90,000</i>
<i>Non-GEF</i>	<i>400,000</i>	<i>300,000</i>	<i>300,000</i>	<i>200,000</i>	<i>0</i>	<i>200,000</i>
Net GEF Contribution	3,050,000	3,860,000	3,437,000	3,743,000	1,440,000	2,073,000
Project Support Services	232,833	232,833	232,833	232,833	232,833	232,833
Total GEF Contribution	3,282,833	4,092,833	3,669,833	3,975,833	1,672,833	2,305,833
Total non-GEFcontribution	1,095,000	9,724,000	3,143,000	1,774,000	0	1,870,000
GRAND TOTAL	4,377,833	13,816,833	6,812,833	5,749,833	1,672,833	4,175,833

Sub-Total

1,250,000
990,000
75,000
2,315,000
1,038,000

Sub-Total

3,054,000
446,000
3,500,000
64,000

Sub-Total

0
1,630,000
914,000
420,000
402,000
3,366,000
9,672,000

Sub-Total

0
548,000
678,000
616,000
1,178,000
3,270,000
5,132,000

Sub-Total

0
949,000
1,161,000
2,110,000
300,000

Sub-Total

0
2,122,000
424,000
2,546,000
0

Sub-Total

0
386,000
110,000
496,000
1,400,000

17,603,000
1,397,000
19,000,000
17,606,000
36,606,000

Implementation of the Strategic Action Programme for the Red Sea & Gulf of Aden Indicative Consolidated Work Plan

[illegible]

[illegible]

No.	Components/Activities	1998		1999				2000				2001				2002				2003			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Integrated Coastal Zone Management																							
5.1	Establishment of WG and meetings						X		X		X		X		X		X		X		X		X
5.2	Regional training workshops																						
5.3	Establishment of national working groups																						
5.4	Design model ICZM studies																						
5.5	Prepare model ICZM studies																						
5.6	Review GIS at regional level																						
5.7	Design regional GIS network																						
5.8	Prepare national GIS information																						
5.9	Prepare regional GIS information																						
Public Awareness and Participation																							
6.1	Establish WG and meetings				X		X	X			X		X		X		X		X		X		X
6.2	Produce & disseminate PA materials																						
6.3	Develop Micro-Grant Programme																						
6.4	Organise workshops & initiate dialogue																						
6.5	Assess & NGOs participation																						
Monitoring & Evaluation of Prog. Impacts																							
7.1	Define performance & progress indicators																						
7.2	Develop model annual report																						
7.3	Design a monitoring programme																						
7.4	Conduct regular monitoring and evaluation											Mid-term Eval.								Final Eval.			

ANNEXES

- ANNEX 1: INCREMENTAL COST ANALYSIS AND INDICATIVE BUDGET
- ANNEX 2: LETTER OF COUNTRY ENDORSEMENT BY DESIGNATED OPERATIONAL FOCAL POINT
- ANNEX 3: TECHNICAL REVIEW
- ANNEX 4: TABLE OF REGIONAL ENVIRONMENTAL THREATS
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- ANNEX 6A: TABLE OF SITE-SPECIFIC DESCRIPTIONS AND PRIORITY ACTIONS NEEDED FOR THE 13 MARINE PROTECTED AREAS IN THE REPRESENTATIVE NETWORK
- *ANNEX 6B: TABLE OF ALL KNOWN EXISTING, PROPOSED AND SUGGESTED MARINE PROTECTED AREAS IN THE REGION
- ANNEX 7: LIST OF RELEVANT, ONGOING AND PLANNED PROJECTS IN THE REGION
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- ANNEX 9: RELEVANT LOCAL INSTITUTIONS TO BE INVOLVED IN THE PROGRAMME
- ANNEX 10A: PERSGA, 1997. STRATEGIC ACTION PROGRAMME OF THE RED SEA AND GULF OF ADEN - EXECUTIVE SUMMARY (PREPARED WITH SUPPORT FROM GEF-PDF MECHANISM, JOINTLY IMPLEMENTED BY UNDP, UNEP, WORLD BANK)
- *ANNEX 10B: PERSGA, 1997. STRATEGIC ACTION PROGRAMME OF THE RED SEA AND GULF OF ADEN - FULL DOCUMENT WITH TRANSBOUNDARY DIAGNOSTIC ANALYSES.
- *ANNEX 11: COUNTRY REPORTS OF DJIBOUTI, EGYPT, JORDAN, NORTHERN COAST OF SOMALIA, SAUDI ARABIA, SUDAN AND YEMEN (PREPARED UNDER THE PDF PHASE OF THE SAP - EXCEPT SAUDI ARABIA)
- ANNEX 12: LIST OF ABBREVIATIONS AND ACRONYMS

* Materials available upon request.

INCREMENTAL COST ANALYSIS

Regional Context and Broad Development Goals

In the last three decades, many countries in the Red Sea and Gulf of Aden Region have had to address the consequences of war, civil strife, drought and famine, as well as the challenges of environmentally and socially sustainable development. In addition, demographic changes and pressures have remained major constraints. During this same period, the countries of the Region have included among the lowest in per capita income, while some have had good rates of economic growth, and one has a very high record of providing donor assistance. In spite of these significant economic, social and political differences, the countries of the Region share several environmental problems and threats. These shared concerns have provided a firm justification for regional collaborative efforts.

The Red Sea and Gulf of Aden Region, with its characteristic arid coastal zone, contains some of the world's most unique and diversified coastal and marine environments and resources. The topography ranges from nearshore, protected shallows, to exposed sandy and rocky shorelines, to depths of over 2,000 meters, giving rise to complex ecosystems and high biological diversity. Extensive mangroves, seagrass and macro-algal beds occur in the Region, forming highly productive habitats for unique species assemblages. The great variety of reef types in the Red Sea is astounding. The diversity of corals, with many species found only in the Red Sea, is greater than anywhere else in the Indian Ocean. Endemism at generic, species and sub-species levels in the Red Sea is extremely high, especially among reef fishes and reef associated invertebrates. Over 1,300 species of fishes have been recorded from the Red Sea, which is more than any other enclosed sea. The Gulf of Aden, one of the biologically least known branches of the Indian Ocean, is heavily influenced by seasonal upwelling and contains fishery resources of global importance.

Development activities in the Region are heavily concentrated in coastal areas and depend on a combination of fragile terrestrial and marine resources. While the coastal and marine environments of the Region are globally among the least disturbed, its living and non-living resources are under increasing jeopardy. The Red Sea is one of the busiest marine transport regions of the world—estimated at 60 tankers daily. The risk of maritime pollution and environmental degradation is paramount and increasing due to the rapidly expanding energy development and maritime activities. Throughout the Region, fisheries are under pressure from over-exploitation, and in some areas, illegal fishing is causing serious impacts. Coastal habitat is being converted to urban and industrial development and limited freshwater resources are under intense pressure. Tourism and recreational use are expanding quickly in the coastal areas of some countries, especially adjacent to coral reef areas. The basic social needs of many coastal communities are yet to be met.

These shared concerns and threats have provided a firm justification for regional collaborative efforts and integrated approaches. The key institutional framework for regional environmental co-operation consists of the Jeddah Convention and the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA). The Jeddah Convention of 1982 was the result of a UNEP supported regional inter-governmental conference which also adopted a Programme for the Environment of the Red Sea and Gulf of Aden. PERSGA serves as the official regional organisation responsible for the development and

implementation of regional programmes for the protection and conservation of the marine environment of the Red Sea and Gulf of Aden.

PERSGA has been the main driving force for the development of the Strategic Action Programme for the Red Sea and Gulf of Aden (SAP), supported by the PDF mechanism of the GEF and other contributions. The SAP presents an overview of the environmental trends and threats on a regional basis and recommends a programme of complementary “preventive” and “curative” actions to address current and emerging issues. It delineates key measures for institutional strengthening, human resource development and expansion of public awareness at the regional, national and local levels. The SAP also reviews opportunities for the mobilisation of domestic and international resources, both public and private, to undertake the programme. These findings and recommendations, as well as the entire process of the SAP, have been endorsed officially by the Ministerial level PERSGA Council. The PERSGA Council has also delegated responsibility to the PERSGA Secretariat to work with donor organisations and countries to develop projects stemming from the SAP.

Baseline

PERSGA and the co-operating countries would continue to work on a limited scale within the framework of the Jeddah Convention to address regional environmental issues and would take a limited number of actions to implement the SAP. PERSGA would provide a forum for periodic meetings to discuss transboundary issues and common problems concerning the coastal and marine environment. Implementation of the SAP would focus on a number of small-scale regional activities and a series of independent national level activities. The majority of support for the management and conservation of coastal and marine environments in the Region would continue to be on a national basis, which significantly limits the ability of PERSGA and the co-operating countries to effectively address major transboundary environmental issues. This is especially the case with regard to the management of navigation risks and their associated maritime pollution, living marine resources, and Marine Protected Areas, all of which require effective co-operation at the regional level. In addition, the adoption and implementation of Integrated Coastal Zone Management would remain a major common problem since co-ordinated actions to manage this zone are critical to effectively addressing issues related to navigation, living marine resources and Marine Protected Areas. Support for regional activities by international financial institutions and donor organisations would continue to be restricted to conferences and training courses. International support for environment and natural resources activities may continue at current levels and be focused on addressing national and local issues.

Global Environmental Objective

The global environmental objective of the proposed project is to support the conservation of the unique coastal and marine environment of the Red Sea and Gulf of Aden. This would be accomplished by GEF provision of catalytic support for incremental costs associated with implementation of the SAP, which provides a sound technical basis for a prevention oriented project to address priority activities, consistent with the guidance for GEF Operational Programme Number 9, “Integrated Land and Water Multiple Focal Area Operational Programme.” The objective of this Operational Programme is to support “better use of land and water resource management practices on an area wide basis.” Under this Operational

Programme, activities are supported which have an “area wide focus, and with biodiversity considerations often included in project objectives, more proactive interventions aimed at the protection of international waters with important biodiversity are common.” A major focus of this Operational Programme is support of measures for “prevention of damage to threatened waters...” and these focus on “preventive measures to address threats rather than remedial, highly capital intensive measures.”

GEF Alternative

The GEF alternative would support a proposed project to “operationalize [a] sustainable development strategy” for the Red Sea and Gulf of Aden. This would be accomplished through GEF support to facilitate key measures for implementation of the SAP, combined with additional resources from a large number of domestic and international sources. The participation of GEF would provide support for incremental costs needed to remove barriers to implementation of the SAP, including additional transaction costs for joint planning activities, development of common approaches to sectoral policies, data collection and analyses, and co-ordination of efforts among the participating countries. Consistent with the objectives of the GEF, the proposed project supports complementary policy and technical measures on a regional basis for the reduction of navigation risks and associated maritime pollution; management of important living marine resources which are shared by the co-operating countries; development of a network of representative Marine Protected Areas to conserve unique biodiversity; and support for Integrated Coastal Zone Management to protect the critical interface between the terrestrial and marine environments.

The proposed project, consistent with GEF guidance, would contribute significantly to the “reduction of stress to the international waters environment” in this region and support PERSGA and the co-operating countries in “making changes in their sectoral policies, making critical investments, [and] developing necessary programmes” to achieve these objectives. The long-term commitment on the part of the concerned governments is demonstrated by the Jeddah Convention, support for PERSGA, participation in the SAP Task Force, and a direct role in the Country Reports and Regional Studies which co-operatively identified priority actions. The support of GEF will play an important catalytic role in the project, and the participation of the European Community, international financial institutions, donors and the private sector will also contribute to this multi-country and multi-stakeholder effort. The emphasis in the individual project components on the evaluation of sustainable mechanisms for self-financing of a number of activities would contribute to the long-term financial sustainability of project initiated actions.

The GEF alternative would support a regionally led initiative to promote the management and conservation of the coastal and marine resources of the Red Sea and Gulf of Aden. It would greatly facilitate the ability of PERSGA and the co-operating countries to address transboundary environmental issues and common natural resources management concerns at the regional level. The GEF alternative would allow for the realisation of a dynamic action oriented work programme for implementation of the SAP, to be undertaken on an accelerated basis with support from a variety of sources. These goals would be realised through support for the following specific project objectives:

1. *Institutional strengthening to facilitate regional co-operation*
This project component will strengthen PERSGA's capacity in policy planning, programme management and regional co-ordination, which are essential for the effective implementation of the SAP. It will make use of active participation of national and regional expert groups in fulfilling PERSGA's responsibilities in the SAP, hence further enhancing regional co-operation and technical transfer among the countries involved. The component will also provide technical support to the national PERSGA focal points, facilitating the effective implementation and co-ordination of programme activities at the national level.
2. *Reduction of navigation risks and maritime pollution*
This component places emphasis on cost-effective preventive measures to reduce navigation risks in the Region, including Port State Control, Traffic Separation Schemes, Vessel Traffic Systems, navigation aids, and supportive training and awareness promotion. The project will capitalise on the PERSGA Navigation Working Group which supported the preparation of the Navigation Risk Assessment and Management Plan for the Region.
3. *Sustainable use and management of living marine resources*
This component is designed to develop strategies for the management of transboundary living marine resources, including threatened or endangered migratory species. The component will strengthen the capacity for management and monitoring of the resources through technical assistance and training. Special effort will be made to promote the participation of fishermen in these activities. Support will be provided to develop the legal and institutional framework for regional co-operation in the management of transboundary resources.
4. *Development of a Regional Network of Marine Protected Areas (MPAs)*
During the SAP process, thirteen declared and proposed/suggested MPAs, representing different ecosystem types and biodiversity richness and uniqueness, have been identified as regionally or globally important. The proposed component will emphasise institutional and capacity building, including resource mobilisation, for effective management of these MPAs. It will focus on these priority sites while at the same time retaining a regional approach in planning, management and provision of training.
5. *Support for Integrated Coastal Zone Management (ICZM)*
This component will enhance the exchange of lessons learnt between countries at different stages of practising ICZM, and provide cost-effective regional training in related fields, including environmental assessment, monitoring and evaluation. It will also aim at reinforcing the capacity of national and local governments, including environmental and other sectoral ministries, in developing and implementing ICZM. Effective national ICZM will contribute to the management of the globally significant coastal environments and biodiversity of the Region.
6. *Enhancement of public awareness and participation*
This component will promote broad-based public awareness initiatives, facilitate dialogues among local environmental NGOs, community groups, private sector and the Governments. The activities of this component will be developed in line with the

thematic areas of maritime pollution, sustainable use of living resources and coastal zone management, and will provide support for other components of the project.

7. *Monitoring and evaluation of programme impacts*

This component will develop regional, standardised procedures with specified indicators to monitor and evaluate progress and impacts of the different components of the programme in line with the evolving GEF monitoring and evaluation guidance. This is essential for the insurance of effective project implementation and provides timely warning for needed adjustments and improvements.

System Boundary

The time boundaries for this project are the five year project period during which it will be implemented. Some of the benefits will clearly continue to accrue beyond this time boundary. However, all the listed benefits will be achieved during the five year implementation period.

The geographic boundary of the project is defined by the area of the Jeddah Convention, which includes the Red Sea and the Gulf of Aden.

The issues to be dealt with within the boundary of the project are:

- (a) inadequate institutional capacity for the management of transboundary environmental issues;
- (b) navigation risks and maritime pollution;
- (c) exploitation of living marine resources;
- (d) lack of management capacity for Marine Protected Areas of regional/global importance;
- (e) coastal habitat destruction and environmental degradation;
- (f) low public awareness and participation in environmental and resource management; and
- (g) lack of recognised methodology for project monitoring and evaluation.

The design of the proposed project has taken into full consideration its complementarity with other existing projects in the Region and is developed to maximise regionality and holistic management by ecosystems and issues.

Incidental Domestic Benefits

While PERSGA has made a good start in regional co-operation, significant support over the short and medium-term is required to overcome institutional, human resource and information barriers to successful management of transboundary and common environmental issues in the Red Sea and Gulf of Aden. Over the long-term, a variety of domestic benefits would occur through implementation of the proposed project; however, these benefits would not be realised without critical catalytic transitional support from GEF. The most valuable domestic benefits to be gained from the project are associated with substantially strengthened institutional and human capacity in environmental planning, natural resources management and regional co-operation. Long-term domestic benefits associated with the proposed project would include the reduction of navigation risks in international and national waters of the

Region. This would result in lower shipping costs and obviate the need for major expenditures for emergency management and clean-up activities. Potential domestic benefits from measures for the management of living marine resources and Marine Protected Areas would be realised only after project supported activities are fully adopted and used as the basis for management programmes. In the case of coastal zone management, benefits may be realised in the medium-term through implementation of decisions which improve spatial planning and avoid unsustainable development patterns in these fragile area. These benefits would be significantly greater if, as planned under the project, there is support for widespread adoption of Integrated Coastal Zone Management throughout the Region.

Costs

The incremental costs required to achieve all outputs of the project amount to US\$ 36,606,000, of which **US\$ 19,000,000** is being sought from the GEF. The GEF contribution will be allocated as follows:

	<u>Project Component</u>	<u>US\$</u>
1.	Institutional strengthening for regional co-operation	2,315,000
2.	Reduction of navigation risks and maritime pollution	3,500,000
3.	Sustainable use and management of living marine resources	3,366,000
4.	Development of a Regional Network of MPAs	3,270,000
5.	Support for ICZM	2,110,000
6.	Enhancement of public awareness and participation	2,546,000
7.	Monitoring and evaluation of programme impacts	496,000
	<i>Project Support Cost</i>	<i>1,390,000</i>
	TOTAL	19,000,000

Incremental Cost Matrix

See below.

Agreement

The technical contents of the project, including the incremental cost analysis, have been negotiated with the Governments of Djibouti, Egypt, Jordan, Saudi Arabia (non-GEF funding), Sudan and Yemen, and the local authorities of the northern Somalia coast.

Incremental Cost Matrix and Calculation

Project Component	Cost Category	Cost (\$million)	Domestic Benefits	Global Environmental Benefits
1. Institutional Strengthening for Regional Co-operation	Baseline	4.842	Most countries in the Region have some forms of institutional framework including national legislation, environmental strategies and projects, for the protection of their own coastal and marine environments.	The key existing regional environmental framework is the Jeddah Convention which is implemented by the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA).
	Alternative	8.195	Effective implementation of national activities within the SAP and integration of these environmental activities into national policies and investment programmes. Strengthened institutional and human capacity through training and active involvement of national experts in the SAP.	A greatly strengthened regional body and enhanced regional co-operation essential to the effective implementation of the SAP and its global environmental objectives.
	Increment (GEF)	3.353 (2.315)		
2. Reduction of Navigation Risks and Maritime Pollution	Baseline	94.895	Few countries have ratified MARPOL and no regional agreement has been developed on Port State Control. Navigation aids have been installed at main traffic lanes and port entrances, but they are few and poorly maintained. Most but not all countries have national oil spill contingency plans. Some training for preparedness and combating of oil spills, and port management at national levels but far from adequate.	Weak implementation of existing protocols and an absence of a Regional Agreement of Port State Control. Reduction of navigation risk at the entry of the Gulf of Suez and Strait of Tiran through installation of planned Vessel Traffic Systems (VTS); however, major risks would occur in the southern Red Sea where a Traffic Separation Scheme (TSS) is needed and in the Bab al Mandab which requires a VTS. Hazardous navigation conditions in the vicinity of some ports due to weak rules, limited training of staff and outdated charts. Regional co-ordination for oil spill response remains underdeveloped.

Project Component	Cost Category	Cost (\$million)	Domestic Benefits	Global Environmental Benefits
	Alternative	98.459	Reduced local navigation risks and maritime pollution. Ratification and implementation of international conventions would support improved navigation and safety standards. Support provided for development and implementation of Port State Control, preparation of updated port rules, and training of specialised personnel. Improved TSS, communications, navigation aids, charts and emergency procedures for major ports in the region would reduce local risks. Working Group would share lessons learnt and disseminate good practices at the national level.	Major reduction in risks of global/regional environmental degradation from maritime traffic and pollution through establishment and implementation of an effective “prevention” oriented programme. Technical co-ordination of the programme by a Regional Working Group which can conduct activities beyond the life of the project. Key benefits would include: expanded ratification of international conventions; development of a Regional Agreement on Port State Control and training of personnel to implement this agreement; establishment of a TSS and VTS to reduce risks in the southern Red Sea and Bab al Mandab; preparation of national and port oil spill contingency plans; strengthened regional and sub-regional co-operation for emergency management; and identification and dissemination of good practices. Provides a model which can be replicated in other areas.
	Increment (GEF)	3.564 (3.500)		
3. Sustainable Use and Management of Living Marine Resources	Baseline	43.665	Stocks assessment information is lacking, limited or out dated in most countries. National fisheries legislation exist in all countries but capacity for enforcement is weak in most cases. Traditional management practices are retained in some areas.	Threatened and endangered migratory species are protected on a very small scale by some local traditions which prevent hunting of turtles and dugongs, or killing of sharks for their fins only. Assessment of transboundary stocks is practically non-existent.
	Alternative	56.703	Increased baseline information and strengthened national capacity for sustainable marine resource management.	Sustainable use of transboundary stocks building on sound stocks assessment, region-wide monitoring and management plans. Conservation of threatened and endangered species emphasising public awareness and participation.
	Increment (GEF)	13.038 (3.366)		
4. Development of a Regional Network of Marine Protected Areas (MPAs)	Baseline	37.000	All countries in the Region have designated MPAs, but they are few and only one or two of them are adequately managed. Many of the current and/or proposed protected areas are under high pressure from fishing and tourism. Others are at risk from navigation and development activities in the adjacent area.	One MPA of regional importance is adequately managed.

Project Component	Cost Category	Cost (\$million)	Domestic Benefits	Global Environmental Benefits
	Alternative	45.402	Strengthened capacity to manage individual MPAs. Well managed MPAs may benefit fishermen nearby in the long run, and may generate alternative income such as tourism.	A network of adequately managed MPAs of global/regional significance , supported by both government and community commitments, scientifically sound management strategy and capability, and sustainable financing mechanisms. System of MPAs provides a model which can be replicated in other areas
	Increment (GEF)	8.402 (3.270)		
5. Support for Integrated Coastal Zone Management	Baseline	55.898	Poorly co-ordinated development of valuable coastal zones predominates in most countries of the Region and institutional capacity to address these issues is weak. This results in unnecessary degradation of important coastal habitats with significant adverse secondary impacts on marine habitats. Inadequate consideration of environmental issues in coastal zone development results in insufficient investment in management of water, wastewater and solid waste. Tourism is often developed without attention to impacts and infrastructure requirements.	None
	Alternative	58.308	Strengthened institutional and human capacity in each country to develop and implement national ICZM.	Adoption of common regional approaches to ICZM results in reduced environmental degradation and loss of coastal habitats for migratory species and global biodiversity; by catalysing the development and implementation of national ICZM through regional training, exchange of lessons learnt and sustainable financing. Supportive environments provided for components 2, 3 and 4.
	Increment (GEF)	2.410 (2.110)		
6. Public Awareness and Participation	Baseline	4.100	Highly varied extent and effectiveness of public awareness programmes in different countries of the Region. Several of the countries have active environmental NGOs. Public participation in resource management and coastal development decisions is generally weak.	Regional issues are rarely covered by awareness programmes in the Region.

Project Component	Cost Category	Cost (\$million)	Domestic Benefits	Global Environmental Benefits
	Alternative	6.646	Increased environmental awareness at the national and community levels. Local environmental NGOs and community groups obtain grants to carry out micro-projects.	Increased public awareness and support for regional environmental issues. Enhanced overall effectiveness of environmental awareness programmes by the organisation of region-wide concerted activities, and exchange of lessons learnt through an active regional network of NGOs and community groups.
	Increment (GEF)	2.546 (2.546)		
7. Monitoring and Evaluation of Programme Impacts	Baseline	30.594	Limited, relevant data in restricted locations available as part of the baseline for subsequent monitoring and evaluation.	None
	Alternative	32.490	Standardised methodology and indicators for each country to monitor environmental, resource and social trends and to evaluate the impacts of the project. Results of this process will help improve the effectiveness of this project and other related environmental initiatives in the countries.	Effectiveness of the project is monitored, thus allowing continuous efforts or improvements to achieve global environmental objectives through the SAP . Credibility of the project will leverage further support and commitment for other environmental initiatives for the Region.
	Increment (GEF)	1.896 (0.496)		
Project support services	Increment (GEF)	1.397 (1.397)		
Totals	Baseline	270.994		
	Alternative	307.600		
	Increment (GEF)	\$36.606 (\$19.000)		

Footnotes to Incremental Cost Matrix:

Sources of Non-GEF funding that contribute to the baseline costs include the Danish, Dutch, German, Japanese, US and Saudi Arabia Governments, the Governments of the participating countries, and multi-lateral donors and international agencies including the EU, IFAD and World Bank. The list of projects relevant to the different components of the proposal is presented in Annex 7.

Sources of Co-financing that contribute to the incremental costs of the programme include contributions under negotiation from the participating countries, European Commission, Islamic Development Bank, Japan , Kingdom of Saudi Arabia , PERSGA and UNDP.

TECHNICAL REVIEW

DJIBOUTI, EGYPT, JORDAN, SAUDI ARABIA, NORTHERN SOMALI COAST, SUDAN, YEMEN: IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAMME (SAP) FOR THE RED SEA AND GULF OF ADEN

**MEMBER OF STAP ROSTER OF EXPERTS
DR. RICHARD KENCHINGTON
EXECUTIVE DIRECTOR
GREAT BARRIER REEF MARINE PARK AUTHORITY**

1. Overall impression

I find that this is a well considered and comprehensive proposal which provides an excellent basis for addressing conservation, sustainable use and management of natural resources in a global region of great significance in terms of economic and biodiversity considerations.

2. Relevance and priority

The proposal has been developed within the framework of the Jeddah Convention. Executed successfully it would deliver substantially on the objectives of that Convention at the regional and at the participating national levels. I am not well informed about established national priorities, although the PERSGA process appears to address them directly. If the project is implemented successfully it would address priority issues in terms of securing the natural resource base and long term sustainability of resource use of the nations of the region.

3. General Approach

I consider that the general approach is appropriate and that the systematic and consultative way in which it has been developed is an important element which should be continued strongly in the implementation phase.

There are several relatively minor issues and opportunities which are mentioned against the relevant project component or output numbers.

2.1 This is an important element. There may be merit, as the programme develops, in looking at a regional approach to IMO regarding possible identification of Particularly Sensitive Areas to be avoided by shipping and of compulsory vessel reporting to minimise the risk of shipping traffic accidents.

3.1 The concept of sustainable management of living resources appears to have been solely limited to fisheries. I consider that it should also be integrated or linked to other non-harvesting uses such as tourism.

3.2 Following from the point above, my major concern is that the sustainable management and transboundary considerations focus on harvested or potentially harvestable species with no specific consideration of their habitat or of associated but non-target species. The habitat and associated species may well have important ecological linkages to the ability of the environment to sustain production of those species which are harvested. If such factors are not considered there is unnecessary and unpredictable risk of fishery collapse.

It is also relevant to note that in a relatively enclosed marine environment such as the Red Sea there are many life cycle linkages which extend across national boundaries even though use or harvest of adult species may occur within single jurisdictions.

4. Marine Protected Areas.

The program is well thought out. Consistent with my earlier comments, I am concerned that MPAs may be being considered in isolation from fisheries management. In keeping with the ICZM focus of the project and in recognition of the FAO Code of Practice for Responsible Fisheries it is important that MPAs be considered also in the context of reference areas, sanctuaries and sensitive life-cycle stage protection of marine living resources in the broad sense. It is important that MPAs are seen as part of the integrated whole not as a use competing with resource harvest.

7. Development of Monitoring and Evaluation.

The project is ambitious and it is inevitable that rates of progress and success will vary between project elements and projected timelines. This will need some degree of consultative flexibility to consider and reorder priorities in response to experience and success. I would advocate that in addition to the formal project evaluation process needed for contributor project monitoring, there also be a small expert technical advisory group. Such a group would be informed on but not directly involved in the project and could act as a mentor group to provide advice to project managers on issues relating to changing project circumstances or relative priorities.

4. Objectives

The project objectives are valid and generally well focused. Subject to earlier comments on the need for dynamic management of the scale and ambition of the programme I consider that the objectives can be achieved.

5. Background and Justification

The background information is reasonable for the scale of the project and establishes the justification and urgency. It is clear that such a project must be undertaken in order to address increasingly important issues of conservation and sustainability of marine resources on a regional and national scale.

6. Activities

The list of activities is comprehensive. Clearly the timing and rate of conduct of individual activities will depend upon the development of capacities and skills. The sequencing is not spelt out in detail but the conceptual design is systematic and provides a solid basis for effective and responsive project management.

7. Project Funding

I have little experience of costs and consequent funding needs for activities in the Red Sea region. With that qualification and against my experience in other areas the cost structure appears to be reasonable.

8. Timing.

The project has many objectives, many can be achieved within the time-frame. Others establish the early steps in what will have to be an ongoing, indeed perpetual, framework for

sustained conservation and use of living marine resources. Some objectives depend on achieving earlier objectives in the area of community education and information sharing. The program will consequently have to be dynamic in order to respond to actual progress and to maximise achievements in the light of progress.

9. Rationale for GEF Support

I consider the proposal establishes a strong case for GEF support under the criteria.

10. Summary

I consider this to be a well developed proposal. It addresses issues of major importance in an area of great global significance. The project is ambitious and its management would need to be dynamic to respond to changing circumstances and progress. The progress achieved by the PERSGA partners in developing the proposal to this stage is impressive. I consider that it demonstrates a solid basis for developing fuller regional collaboration through implementation of the proposal. In a project in this area and of this scale there is an inevitable element of risk, but there are good prospects for success in many if not most objectives. I advocate support of the project.

TABLE OF REGIONAL ENVIRONMENTAL THREATS

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Habitat Destruction:					
Coastal development	Extensive dredging and filling; change of currents and coastal processes; destruction of coral reefs, intertidal areas, lagoons, seagrass beds and sabkhas	Large-scale urban and industrial development; port development and maintenance dredging; tourist development	Inadequate environmental planning guidelines for coastal development. Lack of enforcement. Limited use of environmental assessment. Limited awareness	Localised, throughout the region; concentrated in urban, industrial, tourism areas and free zones	Moderate to severe
Beach mining and quarrying	Disturbance of sandy beaches, increased sedimentation, smothering of seagrass and corals	Sand collecting and quarrying for coral rock	Lack of regulations, and lack of enforcement	Localised	Low to moderate
Mangrove destruction	Deterioration of mangrove habitats; decreased fish and shrimp catches; reduced water quality; coastal erosion	Landfill, camel grazing, wood collection, shrimp farm construction, decreased freshwater supply	Mangroves exist under sub-optimal conditions; lack of regulations and management, lack of awareness, damming of wadis and rivers; increased population pressure	Regional	Moderate to severe
Destruction of seagrass beds and other subtidal habitats	Signs of physical disturbance; loss of seagrass-associated species	Trawling, including illegal trawling by foreign vessels; coastal dredging and filling; release of untreated waste waters from municipalities and shrimp/fish farms	Lack of adequate regulations and enforcement; limited awareness; limited knowledge of seagrass distribution	Localised, adjacent to urban and industrial areas; trawling impacts severe in Gulf of Suez, southern Red Sea and Gulf of Aden	Moderate to severe
Physical damage to coral reefs	Loss of coral habitat by collision and removal; indirect impacts through siltation; declining reef-associated fauna	Anchor damage, coral mining, ship groundings	Poor navigational control systems and error; lack of moorings; lack of awareness; inappropriate mining operations; inadequate training	Regional	Moderate to severe
Damage to coral reefs by visitors	Coral breakage by visitors; decrease in live coral cover; decline in reef-associated fauna; presence of solid waste	Trampling of shallow reef flats, breaking of corals, collecting of marine souvenirs; anchor damage	Lack of education about sensitivity of marine ecosystems; lack of management; lack of enforcement	Northern Red Sea and western Gulf of Aden; problem anticipated to spread region-wide	Moderate to severe

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Exploitation of Living Marine Resources:					
Overfishing of finfish for local and export markets	Decline in landings, decrease in average size	Increased fishing efforts, landing beyond Maximum Sustainable Yield	Lack of stock assessment and reliable statistics hampers fisheries management. Mangroves destroyed. Lack of surveillance and enforcement of existing regulations	Regional	Moderate to severe
Capture of sharks for sharkfin market, frequently in areas beyond territorial waters	Decline in shark stocks. Other impacts include by-catch of turtles, dolphins and finfish	Increased fishing effort, use of nets in shark fisheries, high profits	Lack of surveillance and enforcement of existing regulations. Expanding demand outside the Region for shark fins	Regional	Severe
Overfishing of shrimp and lobster for export markets	Decline in catches, decrease in average size	Increased fishing effort, illegal fishing	Lack of monitoring and enforcement of existing regulations. Lack of stock assessment hampers resource management. Destruction of nursery habitats (mangroves and seagrasses). Illegal trawling	Gulf of Aden and southern Red Sea	Severe
Overfishing of cuttlefish for export markets	Decline in catches	Fishing effort beyond Maximum Sustainable Yield, improper fishing practices	Lack of monitoring and enforcement of regulations. Lack of trained staff for surveillance	Gulf of Aden	Severe
Overfishing of <i>Strombus</i> for local markets	Decline in landings	Increased fishing efforts	Lack of stock assessment hampers resource management	Southern Red Sea	Severe
Overfishing of sea cucumber for export markets	Decrease in average size	Increased fishing efforts in limited areas	Lack of stock assessment hampers resource management	Southern Red Sea and Gulf of Aden	Low to moderate
Turtle capture and egg collection by local fishermen and communities; sale of shells to tourists and for export	Decrease in nesting populations	Need for subsidiary food supply in areas of poor fish resources. Economic returns from sales to tourists. By-catch of turtles in fisheries. Lack of turtle-excluding devices	Lack of public awareness, lack of alternative food sources. Lack of enforcement and stock assessment. Lack of protection of eggs from stray dogs	Southern Red Sea and Gulf of Aden	Severe
Collection of corals and molluscs for souvenir trade	Breakage of corals and decline of live coral cover; decline in reef-associated fauna	Unregulated collection of corals and molluscs	Expansion of tourism; lack of awareness; lack of regulations and enforcement	Regional, especially the central and southern Red Sea	Moderate to severe

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Ornamental fish collection for export	Potential decrease in reef fish populations, damage to the reef	Potential overfishing of individual species, destructive fishing methods	Lack of stock assessment, monitoring and management. Lack of collector training	Localised, throughout the Region	Presently low
Conservation of marine mammals (especially dugong)	Potential decline in populations (dugong as an endangered species)	Accidental capture in fisheries	Lack of awareness	Regional	To be determined
Spearfishing	Decline in size and stocks of reef fish; reef fish avoid divers	Indiscriminate spearing of many species of reef fishes, of all sizes; often in dive sites	Lack of enforcement of existing regulations. Lack of relevant legislation in some countries	Localised, throughout the Region	Locally severe
Shrimp and fish farming	Irreversible conversion of coastal habitats; mangrove destruction; declining water quality; modification of coastline	Pond construction; mangrove destruction resulting in reduced water quality; use of chemicals, hormones and nutrients	Lack of regulations and poor planning	Currently localised with a growing potential throughout the Region	Severe
Navigation Risks and Maritime Transport:					
Regional navigation risks	Extensive and routine risks of ship collisions and groundings in major international traffic lanes	Limited navigational devices and poorly separated traffic; weak regional co-ordination on navigation issues; inaccurate navigational charts	Complex navigational hazards combined with heavy maritime traffic, including large-scale movement of oil and other cargoes	Regional, with serious issues in the Gulf of Suez, Gulf of Aqaba and the Bab al Mandab	Moderate to severe
Local navigation risks	Extensive and routine risks of ship collisions and groundings in approaches to major and minor ports, oil loading facilities and near coral reefs	Limited navigational devices and poorly separated traffic; weak regional and national co-ordination on navigation issues; inaccurate navigational charts; increasing local traffic by small vessels	Complex navigational hazards due to limited depth of shipping channels and approaches to ports. Large volumes of maritime traffic which includes a variety of vessels operating with a wide range of safety standards	Significant problems in areas of major ports and key oil loading facilities. Anticipated to become a concern in areas adjacent to proposed free ports and free zones.	Moderate to severe

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Petroleum and Mineral Development and Transport:					
Oil and gas exploration and production	Construction debris; tar balls and slicks on beaches and in water	Capped wells as a navigation hazard; seepage of oil; production emergencies including blow-outs; pipeline breakages	Normal risks associated with oil exploration and production, made worse by poor operator performance and poor field procedures	Gulf of Suez, northern Red Sea and southern Red Sea	Moderate to severe
Small oil spills (< 20 tons)	Beach contamination, damage to coastal and marine biota	Discharge of ballast and bilge water, bunker oil spill	Lack of reception facilities at ports; inadequate control, lack of enforcement	Localised, throughout the region	Moderate
Medium oil spills (< 100 tons)	Beach contamination, damage to coastal and marine biota	Discharges from pipelines or terminals, small accidents at sea	Inadequate control and monitoring of procedures, equipment and personnel. Inadequate training	Localised, throughout the region	Moderate to Severe
Potential large oil spills and disasters	Destruction of coastal and marine habitats and biota, devastation of beaches	Rupture of oil tanks in collision or wreckage	Insufficient tanker safety specifications. Poor navigation aids	Localised, throughout the region	Severe
Industrial Activities:					
Surface and groundwater use	Excessive exploitation for industrial use and cooling; re-allocation to industrial uses; draw-down of limited groundwater resources; saltwater intrusion into coastal aquifers	Use of industrial technology often with inadequate concern for water conservation and excessive pumping of groundwater resources	Allocation of limited surface and groundwater sources for industrial use with limited regard for overall usage needs and inadequate pricing; lack of incentives for water conservation; poor regulation of water exploitation	Regional, especially in coastal urban areas	Moderate to severe
Industrial chemical spills	Health risk, potential damage to marine life	Accidental spill during transport, storage or use of chemicals	Inadequate monitoring and control of hazardous substances	Localised, vicinity of chemical industrial installations	Moderate to severe
Cooling water discharges	Increased temperatures, alteration of marine environment	Release of high temperature cooling waters from power plants, industries and desalinisation plants	Inadequate thermal pollution control standards	Localised in the vicinity of power plants, industries and desalinisation plants	Low
Hypersaline water discharges	Increased salinity near outfalls, alteration of marine environment	Release of hypersaline water from desalination plants	Inadequate salinity control standards	Localised, vicinity of seawater desalination plants	Low
Phosphate dust emissions	Decreased coral growth	Release of phosphate dust during port operations	Inadequate pollution control standards, monitoring and enforcement	Local	Low

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Industrial pollution	Decline in water quality, marine life affected	Chronic release of pollutants	Lack of regulations and enforcement. Inadequate technology	Localised in the vicinity of industrial zones and at individual facilities	Presently moderate
Pollution from cement factories	Consolidation of beach sands. Altered coastal and marine sediments. Hampered turtle nesting	Deposition of cement dust	Lack of controls and inadequate technology	Localised	Severe
Waste oil disposal	Soil and groundwater impacts	Improper disposal of used motor oil, use of oil as dust suppressant	Lack of proper oil disposal or recovery options; lack of effective regulations and enforcement	Localised, throughout the region	Moderate to severe
Urban and Tourism Development:					
Surface and groundwater	Excessive exploitation of surface and groundwater for municipal use; re-allocation of surface water to municipal uses; draw-down of limited groundwater resources; saltwater intrusion into coastal aquifers	Use of water distribution and household systems often with inadequate concern for water conservation and excessive pumping of groundwater resources	Allocation of limited surface and groundwater sources for municipal use with inadequate regard for conservation measures including maintenance of distribution systems and household plumbing; inadequate pricing of water; lack of incentives for water conservation	Regional, in municipal areas	Moderate to severe
Urban land use	Destruction of coastal areas and adjacent marine habitats	Extensive development of coastal areas often with limited regard to availability of water resources; inadequate infrastructure and development in areas with fragile coastal ecology	Inadequate development planning and coastal zone management; lack of co-ordination between ministries; limited enforcement of regulations	Regional	Moderate to severe
Discharge of untreated or insufficiently treated sewage (municipal, hospital, slaughter house)	Raised water table, groundwater impacts, eutrophication and alteration of marine environment, threats to public health	Lack of sewage treatment plants or lack of maintenance of existing sewage treatment plants	Inadequate pollution control regulations, monitoring and enforcement	Localised in the vicinity of coastal urban areas and large tourist developments	Severe

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Disposal of solid waste	Deterioration of aesthetics, alteration of coastal habitats, physical damage to coastal and marine life; contamination of groundwater from landfill	Improper garbage disposal, beach litter	Lack of adequate waste disposal regulations and enforcement, inadequate public awareness	Localised in the vicinity of coastal urban areas, coastal villages, tourism developments and adjacent to major shipping lanes	Moderate
Tourism development	Destruction of coastal areas and adjacent marine habitats	Intense tourism development; over-exploitation of available water resources; poor infrastructure linkages; excessive use of marine habitat; landfilling	Limited use of coastal zone planning and infrastructure planning; limited awareness of adverse tourism impacts; unregulated tourism activities and access	Regional; with current problems in the Gulf of Suez, Gulf of Aqaba and northern Red Sea. Problems are developing in the central and southern Red Sea	Low to severe
Degradation of Cultural Heritage	Direct and indirect adverse impacts to archaeological, historical and sacred sites. Destruction of unique and non-renewable cultural heritage sites in coastal areas with serious pressure on historic urban areas	Inadequate evaluation of potential impacts to cultural heritage in the planning, design, construction and operation of investments. Limited use of "chance find" procedures to address the discovery of unknown buried artifacts during construction	Lack of adequate recognition of the importance of cultural heritage, limited application of Antiquities Laws in the co-operating countries and poor integration of these concerns into the planning process	Regional, especially in coastal urban areas and along traditional transportation routes	Moderate to severe
Special Concerns:					
Illegal disposal of harmful substances	Threat to marine biota and human health	Intentional disposal of hazardous waste at sea	Lack of control mechanisms and enforcement	Southern Gulf of Aden	Severe
Sedimentation from agriculture and grazing	Depletion of vegetation cover resulting in mobilisation of formerly stabilised sand sheets and dunes; smothering of seagrass and corals	Overgrazing by livestock, especially sheep and goats	Inadequate management of coastal grazing areas; increased, unregulated access to imported feed supplements; use of tankers for supplemental water supplies	Central and southern Red Sea and Gulf of Aden	Low to moderate

Issue	Symptoms / Impacts	Immediate Causes	Root Causes	Scale	Severity
Discharge of pesticides and fertilisers	Detection of pesticides in sediments and biota, fish kills, eutrophication	Occasional run-off from agricultural areas after torrential floods; dust storms	Lack of control and management of agrochemicals	Southern Red Sea	Low
Coral die-off	Large areas of dead coral reefs, decrease in coral associated organisms and fisheries	Unknown	Unknown, but could be natural and related to unusual sea temperatures; no apparent human cause	Southern Red Sea	Severe
Pollution from shrimp and fish farming	Declining water quality	Mangrove destruction; use of chemicals and nutrients	Lack of planning, regulations and enforcement	Localised	Moderate
Marine vessel sewage	Localised marine and beach pollution	Direct discharge from ships	Inadequate on-board treatment, lack of port reception facilities	Regional	Moderate to severe
Ship discharge of solid waste	Solid waste on shoreline, mangroves, seagrass and coral reefs; aesthetic impacts on recreation and tourism; risks from ingestion to marine animals	Discharge of solid waste from ships	Inadequate disposal facilities; excessive fees for on-shore disposal; lack of awareness; inadequate surveillance and enforcement	Regional	Low to severe

TABLE OF REGIONAL PRIORITY ACTIONS

Environmental Issue	Priority Action	Scale	Emphasis	Urgency
Long-term commitment	High-level commitment by government to achieve long-term goal of conservation and sustained use of the Red Sea and Gulf of Aden	Regional National Local	Commitment Public awareness	***
Public awareness	Development and implementation of a regional programme for environmental awareness, including educational materials, media information, training	Regional National Local	Capacity building Public awareness	***
International agreements	Ratification of MARPOL Convention Civil Liability Convention (CLC) 1969 and 1992 Protocol The Fund Convention (FUND) 1971 and 1992 Protocol	International Regional National	International framework Preventive action	***
Maritime transport	Adoption of Port State Control by countries in the Region	Regional National	National framework for maritime supervision Preventive action	***
Environmental management	Strengthened capacity of Governments to regularly use environmental assessments in development decisions and project implementation	Regional National Local	Preventive action Capacity building Planning studies	***
Environmental management	Strengthened regional capacity for development and implementation of coastal zone management programmes	Regional National Local	Preventive action Capacity building Planning studies	***
Environmental management	Preparation and dissemination of guidelines for standardisation and routine updating of Geographic Information Systems data collection , input and display to allow for a compatible spatial data base	Regional National	Management information Capacity building Technical development	**
Habitat conservation	Development of a regional programme for the conservation of key bird habitats and conservation of species in the coastal and marine zones	Regional National Local	Management information Management programme Capacity building Enforcement	***
Habitat Conservation	Survey and development of conservation programme for mangrove and seagrass habitats and associated living marine resources	Regional National Local	Management Conservation Capacity Building	***
Habitat conservation	Development of institutional capacity and framework for a regional network of marine protected areas	Regional National	Management programme Capacity building	***
Living marine resources	Regional stock assessment of pelagic species and development of regional management programme	Regional National	Management information Management programme	***
Living marine resources	Development and implementation of management programme for shark fisheries	Regional National Local	Management information Management programme	***

Environmental Issue	Priority Action	Scale	Emphasis	Urgency
Living marine resources	Development and implementation of management programme for turtles	Regional National Local	Management information Management programme	***
Living marine resources	Strengthened enforcement capacity for fisheries regulations	Regional National Local	Management programme Technical development	***
Living marine resources	Development and implementation of marine mammal management and conservation programme	Regional National Local	Management information Management programme	**
Living marine resources	Development and implementation of management program for reef fisheries	Regional National Local	Management information Management programme	**
Living marine resources	Development of a regional research programme on coral reef management, including coral die off, fisheries dynamics and environmental monitoring, using indicator species	Regional	Management information Capacity building	*
Living marine resources	Development of regulations and control mechanisms for the collection of corals and shells for souvenir trade	National	Enforcement Public awareness	*
Living marine resources	Development of regulations and control mechanisms for collection of and trade in ornamental fish	Regional National	Legislative framework/ Enforcement Public awareness	*
Navigation risk	Development of improved Traffic Separation Schemes in co-ordination with IMO	Regional Sub-Regional National	Preventive action Capacity building Management information	***
Navigation risk	Development and implementation of sub-regional vessel traffic systems for Gulf of Suez, Gulf of Aqaba , Bab-al-Mandab	Sub-Regional National	Preventive action Capacity building Technical development	**
Navigation risk	Review of current navigation charts, conduct hydrographic surveys and prepare updated charts for key areas along shipping routes and in vicinity of major ports	Regional Sub-Regional National Local	Capacity building Technical development Management information	***
Navigation risk	Establishment of a radio communication network to support GMDSS	Regional Sub-Regional National Local	Preventive action Capacity building Technical development Management information	**
Navigation risk	Upgrading of existing marine navigation aids in Main Red Sea, Gulf of Aqaba and Bab-al-Mandab	Regional, Sub-Regional National	Preventive action Technical development Management information	**
Petroleum development and transport	Development and implementation of a regional oil spill contingency plan	Regional Sub-Regional National Local	Capacity building Technical development	***

Environmental Issue	Priority Action	Scale	Emphasis	Urgency
Petroleum development and transport	Expand system of Sub-Regional Marine Emergency Mutual Aid Centres by establishing the planned centre at Hurghada, in Egypt, strengthening the existing MEMAC in Djibouti and upgrading national capacities in emergency response	Regional Sub-Regional National	Capacity building Technical development Management information	***
Urban and industrial development	Increased priority for management of surface and groundwater, through technical and non-technical interventions, to promote water conservation and reuse of treated wastewater	Regional National Local	Capacity building Technical development Public awareness	***
Urban and industrial development	Increased priority for management of solid waste, through technical and non-technical interventions, including public awareness activities	Regional National Local	Capacity building Technical development Public awareness	**
Urban development	Development and implementation of measures for conservation of the rich cultural heritage of the coastal zone, including archaeological, historical and sacred sites	Regional National Local	Management information Management programme Enforcement Public awareness	***
Applied research	Preparation and dissemination of species identification guides to living coastal and marine resources of the region in a variety of languages	Regional National	Basic scientific information Capacity building Management information Public awareness	**
Applied research	Strengthening of environmental laboratory and monitoring capacity, including standardisation of sample collection, testing and reporting procedures on a regional basis	Regional National	Management information Capacity building Technical development	**

**TABLE OF SITE-SPECIFIC DESCRIPTIONS AND PRIORITY ACTIONS NEEDED FOR THE
THIRTEEN MARINE PROTECTED AREAS IN THE REPRESENTATIVE NETWORK**

Country: Protected Area	Size/ Year	Site description and regional significance	Impacts and conflicts	Proposed activities/ Priority action
Djibouti: Iles des Sept Frères and Ras Siyan	Undefined/ Suggested	Group of high aspect, rocky islands and adjacent coastal stretch with mangrove-fringed bay; diverse coral reef and rich reef associated fish and invertebrate fauna at the junction between the Red Sea and the Gulf of Aden; nesting seabirds, marine mammals	Recreation pressure presently low to medium, but anticipated to increase; unregulated recreation; anchor damage; fishing; poaching by foreign fishermen; siltation and ship-based pollution caused by large volume of vessels passing through the Strait of Bab al-Mandab	Develop management plan following detailed surveys; regulate fisheries and utilisation of mangrove; develop tourism plan; ban visits to islands at bird breeding season; set up moorings for tourist boats; offer alternative livelihood for local fishermen; establish presence of marine rangers; study possibilities of reducing siltation by passing vessels; provide basic equipment for MPA management
Egypt: Ras Mohammed National Park	480 km ² / 1992	Area of scenic beauty at southernmost tip of Sinai Peninsula; low cliffs of raised fossil coral reef, rocky and sandy shores, creek, mangrove, seagrass beds; shallow reef flat and drop-offs to ledges at 70 and 100 m depth; high density and diversity of corals; rich reef associated fish and invertebrate fauna, giant clams (<i>Tridacna</i> spp.) common, turtles; first established marine park in Egypt, with high degree of management, important for environmental education	Very high recreation pressure mainly from diving tourists; insufficiently regulated fishing; potential of spills from oil terminals further north	Undertaken by existing EC project.
Egypt: Giftun Islands and Straits of Gubal	Undefined/ 1997	Group of islands off the western coast north of Hurghada and south of entrance to Gulf of Suez, including the islands of Gubal, Tawila, Siyul, Shadwan, Sha'ab Abu Shibani; well-developed and diverse coral reefs, high coral cover and rich reef-associated fauna; turtle nesting	Considerable recreation pressure; fishing; reef erosion from large populations of sea urchins	To be undertaken by EC and GEF/WB project.

Country: Protected Area	Size/ Year	Site description and regional significance	Impacts and conflicts	Proposed activities/ Priority action
Eritrea: Dahlak Islands	Undefined/ Suggested	Archipelago of large number of low-lying islands, some of which are considered for protection; high number of mangrove swamps, seagrass beds, coral reefs above all on outer islands, seagrass beds; fish abundance and diversity high; nesting populations of green and hawksbill turtles; important bird nesting area; dugongs	Fishing; egg collecting; grazing by livestock on larger islands resulting in erosion; recreation pressure expected to grow rapidly	To be undertaken by GEF/UNDP Eritrea project.
Jordan: Aqaba coral reefs	Undefined/ Proposed	Complex and diverse fringing reefs with a rich reef-associated fauna of invertebrates and fishes at the northern tip of the Gulf of Aqaba; one of the northernmost coral reef areas world-wide; probably the best developed and most complex reef on earth at this latitude; seagrass beds; garden eels abundant	High development and recreation pressure; rapidly increasing number of SCUBA divers in the area; reef fisheries	To be undertaken by GEF/WB Jordan project.
Saudi Arabia/ Egypt: Strait of Tiran	Undefined/ Proposed	Scenic area including Tiran, Sanafir and Burqan islands and adjacent coastal stretches; very clear water and drop-offs down to 500 m; extensive and well-developed coral reefs with diverse reef associated fauna of invertebrates and fish in transition area between Gulf of Aqaba and northern Red Sea; sharks and manta rays are common; important turtle nesting and bird breeding areas; dugong	Small part of the area used by tourists from Egypt; constant threat of pollution and damage to reefs from ships passing through the narrow Strait of Tiran; otherwise pristine area	An agreement between Saudi Arabia and Egypt should be reached for the management of the area: regulate recreational use; set up moorings at popular dive sites; establish presence of marine rangers. To be undertaken jointly by the two governments.
Saudi Arabia: Wajj Bank, Sharm Habban and Sharm Munaybirah	2840 km ² / Proposed	Particularly high diversity of habitats; rocky islands up to 60 m high in deep water; sandy islets with mangroves (<i>Avicennia</i> and <i>Rhizophora</i>); large mudflats and mangrove areas on shoreline; extensive shallow water area with fringing reefs and patch reefs, 50 km long barrier reef complex; most extensive coral reef system in the Red Sea; diverse reef associated fauna; seagrass beds; important turtle and bird nesting sites; key area for dugongs	Collection of turtle and bird eggs; fishing, including lobster fisheries; otherwise pristine area which should be protected before threats come up	Develop management plan following detailed surveys; regulate artisanal fisheries; co-ordinate management of MPA with local community; regulate recreational use; establish presence of marine rangers. To be funded by national budget and JICA.

Country: Protected Area	Size/ Year	Site description and regional significance	Impacts and conflicts	Proposed activities/ Priority action
Saudi Arabia: Farasan Islands	3310 km ² / 1996	Terrestrial and marine reserve, archipelago of numerous shallow reefs and more than 80 islands, several of which are elevated Pleistocene reefs; extensive mangrove areas (<i>Avicennia</i> and <i>Rhizophora</i>); wide range of coral-dominated and algae-dominated reef habitats; complex coral reefs with high life coral cover above all at outer islands; unique reef-associated fauna; important fishing grounds and nursery areas for commercially important fish species; macro-algal and seagrass beds; marine mammals including dugong; nesting seabirds; the terrestrial fauna of the islands includes an endemic snake and an endemic gazelle	Fishing pressure from artisanal and industrial fisheries; increase in recreational use expected; military use	Implement existing management plan; establish presence of marine rangers. To be funded by national budget.
Somalia: Aibat & Saad ad-Din Islands, Saba Wanak	ca 300 km ² / Suggested	Two low-lying mangrove islands with probably largest coral reef area in Gulf of Aden; diverse and unique reef-associated fauna; coastal wetland area with 27 water courses running off the Ogo Mountains over 44 km of coastline; reed and willows around pools; largest salt-marsh, swamp and mangrove area in Gulf of Aden; <i>Rhizophora</i> and <i>Avicennia</i> ; saltings between sand dunes and the sea, intermittent sand spits and sand bars enclosing lagoons, large mud flats exposed at low tide; very important nesting site for seabirds, well over 20,000 seabirds were reported from this site; probably turtle nesting	Fishing, including lobster fisheries at rapidly increasing rates; collection of ornamental fish for the aquarium trade is planned; egg collection; collection of corals and coral associated invertebrates; clearing of mangroves for fuelwood and timber; areas that remain are under great pressure	Develop management plan following detailed surveys; regulate fishing and collection of marine invertebrates; offer alternatively livelihood for local fishermen; regulate use of mangroves; restrict access to islands during birds and turtle nesting season; establish presence of marine rangers; provide basic facilities for MPA management
Sudan: Sanganeb Marine National Park	12 km ² / 1990	Submerged oval reef area of about 6 km length and 2 km width on top of rocky base which rises to the surface from 800 m depth; highly complex and diverse coral reefs; drop-offs down to a depth of 800 m, stony corals down to 200 m; diverse and unique reef associated fauna; many species of reef and open water sharks, marine mammals, manta rays; only typical atoll in the Red Sea; the site has a field research station belonging to the Red Sea University and offers unique research opportunities	Recreation pressure presently low to medium, but expected to increase significantly in the future; anchor damage from tourist boats; otherwise very pristine area which due to its offshore position is not influenced by development in the coastal zone	Develop management plan; regulate recreational use; establish on-site infrastructure for research, monitoring and environmental education; set up moorings at popular dive sites; establish presence of marine rangers; consider inclusion of adjacent reef areas in the park; provide basic equipment for MPA management

TABLE OF EXISTING AND PROPOSED MARINE PROTECTED AREAS
(areas proposed for representative network are marked with an asterisk)

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Djibouti	Maskali Sud Integral Reserve	ca 3 km ²	1972	Coral reef and rich reef-associated fish and invertebrate fauna	High recreation pressure, trampling of reefs, collecting of corals, spearfishing,	Low	National
Djibouti	Musha Territorial Park	ca 10 km ²	1980	Coral reef and rich reef associated fish and invertebrate fauna, mangroves	High recreation pressure, trampling of reefs, collecting of corals, spearfishing	Low	National
Djibouti	Godoriya	Undefined	Suggested	Extensive mangrove area, <i>Rhizophora</i> and <i>Avicennia</i> , rich mangrove associated fauna	Grazing and wood collecting	None	National
Djibouti	Iles des Sept Frères and Ras Siyan	Undefined	Suggested	Group of high aspect, rocky islands and adjacent coastal stretch with mangrove-fringed bay, diverse coral reef and rich reef associated fish and invertebrate fauna at the junction between the Red Sea and the Gulf of Aden, nesting seabirds	Recreation pressure, fishing, siltation caused by passing vessels	None	Regional *
Egypt	Abu Gallum Multiple Use Management Area	120 km ²	1992	Rocky coast, coral reef, seagrass beds, important for fish, birds and terrestrial mammals, mountainous areas near the coast	Recreation pressure	Medium, supported by EU project	National
Egypt	Ashtom El-Gamil	1200 km ²	1988	Sandy shore, wetlands, birds, fish and small mammals		Medium	Local
Egypt	Ras Mohammed National Park	480 km ²	1992	Coral reef, mangrove, sandy areas, fish, turtles, important for environmental education	High recreation pressure	High, supported by EU project	Regional *
Egypt	Nabq	500 km ²	1992	Northernmost mangrove area in the Red Sea, coastal wetlands, seagrass beds, coral reef	Recreation pressure, shrimp farm	Medium, supported by EU project	National/ Regional

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Egypt	El-Zaranik	700 km ²	1985	Sandy, wetland, migratory birds, reptiles and mammals		Medium	National
Egypt	Giftun Islands and Straits of Gubal	Undefined	Proposed	Group of islands off the western coast with well-developed and diverse coral reefs and rich reef-associated fauna, turtle and bird nesting	Recreation pressure, anchor damage, fishing	GEF-Egypt and EU projects	National/ Regional *
Egypt	Safaga Island	Undefined	Suggested	Small nearshore island off Safaga, mangroves, coral patches, birds	Safaga port shipping, possibly fishing	GEF-Egypt and USAID projects	National
Egypt	Wadi Gamal	Undefined	Proposed	Large terrestrial area, coastal wetland, mangroves, islands, migratory birds	Hunting, plant collection, seasonal flooding	GEF-Egypt and USAID projects	National
Egypt	Sharm al-Lulu	Undefined	Suggested	Small bay with corals on both sides	Unknown, possibly tourism	GEF-Egypt project	Local
Egypt	Ras Banas	Undefined	Suggested	Lagoon with mangroves in inner area and corals at tip	Fisheries	GEF-Egypt and USAID projects	Local
Egypt	Dedalus Island	Undefined	Suggested	Small island 40 km offshore, diverse coral reef	Potential damage from diving	GEF-Egypt and USAID projects	Local
Egypt	Zabareged Island	Undefined	Suggested	Small island, coral reefs, turtle nesting site	Potential damage from divers	GEF-Egypt and USAID projects	Local/ National
Egypt	Brother Islands	Undefined	Proposed	Coral islands with rich coral reefs	Extensive diving	GEF-Egypt and USAID project	Local/ National
Egypt	Offshore reefs near al-Qusair	Undefined	Suggested	Extensive and complex submerged offshore reefs, diverse reef-associated fauna	Anchor damage, coral collection, possibly damage from diving	GEF-Egypt and USAID projects	National

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Egypt/ Sudan	Gabal Elba Conservation Area	30000	1986	Terrestrial part with mountains and gently sloping plains, 22 offshore islands of the Siyal and Rawabel groups; extensive fringing reefs, mangrove, seagrass, , fish and mammals	Fishing	GEF-Egypt and USAID project	Regional/ Global
Eritrea	Dahlak Islands	Undefined	Proposed	Low-lying islands, mangroves, coral reefs, seagrass beds, turtle nesting, important bird area, dugongs	Fishing, egg collecting	GEF-Eritrea project	Global*
Eritrea	Dur Gaam & Dur Gella Islands	Undefined	Suggested	Representative land flora and fauna, known turtle nesting beaches, interesting diving & snorkelling locations, minimum conflict with human users	Fishing, diving tourism	GEF-Eritrea project	Regional
Eritrea	Fatuma Island group	Undefined	Suggested	First recipient of Gulf of Aden & Indian Ocean effects, thus a good monitoring point; mangrove, Suaeda saltbush, important nursery area for sharks & other resources, potential turtle nesting beaches	Turtle hunting, fishing	GEF-Eritrea project	Regional
Eritrea	Museri Island group	Undefined	Suggested	Three species of mangrove, Suaeda saltbush, extensive patch coral areas, diver fish communities, significant bird breeding areas including large Crab Plover colony and others.	Limited human use	GEF-Eritrea project	Regional
Jordan	Aqaba coral reefs	Undefined	Proposed	Complex and diverse fringing reefs with a rich and diverse reef-associated fauna at the northern tip of the Gulf of Aqaba	Reef fisheries, recreation pressure, development pressure	GEF-Jordan project	Regional/ Global *

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Saudi Arabia/ Egypt	Strait of Tiran	Undefined	Proposed	Islands and extensive coral reefs with diverse reef associated fauna in transition area between Gulf of Aqaba and Red Sea, turtle nesting, dugong	Small part of the area used by tourists from Egypt	None	Regional *
Saudi Arabia	Ras Suwayhil	267 km ²	Proposed	Pristine and diverse coral reefs and reef associated fauna, prime example of Gulf of Aqaba reefs, high cliffs, and scenic features, seabirds, dugong	Unknown	None	Regional
Saudi Arabia	Sharm Zubayr coast	80 km ²	Proposed	Coastline and sharm with fossil reef cliff, narrow reef flats and fringing reef, northernmost mangroves in Saudi Arabia	Construction of causeway	None	National
Saudi Arabia	Ghubbat Bal'aksh	33 km ²	Proposed	Sharm and coastline with reefs, particularly high coral diversity, seagrass beds, osprey, low hills inland	Unregulated recreation	None	National
Saudi Arabia	Sharm Dumagyh, Sharm Antar	70 km ²	Proposed	Scenic lagoons with fringing reefs, seagrass beds, mangrove areas, green and hawksbill turtles, osprey, area backed by hills	Fishing and recreation	None	National
Saudi Arabia	Wajj Bank, Sharm Habban and Sharm Munaybirah	2840 km ²	Proposed	Extensive shallow water area with mainland coast and offshore islands, most extensive coral reef system of entire Red Sea, diverse reef associated fauna, seagrass beds, mangroves (<i>Avicennia</i> and <i>Rhizophora</i>), turtles, bird nesting sites, key area for dugongs	Collection of turtle and bird eggs, fishing	None	Global *

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Saudi Arabia	Qalib Island chain	included in Wajj Bank	Proposed	Series of low lying, sandy islands, seagrass beds and coral reefs, lagoons, important nesting site for turtles and seabirds	Collection of turtle and bird eggs	None	National
Saudi Arabia	al-Hasani, Libanah Islands	Undefined	Proposed	High aspect islands with shallow and deep fringing reefs, high quality coral reefs, important nesting site for turtles and sea birds	Egg collection	None	National
Saudi Arabia	Ras Abu Madd, Sharm Hasi	Will be combined with previous area	Proposed	Scenic sharms and high quality fringing reefs, fossil reef terraces, osprey	Fishing activities	None	National
Saudi Arabia	Ras Baridi, Sharm al-Khawr	30 km ²	Proposed	Sand beaches, small islands, high quality coral reefs, seagrass beds, most important mainland nesting beach for marine turtles (green and hawksbill), bird nesting area, dugong	Pollution from industrial source	None	Regional
Saudi Arabia	Sharm Yanbu	50 km ²	Proposed	Deep, sheltered, bi-lobed lagoon, mangrove and seagrass beds, fringing reefs, osprey, dugong	Recreation activities	None	National
Saudi Arabia	Yanbu Royal Commission protection area	ca 5 km ²	Estab-lished	Mangroves and good quality fringing reef, osprey	Unknown	Medium	Local
Saudi Arabia	Shi'b al-Qirin Reef	15 km ²	Proposed	High quality inshore and offshore reef complexes, osprey	Unknown	None	National
Saudi Arabia	Marsa al-Usalla, Marsa Tawil	30 km ²	Proposed	Shallow lagoons surrounded by dense stands of halophytes, mangrove, seagrass beds, algal beds, osprey, migratory birds	Livestock grazing on inland halophytes	None	National

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Saudi Arabia	Mastura beach	30 km ²	Proposed	Low lying shoreline with stands of reed (<i>Phragmites</i>) and palms, rare freshwater dependent vegetation site	Recreation pressure	None	National
Saudi Arabia	Marsa as-Sarraj	200 km ²	Proposed	Largest land-locked lagoon on Saudi Arabian Red Sea coast, seasonally inundated, stands of mangroves, halophytes, seagrass beds, high quality reef, osprey, important coastal wetland	Agricultural development, fishing	None	National
Saudi Arabia	Marsa Umm Misk	67 km ²	Proposed	Shallow bay with extensive seagrass beds, small stands of mangrove, osprey, dugong	Unknown	None	National
Saudi Arabia	Haramil Island	included in previous area	Proposed	Small elongated island, densely vegetated by halophytes, dugong, osprey, nesting bridled terns and brown noddies	Island used by fishermen	None	National
Saudi Arabia	Ras Hatiba	ca 450 km ²	Proposed	Large shallow lagoon, sand and coralline spits, small mangrove stands, offshore reefs, high diversity of habitats, prime site for education and extension	Recreation pressure, unregulated development	None	Local
Saudi Arabia	Jeddah salt marsh	100 km ²	Proposed	Marshland and coral reef, key site for birds: large concentration of waders, osprey, spoonbill, flamingos	Oil pollution and other waste disposal, possibly development	None	National
Saudi Arabia	ash-Shu'aybah, Mastabah	ca 100 km ²	Proposed	Large lagoon with extensive mangroves, fossil reef terrace and good quality offshore reefs, bird breeding area, osprey	Cutting of mangrove, unregulated development of recreational amenities	None	Local

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Saudi Arabia	Qishran	Undefined	Proposed	Complex of reefs, coral spits, seagrass beds and extensive mangroves, important seabird site, osprey, dugong	Development for recreation, possible cornice development	None	National
Saudi Arabia	Inner Farasan Bank	Undefined	Proposed	Low lying, seasonally inundated mainland coastline, fringing mangroves, islands, birds nesting and dugong area	Unknown	None	National
Saudi Arabia	Outer Farasan Bank	Undefined	Proposed	Major reef and island system with diverse habitats, mangrove, seagrass beds, coral reefs, bird and turtle nesting area, representative of central Red Sea	Unknown at present	None	National
Saudi Arabia	Umm al-Qamari	2 km ²	1977	Two small islands off the Red Sea coast, with thousands of resident birds such as collared doves, herons, pelicans, gulls and sooty falcon	None	Low	National
Saudi Arabia	Marka Island	Undefined	Proposed	Low, sandy island with dense halophyte vegetation, good quality reefs, bird breeding site	Island used by fishermen, possible egg collection	None	National
Saudi Arabia	Ras Tarfa	230 km ²	Proposed	Coastal and terrestrial reserve, large spit with associated mangrove and seagrass beds, key site for numerous marine and terrestrial habitats, important bird area	Possibly hunting	None	National
Saudi Arabia	Farasan Islands	3310 km ²	1996	Terrestrial and coastal reserve, archipelago of coral islands, mangroves, coral reefs, seagrass beds, marine mammals, nesting seabirds, two species of mangroves, endemic gazelle	Fishing, development, recreational pressure expected to increase	Terr: high Mar: low	Global *

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Saudi Arabia	Khawr Amiq, Khawr Raqa	Undefined	Suggested	Lagoons, osprey	Unknown	None	Local
Saudi Arabia	Khawr Nahoud	ca 33 km ²	Proposed	Lagoon with fringing corals, seagrass beds, mangroves, dugong, important bird site, osprey	Presently unknown	None	National
Saudi Arabia	Khawr Itwad	ca 70 km ²	Suggested	Lagoon, abundant seagrass, extensive mangrove stands, fringing corals	Unknown	None	Local
Saudi Arabia	Shi'b Abu al-Liqa, Shi'b al-Kabir	140 km ²	Suggested	Small lagoonal areas with abundant mangroves, coral reefs	Unknown	None	Local/national
Saudi Arabia	Khawr Wahlan	27 km ²	Proposed	Representative saltmarsh with halophytes, significant coastal wetland area	Grazing	None	National
Saudi Arabia	Duwayyimah	160 km ²	Proposed	Productive shallow lagoon, seagrass, mangroves, osprey, dugong	Unknown	None	National
Somalia	Daloh Forest Reserve	2510 km ²	Proposed	Rocky evergreen <i>Juniperus</i> forest with Afroalpine vegetation, sandy coastal plain with grasses, gazelles, Somali wild ass, (terrestrial part very important)	Grazing and collection of wood	None	National, (local for marine section)
Somalia	Maidh Island	ca 1 km ²	Proposed	Rocky island with an estimated up to 100,000 breeding birds, very large breeding colony of noddy (<i>Anous stolidus</i>)	Guano collection outside breeding season	None	National/Regional
Somalia	Aibat & Saad ad-Din Islands, Saba Wanak	ca 300 km ²	Suggested	Low-lying mangrove islands with probably largest coral reef area in Gulf of Aden, coastal area with 27 water courses, largest salt-marsh, swamp and mangrove area in Gulf of Aden, <i>Rhizophora</i> and <i>Avicennia</i> , very important nesting site for seabirds and probably turtles	Fishing, egg collection, collection of corals	None	Global*

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Sudan	Sanganeb Marine National Park	12 km ²	1990	Atoll with highly diverse and complex coral reefs, diverse reef associated fauna, sharks, marine mammals, manta rays, only typical atoll in Red Sea	Recreation pressure, anchor damage from tourist boats	Low	Global *
Sudan	Shuab Rumi	ca 4 km ²	Proposed	Highly diverse offshore reef with unique reef-associated fauna, sharks, marine mammals	Low recreation pressure, shark fishing	None	National/ Regional
Sudan	Mukkawar Island and Dugonab Bay	300 km ²	Proposed	Coral reefs, whale sharks, largest schools of manta rays in entire Red Sea, bird nesting sites, oyster beds	Shark fisheries, oyster culture	None	Regional *
Sudan	Suakin Archipelago	Undefined	Proposed	Coral reefs, diverse fish fauna, important turtle and bird nesting area	Shark fisheries, turtle and bird egg collecting	None	National/ regional
Sudan	Khor Kilab Bird Sanctuary	2 km ²	Proposed	Estuary (khor) area with mangrove and salt marsh, important for migratory birds	Unknown	None	National
Sudan	Abu Hashish Recreational Park	ca 5 km ²	Proposed	Coral reefs, fishes	Pollution, recreation pressure, fishing	None	Local
Yemen	Socotra Islands	3625 km ²	1996	Island group with outstanding terrestrial plant and animal endemism; diverse and largely pristine marine environments and biota	Fishing	GEF-Socotra biodiversity project	Global *
Yemen	Ras Sharma	Undefined	Proposed	Beach and steep rocky headlands, important nesting site for green turtles	turtle egg collecting, possibly slaughtering of turtles	None	National/ Regional
Yemen	Dhobbah (Shihr)	Undefined	Proposed	Shady beaches, important turtle nesting site	turtle egg collecting, possibly slaughtering of turtles	None	National

Country	Protected area	Size	Year of declaration	Major habitats and regional significance	Impacts and conflicts	Management/ Projects	Priority
Yemen	Belhaf and Bir Ali area	Undefined	Proposed	Coastal stretch and group of high aspect islands, scenic coastline, extensive coral reefs and rich fishing area, bird and turtle nesting, crater lake with mangroves	Tourism development, fishing activities	None	Regional *
Yemen	Ras Isa/ Kamaran Island	Undefined	Proposed	Coral reefs with diverse reef associated fauna, mangroves	Oil terminal and chronic oil pollution, threat of major oil spill, reef fisheries for the aquarium trade	None	National
Yemen	Khor Umaira	Undefined	Suggested	Mixed seagrass and coral habitat; semi-enclosed lagoon with turtle nesting beaches	Fisheries	None	National
Yemen	Bab al-Mandab and Perim Islands	Undefined	Suggested	Extensive mangrove stands, dense seagrass beds,	Major shipping lane, pollution, siltation, cutting of mangrove	None	National
Yemen	Ras Isa/ Kamaran Island	Undefined	Proposed	Coral reefs with diverse reef associated fauna, mangroves	Oil terminal and chronic oil pollution, threat of major oil spill, reef fisheries for the aquarium trade	None	National

Annex 7 List of Relevant On-going and Planned Projects in the Region

COUNTRY	PROGRAMME/PROJECT	YR	BUDGET US\$	FUNDING AGENCY	LOCATION & ISSUES ADDRESSED	COMPONENT OF RELEVANC
DJIBOUTI	Biodiversity Strategy & Action Plan	97-99	0.558	GEF/UNDP	National, Institutional Strengthening	1 (GEF)
	National Environmental Action Plan	96-ongoing	0.442		National, Management planning	1
	Fisheries Resource Assessment	93-96	0.200	GTZ	Assessment	3
	Total Costs of known non-GEF projects:		0.642			
EGYPT	Red Sea Coastal & Marine Resource Mgmt Project	95-99	4.7	GEF/WB & Govt'	Red Sea Coast, ICZM, LMR	5 (GEF)
	Organisational Support Program	97-00	3.9	Danida	National, Inst.strengthening	1
	North Sinai Governorate Env. Action Plan	96-97	0.5	Danida	North Sinai	1
	Establishment of Mini-Labs in Regl Branch Offices of EEAA			JICA	Institutional Strengthening	1
	Updating of National Oil Spill Contingency Plan	96-98	1.6	Danida	National, Oil Spill	2
	Oil spill Emergency Response Centre	97-	6.2	EC	Oil Spill	2
	Vessel Traffic System/Gulf of Suez	97-00	5	Govt	Navigation Risk	2
	Vessel Traffic System/Strait of Tiran	97-00	3	Govt	Navigation Risk	2
	Aqaba Protectorates Dev.Program (Ras Mohammed N.Park)	96-00	10.3	EC	MPAs, ICZM	4
	Protected Red Sea Islands and Env. Sustainable Devt	97-	20	USAID	Red Sea Coast, MPAs	4
	Consensus Building for ICZM	94-97	0.6	Danida,Dutch	National, ICZM	5
	Tech. Ass. To Coastal Research Inst. & Hydraulic Research Inst.	97-00	9	Danida	ICZM	5
	Environmental Education & Training Program	95-99	4.1	Danida	National, Pub. Awareness	6
	Environmental Information & Monitoring Program	95-00	12.3	Danida	National, Inst.strengthening	7
	Total Costs of known non-GEF projects:		76.5			
*ERITREA	Conservation Mgmt of Eritrea's Coastal, Marine & Island Biodiv.	98-02	5	GEF/UNDP,	National, ICZM, LMR, MPA	3 (GEF)
	Port rehabilitation	prop.	1.6	WB and others	Local, NavigationRisk / Pollution	2
	Total Costs of known non-GEF projects:		1.6			
JORDAN	Implementation of Gulf of Aqaba Env. Action Plan	96-99	2.7	GEF/WB & Govt'	National, ICZM	5 (GEF)
	Oil Spill Project		5.6	Japan	Aqaba	2
	Oil Spill Project		2	EC	Aqaba	2
	Marine Park support		0.2	USAID	MPA	4
	Total Costs of known non-GEF projects:		7.8			
SAUDI ARABIA	National Oil Spill Contingency Plan	96-00	50	Govt'	National, Oil Spills	2
	Chemical Industries Study	97-00	0.24	Govt'	National, Industrial pollution	2
	Desalination Plant Study	97-00	0.16	Govt'	National, Industrial pollution	2
	Establishment of Database for Oil Contingency Plan	98-00	0.167	Govt'	National, Oil Spills	2
	Mangrove conservation, Red Sea coast	92-ongoing	0.8	Govt'	Red Sea Coast MPAs, LMR	3
	Marine turtle monitoring	90-ongoing	0.4	Govt'	Ras Baridi LMR	3
	Intertidal survey of northern Red Sea	97-99	3.2	Govt'-NCWCD & JIC	Red Sea north of Jeddah LMR	3
	Establishment ofFarasan MPA	88-ongoing	3.5	Govt'-NCWCD	Farasan Islands MPA	4
	Establishment of other MPAs on Red Sea coast	88-ongoing	3	Govt'	Red Sea Coast MPAs	4
	Waste Management Program	95-00	6.265	Govt'	National, Marine pollution	5
	National Coastal Zone Management	95-00	7.5	Govt'	National, ICZM	5
	City Files	95-00	0.133	Govt'	Jeddah Region, Pollution monitoring	5
	Monitoring of the Marine Env & Pollution Sources	95-00	6.04	Govt'	National Marine Pollution Monitoring	7
	Mobile & Stationary Environmental Labs	95-00	11	Govt'	National, Inst. Strengthening	7
COUNTRY	PROGRAMME/PROJECT	YR	BUDGET US\$	FUNDING AGENCY	LOCATION & ISSUES ADDRESSED	COMPONENT OF RELEVANC

	Tide Gauge System	96-	0.138 Govt'	National, Jeddah, Alwajh, Hagl, Jizan	7
	Sharm Obhor Study	97-	0.05 Govt'	Jeddah Region, Marine monitoring	7
	Background Pollution Monitoring	97-00	0.8 Govt'	Red Sea, Pollution Monitoring	7
	Voluntary Ship Program	on-going	0.266 Govt'	Red Sea, Port Meteorology Officer	7
	Total Costs of known non-GEF projects:		93.659		
SOMALIA	Rehabilitation of Somali Ports Management (Mogadishu, Kismayo, Bosasso, Berbera)	93-98	5.1 UNDP/EC	Bosaso, Berbera Port Management	2
	Survey of hazardous waste disposal	97-	FAO	Entire Coast of Somalia/Pollution	2
	Berbera fisheries rehabilitation project	93-ongoing	COOPI	Northwest Coast LMR, Inst. Cap. Buildin	3
	Total Costs of known non-GEF projects:		5.1		
SUDAN	Biodiversity Strategy & Action Plan	97-98	0.334 UNDP/GEF	Institutional Strengthening	1 (GEF)
	Devt of Port Sudan as Rescue Co-ordination Centre	97-ongoing	Govt'	Port Sudan/Navigation Risk, Pollution	2
	Marine research project/Red Sea Univ. & Univ. Khartoum	95-99	0.02 Govt'	LMR, Pollution	2
	Dev. of National Maritime Law	95-97	0.008 Govt'	Navigation Risks, Oil Pollution	2
	Dev. of Oil Spill Contingency Plan for Port Sudan	Prop.		Navigation Risks, Oil Pollution	2
	Species Inventory/Ecosystem Research Sanganeb Marine Nat. Park	Prop.	0.065	MPA, LMR	3
	Total Costs of known non-GEF projects:		0.093		
YEMEN	Biodiversity Strategy & Action Plan	97-98	0.29 UNDP/GEF	National, Institutional Strengthening	1 (GEF)
	Protection of Marine Ecosystems of the Red Sea Coast	96-99	2.8 GEF & Govt'	LMR, Marine Pollution, ICZM, MPA	3 (GEF)
	Conservn & Sustainable Use of Biodiversity of Socotra	97-01	4.9 GEF & Govt'	LMR, MPA	3 (GEF)
	Pollution Control Vessel for Aden	97-98	3 Govt	Navigation Risk, Oil Spill management	2
	Pollution Control Vessels for Hodeida and Mukalla	prop.	6 tbd	Navigation Risk, Oil Spill management	2
	Assessment of Yemeni Ports	prop.	0.2 UNDP	Navigation Risk	2
	Aden Container Terminal Port/Oil Spill Contingency, CZM.	97-00	5 WB and private sect	Navigation Risk, Oil Spill management	2
	EC/IFAD Fisheries Development Project	96-98	39 EC, WB, Govt'	LMR	3
	Conservation & Management of Turtles	prop.	EC		3
	Purchase of three boats for surveillance	prop.	Govt' (Nat.5 Yr Plan)	LMR, Marine Pollution	3
	Agricultural/Environmental Management for Tihama region	97-01	30 IFAD	LBS Pollution, coastal erosion	5
	Small Town Waste and Env. Management	98-00	2.4 WB	ICZM, LMR, LBS, Pollution	5
	Total Costs of known non-GEF projects:		85.6		

Summary of Associated Projects for which project total is known (by component):

	US\$
Component 1:	4.842
Component 2:	94.895
Component 3:	43.665
Component 4:	37.000
Component 5:	55.898
Component 6:	4.100
Component 7:	30.594
Grand total:	270.994

Strategic Action Programme for the Red Sea and Gulf of Aden

Regional Organization for the
Conservation of the Environment of the
Red Sea and Gulf of Aden

PERSGA

Executive Summary

Background

The Red Sea and Gulf of Aden contain some of the world's most important coastal and marine environments and resources. There is a great variety of reef types in the Red Sea with a structural complexity unmatched on Earth. The diversity of corals is greater than anywhere else in the Indian Ocean, and the number of species that are confined to the Red Sea and found nowhere else is extremely high. The Red Sea is one of the most important repositories of marine biodiversity on a global scale and features a range of important coastal habitats. The Gulf of Aden, one of the biologically least known branches of the Indian Ocean, holds fishery resources of international importance. The Socotra Archipelago contains unique aquatic and terrestrial ecosystems and species, with limited impact from human activities. The rich cultural heritage of the Region, especially in the narrow coastal zone, includes large numbers of significant archaeological, historical and sacred sites which are increasingly at risk from development pressure.

Although the Red Sea is still one of the least ecologically disturbed seas relative to other enclosed water bodies, it is in increasing

jeopardy. There is a growing risk of marine pollution, and environmental degradation from rapidly expanding maritime activities. Coastal habitat is being converted for urban and industrial development. Tourism and recreation usage are rapidly expanding. In the Gulf of Aden the fisheries are under great pressure from over-exploitation and illegal fishing, and there are reports of toxic waste dumping by foreign vessels.

Goals and Objectives

In view of the environmental uniqueness of the coasts and waters of the Region, the threats it is facing, and the necessity for actions, the preparation of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden was initiated in October 1995. The SAP process, coordinated by the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) is underway with support from the countries of the Region, the Global Environment Facility (GEF) selected international development institutions and donor organizations.

The SAP supports and facilitates the primary goal of PERSGA, which is the

conservation of the environment of the Red Sea and Gulf of Aden. The aims of the SAP are to develop a regional framework for the protection of the environment and the sustainable development of coastal and marine resources. These aims are achieved by preventive and curative actions.

The SAP is a significant *process* for reaching agreement concerning the environmental trends, threats and priorities at a regional level. It is also a *product* in the form of an Action Programme which provides a framework for continued cooperation in reaching short, medium and long-term goals through a series of complementary actions at all levels. The Programme outlined in the SAP focuses on both *preventive* and *curative* measures required to maintain the rich and diverse coastal and marine resources of the Red Sea and Gulf of Aden. The SAP document will be implemented through a continuous, consultative and cooperative process among the littoral countries.

The SAP Task Force

The development of the SAP has been overseen by an ongoing Task Force which includes representatives of the PERSGA Secretariat and Member States, the Islamic Development Bank, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the World Bank. The Government of Eritrea has also been invited to join the Task Force and to work as a partner in the SAP process. Under the chairmanship of the Secretary General of PERSGA, the Task Force has developed and supervised the work programme, reviewed the results of the programme, and provided technical and administrative input. Four meetings of the Task Force have been held: in Jeddah (October 1995), Amman (April 1996), Sana'a (January 1997), and Jeddah (May 1997). During the first meeting, the Task Force's Terms of Reference

were compiled and the work plan developed. The second meeting reviewed the technical progress and agreed on the follow-up activities for the remaining stages of the SAP. The third and fourth meetings focused on technical discussion of recent findings, the preparation of the final report including recommendations, and associated projects.

Preparation of the SAP has been supported by regional studies on navigation and fisheries. A Navigation Risk Assessment and Management Plan has been prepared to examine regional, national and local issues. The Plan has been prepared with the support of a Working Group of regional experts on maritime and port management, which has held meetings in Egypt and Yemen. The regional study on living and marine resources has assessed their current status and has been prepared with the support of a meeting of regional experts held in Saudi Arabia.

Country Participation

The development of the SAP has been a collaborative process whereby national experts have cooperated to produce reports which analyze environmental issues of regional, national and local significance. National reports were prepared by all cooperating countries and field surveys were conducted in countries where baseline data are limited. To widen participation further and to facilitate consensus building, a pilot national workshop was held in Jordan in August 1996 to review the country report. This was followed by a series of national workshops in other countries to finalize the country reports and to develop priority actions required by each country to address the environmental threats identified.

The coastline of Eritrea occupies a considerable portion of the western Red Sea, and its diverse range of marine habitats contains species unlike those found in the central and northern Red Sea. For these reasons, Eritrea holds a significant place in the overall marine

biodiversity of the Red Sea and its participation in the SAP, as an active partner working alongside the other states, is critically important. This will be facilitated through the development of a strong and equal working partnership between the Government of Eritrea and PERSGA. The Secretary General of PERSGA, through the assistance of UNDP, is actively discussing the modalities for such a partnership with representatives of the Government of Eritrea, so that the Programme will be a truly regional process which reflects the needs of each country.

Regional Threats

The environment and resources of the Red Sea and Gulf of Aden are threatened by a variety of human activities. The rate of population and economic growth in the coastal zones of the Region has resulted in increased pressure on the environment, from dredging and filling operations, from the disposal of domestic and industrial effluent, and from the unsustainable use of freshwater resources. A major contributor to growth in the coastal zone, and the consequent impacts, is the rapidly expanding tourism industry. Marine resources are being exploited in a non-sustainable way and also illegally.

The global importance of petroleum and the resulting maritime traffic in the Red Sea and Gulf of Aden pose a serious threat to the fragile coastal and marine environments. Routine operational leaks and spills from production in the Gulf of Suez and the transport of oil constitute the major source of marine pollution in the Region. At the same time, the growing risk of oil traffic-related accidents creates a major demand for emergency response combined with management skills to minimize risks and control major spills. Emerging issues will need to be addressed in a preventive fashion.

These threats highlight the need for effective use of environmental management

practices. Most of the threats and impacts which have been identified can be prevented by proper environmental planning and management, use of environmental assessments, and also through the enforcement of appropriate regulations, most of which are already in place.

The SAP process has identified a number of major threats to the environment, and to the coastal and marine resources of the Region:

WIDESPREAD HABITAT DESTRUCTION:

- Unplanned coastal development
- Extensive dredging and filling
- Destruction of coral reefs
- Destruction of mangroves
- Destruction of seagrass beds

NON-SUSTAINABLE USE OF LIVING MARINE RESOURCES:

- Overfishing for local and export markets
- Illegal shark fisheries for the East Asian shark fin market
- Turtle exploitation and egg collection
- Incidental capture of marine mammals in fishing nets

NAVIGATION RISKS, PETROLEUM TRANSPORT AND PETROLEUM PRODUCTION:

- Extensive risk of ship collision and grounding in major traffic lanes
- Discharge of sewage from vessels
- Ship discharge of solid waste
- Oil spills from exploration, production, and transport

IMPACTS OF URBAN AND INDUSTRIAL DEVELOPMENT:

- Excessive use of surface and groundwater resources

- Destruction of coastal and marine habitats during construction
- Discharge of partially treated and untreated municipal wastewater
- Industrial pollution
- Hazardous wastes
- Cooling water discharge
- Waste oil disposal

RAPID EXPANSION OF COASTAL TOURISM:

- Surface and groundwater extraction
- Destruction of coastal and marine habitats during construction
- Inadequate sewage and solid waste disposal
- Disturbance to wildlife and habitats by tourists
- Illegal collection of corals and molluscs for souvenir trade

OTHER CONCERNS:

- Illegal disposal of toxic substances by foreign vessels in the Gulf of Aden
- Sedimentation from agriculture and grazing in some locations
- Risks from pesticides and fertilizers in some locations

EMERGING ISSUES:

- Development of free zones
- Improperly managed expansion of small and medium industries
- Exploitation of offshore mineral deposits
- Shrimp and fish farming
- Ornamental fish collecting

Actions to Address Regional Threats

Many of the threats which have been identified are related to a lack of planning and

management of development in the coastal zone, limited use of environmental assessment procedures in making investment decisions, and the inadequate enforcement of existing laws. Living marine resources need to be managed effectively so that their long-term sustainable use is assured. Reducing the risks of navigation accidents will eliminate an additional threat to the marine environment. The management of coastal tourism and increased public awareness about the value of the marine environment will promote habitat and resource conservation. Areas in which management is hampered by a lack of information can be addressed by appropriate applied research. The SAP process has identified the following actions to address these threats:

ENHANCING GOVERNMENT COMMITMENT AND PUBLIC AWARENESS:

- Long-term high level commitment to protection of the Red Sea and Gulf of Aden
- Ratification of MARPOL Convention
- Development and implementation of regional programme for environmental awareness

IMPROVING ENVIRONMENTAL PLANNING, MANAGEMENT, AND ENFORCEMENT:

- Strengthening the capacity for planning and management
- Strengthening the capacity for coastal zone management
- Strengthening the capacity for environmental assessment
- Strengthening the capacity for enforcement of existing regulations
- Strengthening regional environmental information systems through the standardization and updating of databases, including those maintained on geographic information systems (GIS), to facilitate data exchange

PROMOTING HABITAT CONSERVATION:

- Effectively implementing coastal zone management programmes
- Development of a regional network of marine protected areas
- Development of conservation and management programmes for coral reefs
- Development of conservation and management programmes for mangroves
- Development of conservation and management programmes for seagrass beds
- Development of conservation and management programmes for coastal wetlands
- Rehabilitation of mangrove stands

MANAGING LIVING MARINE RESOURCES:

- Stock assessment programme for the development of a fisheries management strategy
- Development and implementation of a management programme for shark fishery
- Development of a regional research and management programme on coral reefs
- Development and implementation of a programme for marine turtle conservation
- Development and implementation of a programme for marine mammal conservation
- Development and implementation of a programme for seabird conservation
- Strengthening the enforcement capacity for existing fisheries regulations
- Development and implementation of environmental guidelines for fish and shrimp farming
- Development of mechanisms for controlling the collection of corals and molluscs

REDUCING NAVIGATION RISKS AND OIL SPILLS:

- Adoption and implementation of Port State Control
- Development and implementation of regional and sub-regional vessel traffic system
- Upgrading existing marine navigation aids in the Red Sea and Gulf of Aden
- Upgrading existing navigation aids in narrow passage areas and high risk areas
- Development and implementation of a regional oil spill contingency plan
- Preparation or upgrading of national oil spill contingency plans
- Upgrading of existing Marine Emergency Mutual Aid Centers and the establishment of similar facilities in other sub-regions

REDUCING IMPACTS FROM URBAN AND INDUSTRIAL DEVELOPMENT:

- Improving urban and industrial planning
- Improving coastal zone management
- Routine use of environmental assessment
- Development of control mechanisms for construction work, dredging and reclamation
- Increased priority for management of surface and groundwater resources
- Strengthening the capacity to manage municipal wastewater and industrial effluents
- Strengthening the capacity to manage solid and hazardous waste
- Conservation of the cultural heritage of the coastal zone
- Environmentally sound development of free zones
- Environmentally sound development of small and medium industries

- Development of regional environmental guidelines for the development of non-petroleum offshore mineral deposits

IMPROVING MANAGEMENT OF COASTAL TOURISM:

- Development of control mechanisms for construction work, dredging and reclamation
- Strengthening the capacity to manage wastewater discharge from coastal resorts
- Development of mechanisms to prevent the over-exploitation of fish and shellfish for tourist consumption
- Enforcement of existing regulations prohibiting the collection of corals, molluscs, and other marine life
- Development of awareness programmes to reduce disturbance to wildlife and habitats by tourists
- Proper site selection and planning for tourism developments
- Establishing reasonable capacity limits for tourism developments

PROMOTING APPLIED RESEARCH:

- Preparation and dissemination of a species identification guide for fishery purposes and environmental management
- Strengthening the capacity for applied research and monitoring
- Strengthening of environmental laboratory capacity
- Biodiversity studies and species inventories

The SAP: A Framework for Action

The Strategic Action Programme process provides a framework and a mechanism to enhance regional environmental management through a series of complementary policy, institutional strengthening and investment actions. The product will be the Strategic Action Programme, which will be supported by

projects designed to address the identified issues. These projects will be implemented on a short, medium and long-term basis according to the nature of the issue being addressed. The SAP may be periodically updated to reflect progress in implementation and to identify new measures to address emerging issues or unanticipated events. It is envisaged that the process will not end with the completion of the initial SAP document, but will continue through further cooperation between the Task Force and PERSGA, with the Task Force acting as an advisory body to PERSGA. The process will also continue through the establishment of Working Groups at the Regional and Sub-Regional level, whose function will be to address transboundary issues. National Working Groups will also be established to deal with the implementation of projects and activities at the national and local levels.

