



# NOAA Large Marine Ecosystem Program Report

# Scope and Objectives of Global Environment Facility Supported Large Marine Ecosystems Projects

US Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service Office of Science and Technology

Large Marine Ecosystem Program

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#### NOAA Technical Memoranda on Large Marine Ecosystems

**Global Applications of the Large Marine Ecosystem Concept 2007 – 2010.** Kenneth Sherman, Marie-Christine Aquarone, and Sally Adams. June 2007. NOAA Technical Memorandum NMFS-NE-208.

**NOAA Fisheries Service's Large Marine Ecosystems Program: Status Report.** Kenneth Sherman, Peter Celone, and Sally Adams. July 2004. NOAA Technical Memorandum NMFS-NE-**183**.

A Framework for Monitoring and Assessing Socioeconomics and Governance of Large Marine Ecosystems. Jon G. Sutinen, Editor. August 2000. NOAA Technical Memorandum NMFS-NE-158.

Emerging Theoretical Basis for Monitoring the Changing States (Health) of Large Marine Ecosystems: Summary Report of Two Workshops: 23 April 1992, National Marine Fisheries Service, Narragansett, Rhode Island, and 11-12 July 1992, Cornell University, Ithaca, New York.Kenneth Sherman, Editor. September 1993. NOAA Technical Memorandum NMFS-F/NEC-100.

Summary of the Symposium on the Northeast U.S. Shelf Ecosystem: Stress, Mitigation, and Sustainability. 12-15 August 1991, University of Rhode Island, Narragansett, Rhode Island. Kenneth Sherman, N. Jaworski, and T. Smayda, Editors. October 1992. NOAA Technical Memorandum NMFS-F/NEC-94.

Large Marine Ecosystems Monitoring Workshop Report. 13-14 July 1991, Cornell University, Ithaca, New York. Kenneth Sherman and Thomas L. Laughlin, Editors. October 1992. NOAA Technical Memorandum NMFS-F/NEC-93.

Report of the Meeting of the *ad hoc* Committee on Large Marine Ecosystems. 22-23 March 1991, UNESCO Headquarters, Paris, France. Kenneth Sherman and Thomas L. Laughlin, Editors. October 1992. NOAA Technical Memorandum NMFS-F/NEC-92.

The Large Marine Ecosystem (LME) Concept and Its Application to Regional Marine Resource Management. 1-6 October 1990, Monaco: Conference Summary and Recommendations. Kenneth Sherman and Thomas L. Laughlin, Editors. October 1992. NOAA Technical Memorandum NMFS-F/NEC-91.





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# Scope and Objectives of Global Environment Facility Supported Large Marine Ecosystems Projects

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> > Large Marine Ecosystem Program,

June 2010

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# Introduction

From modest beginnings in the mid-1990s, the Global Environment Facility (GEF) and World Bank have been increasing financial support for introducing ecosystem-based assessment and management practices to economically developing nations bordering LMEs in Africa, Asia, Latin America, and eastern Europe. The financial support from the GEF, World Bank and other donors has grown to an unprecedented \$3.1 billion in 2010 in support of LME and LME-related Integrated Coastal Management (ICM) project implementation activities underway in 110 developing countries.

A concerted effort is now underway to strengthen the integration of LME and ICM fivemodule assessment and management strategy focused on LME: (i) productivity, (ii) fish and fisheries, (iii) pollution and ecosystem health, (iv) socioeconomics and (v) governance. NOAA is partnering in this effort with five UN agencies (UNEP, UNDP, UNIDO, IOC-UNESCO, FAO) and two non-governmental institutions (IUCN, WWF).

This Report provides technical details for each of the 17 GEF supported LME projects including GEF identification codes, participating countries, project approval status, UN executing agency designations, project descriptions, implementation status, and financial profiles. Excerpts from the project documents relative to the implementation of the phasing-in of the five-module ecosystem-based LME strategy is given in Part I.

Part II is focused on the ICM investment funds provided by the World Bank that serve to strengthen the pollution and ecosystem health modules of East Asian LMEs, sustainable fisheries for countries of sub-Saharan Africa, nutrient reduction for the linked Danube River Basin and the Black Sea LME, and the strengthening of the ecosystem approach to the assessment and management of the Mediterranean Sea LME. Part III lists the publications and reports that support the LME assessment and management strategy. Part IV provides a summary table of the \$3.1 billion in financial support to the LME projects.

# PART I LME-BASED PROJECTS

The GEF has provided substantial funding to support country-driven projects for introducing multi-sectoral ecosystem-based assessments and management practices for LMEs located around the margins of the oceans. At present, the 110 participating countries are engaged in operationalizing the five-module LME indicator approach that has proven useful in ecosystem-based projects in the United States and elsewhere (Duda and Sherman 2002). The modules are adapted to LME conditions through a Transboundary Diagnostic Analysis (TDA) process to identify key issues, and a Strategic Action Program (SAP) implementation process conducted by the countries participating in the LME projects.

The SAP translates the shared commitment and vision into action, a process that has proven essential in GEF projects for developing and sustaining partnerships. Countries cooperate in establishing adaptive management structures for monitoring and evaluation. This has led countries to adopt their own LME-specific ecosystem targets in response to the 2002 Johannesburg World Summit on Sustainable Development (WSSD), and to establish partnerships with bilateral, multilateral, and UN agencies for better coherence by the development assistance community.

The GEF in support of LMEs also works at other scales, to catalyze integrated coastal management (ICM) at the scale of municipalities, coastal provinces, contributing river basins, and at the community level to promote sustainable resource use and habitat protection. One example of the provincial and municipal scale of action is the successful GEF-funded and UNDP-supported Partnerships in Environmental Management for the Seas of East Asia (*PEMSEA*) program with its focus on integrated coastal management (ICM). Tools similar to those used in LME projects are utilized at a smaller scale to foster the integration, participation, and reforms needed for implementing ICM. ICM programs can have a cascading effect in transforming governance, improving people's awareness of important ecosystem assets and social values, and spurring additional private sector involvement (Duda 2009).

GEF also works at the scale of river basins draining to coasts in order to improve water flow regimes and reduce pollution loading. Consistent with the targets of the UNEP Global Programme of Action (GPA) for the protection of the marine environment from land based activities, and with paragraph 33 of the WSSD Program of Implementation, over US\$1 billion has been allocated by GEF to focus on projects related to the GPA and land-based activities. The GEFsupported Hai Basin initiative led by China with World Bank assistance is an example. Another is the large scale GEF-supported Danube and Black Sea Basin Strategic Partnership with UNDP and the World Bank that aligns the World Bank policy with the 15 countries of the Black Sea basin to include pollution reduction reforms, habitat restoration, and pollution reduction investments. The two basin projects create a bridge between land and sea, with GEF combining projects to link the improved management of freshwater basins with coastal zones and large marine ecosystems (Duda 2009).

GEF also utilizes support at other appropriate geographic scales for securing valuable habitats for livelihood of communities and food security. Community level work has led to the establishment of fish refugia. First developed in the GEF/UNEP South China Sea and Gulf of Thailand LME projects, the concept for securing habitats builds on community knowledge of fish reproduction and comanagement and limits gear and fishing at critical periods of lifecycles to sustain fisheries (Paterson and Pernetta, 2008).

### The Benguela Current LME Project

In the mid 1990s, the governments of South Africa, Namibia and Angola requested GEF's assistance for a project focusing on the sustainable management and utilization of the Benguela Current LME with a focus on living marine resources, the reduction of mining impacts, predicting environmental variability and improving ecosystem forecasting, managing land-based pollution, protecting biological diversity, and strengthening capacity to adapt to fluctuating climatic conditions that threaten fisheries. During a 12-month project development period, the three countries reached consensus on a strategic approach for the project, based on GEF procedures for developing a TDA and SAP, which was signed in 2000 by three ministers from each nation. As the first GEF project to successfully complete this initial work, the Benguela Current (BCLME) project serves as a successful model for other LME projects. Especially significant were the national dialogues fostered in inter-ministerial committees. They proved to be an important factor in aligning different ministries related to land and water activities to work in an integrated, ecosystem-based fashion.

This early success led to the establishment of the new, ecosystem-based, Benguela Current Commission (BCC). The Commission was an illustration of how the political commitment of 3 countries can secure ecosystem sustainability. As a result, a second and final GEF LME project was funded to operationalize the BCC and support negotiations for a legal agreement among the 3 countries to sustain its work (Duda 2009). The BCC marries the advice of science-based groups with the advice of management institutions to improve decision-making in fisheries, coastal management, mining and energy. With an ever warming and fluctuating marine environment in which the fish stocks move, the science-based advice and forecasting tools are used by GEF supported LME projects to provide sound recommendations to the joint management institutions so that stakeholders at all levels can adapt to fluctuating and changing climate. The Baltic Sea project applied principles of the 5-module LME approach recovering and sustaining fisheries and controlling nutrient over-enrichment from improved agricultural practices in partnerships with ICES, the Helsinki Commission (HELCOM) and WWF. And in the case of the Yellow Sea LME project, the Peoples Republic of China and the Peoples Republic of Korea followed closely the TDA and SAP process in implementing the 5-module LME approach for applying carrying capacity models to optimizing growth and yield of the marine species while improving water quality. These goals are being realized through the practice of integrated multi-trophic aquaculture (IMTA) and commitment to a significant 33% reduction in capture fisheries by 2020. Among the actions taken is the prohibition of fishing in the Yellow Sea during the summer months of June, July and August in an effort to reduce mortality of the spawning stock biomass of demersal fish species (Tang 2009; Walton and Jiang 2009).

#### References

- Duda, A. M. (2009). GEF Support for the Global Movement toward the Improved Assessment and Management of Large Marine Ecosystems. <u>Sustaining the</u> <u>World's Large Marine Ecosystems</u>. K. Sherman, M. C. Aquarone and S. Adams. Gland, Switzerland, International Union for Conservation of Nature and Natural Resources (IUCN): viii+140p.
- Duda, A. M. and K. Sherman (2002). "A new imperative for improving management of large marine ecosystems." <u>Ocean and Coastal Management</u> **45**(2002): 797-833.
- Tang, Q. (2009). Changing States of the Yellow Sea Large Marine Ecosystem: Anthropogenic Forcing and Climate Impacts. <u>Sustaining the World's Large</u> <u>Marine Ecosystems</u>. K. Sherman, M.-C. Aquarone and S. Adams. Gland, Switzerland, IUCN.
- Walton, M. and Y. Jiang (2009). Some Considerations of Fisheries Management in the Yellow Sea Large Marine Ecosystem. <u>Sustaining the World's Large Marine</u> <u>Ecosystems</u>. K. Sherman, M.-C. Aquarone and S. Adams. Gland, Switzerland, IUCN.

# Part I LME Based Projects

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| 2.           | BALTIC SEA LME                               | 17  |
| 3.           | BAY OF BENGAL LME                            | 22  |
| 4.           | BENGUELA CURRENT LME COMMISSION              | 32  |
| 5.           | BLACK SEA LME                                | 40  |
| 6.           | CANARY CURRENT LME                           | 47  |
| 7.           | CARIBBEAN SEA LME                            | 52  |
| 8.           | INTERIM GUINEA CURRENT LME COMMISSION        | 66  |
| 9.           | GULF OF MEXICO LME                           | 78  |
| 10.          | GULF OF THAILAND LME AND SOUTH CHINA SEA LME | 84  |
| 11.          | HUMBOLDT CURRENT LME                         | 93  |
| 12.          | INDONESIAN SEA LME                           | 102 |
| 13.          | MEDITERRANEAN SEA LME                        | 111 |
| 14.          | PATAGONIAN SHELF LME                         | 115 |
| 15.          | RED SEA LME                                  | 122 |
| 1 <b>6</b> . | SULU CELEBES LME                             | 128 |
| 17.          | YELLOW SEA LME                               | 131 |

# 1. AGULHAS AND SOMALI CURRENTS LMEs PROJECT

### 1.1 BACKGROUND

The Agulhas and Somali Currents Large Marine Ecosystems Project (ASCLMEs) operates hand in hand with the WIO-LAB project, Land-based Activities in the Western Indian Ocean, and the SWIOFP project, Southwest Indian Ocean. The three project briefs are given here. A comprehensive summary of cooperative activities and recent achievements among the three projects in 2009 is given in the 2010 Newsletter available online at www.asclme.org.

#### **1.2 GEF PROJECT DETAILS**

Table 1.1 GEF Project ID 1462 Project details for the Agulhas and Somali Currents LargeMarine Ecosystems Project

### Regional - Programme for the Agulhas and Somali Currents Large Marine Ecosystems: Agulhas and Somali Currents Large Marine Ecosystems Project (ASCLMEs)

| GEF Project ID              | 1462   |
|-----------------------------|--|
| UNDP PMIS ID                | 2205   |
| Funding Source              | GEF Trust Fund   |
| Project Name                | Programme for the Agulhas and Somali Current Large Marine Ecosystems: Agulhas and Somali Current Large Marine Ecosystems Project (ASCLMEs) |
| Country                     | Regional (Kenya, Comoros, Madagascar, Mauritius, Mozambique, Seychelles,<br>Tanzania, South Africa)  |
| Region                      | Africa   |
| Focal Area                  | International Waters   |
| Operational<br>Program      | 8; 9   |
| PDF-A Approval<br>Date      | November 16, 2001  |
| Pipeline Entry<br>Date      | November 14, 2003  |
| PDF-B Approval<br>Date      | November 14, 2003  |
| Approval Date               | September 13, 2005   |
| CEO Endorsement<br>Date     | December 19, 2006  |
| GEF Agency<br>Approval Date | February 26, 2007  |
| Project Status              | IA Approved  |
| GEF Agency                  | UNDP - United Nations Development Programme  |
| Executing Agency            | United Nations Office to Project Services (UNOPS)  |

Description The Objective of the Project is to work with two other "thematic" GEF international waters projects in the area as part of a "strategic approach" to fill gaps in understanding of transboundary living resources of the two LMEs and to build capacity of the participating countries to utilize this improved understanding for more effective management by use of an ecosystem approach. This information and capacity then would be utilized by governments as part of the frameworks being established by the three projects collectively. The project is innovative in that it is being designed to complement two existing projects in the same LMEs, each with a different GEF implementing agency covering a different aspect of the same system with linkages created between them. This is being tried in these 2 LMEs for the first time to test reducing transactions costs of IA interactions. This is also the first replication of the approach taken in the Benguela Current LME project on the other side of Africa. Bilateral funding was used to build country capacity in sampling and then understanding their transboundary resources before GEF was asked to assist. The capacity was built through joint cruises and sampling to understand how their transboundary living resources worked so that information could underpin management. This project replicates that approach but utilizes GEF resources along with a ship provided by Norway to slowly build country understanding to fill essential gaps on the transboundary nature of living resources and in doing so build their capacity to bring this information for fisheries/living resources management purposes. This is a pre-SAP project and will contribute at project's end to a revised TDA/SAP for the LMEs as one outcome in conjunction with the other 2 projects.

Implementation The project was rendered effective following signature of the project document by Status the participating countries on 6 August 2008. A Project Coordination Unit has been set up in Grahamstown South Africa, and a Project Director recruited following an international search. A Monitoring and Evaluation Plan, Coordination Plan covering cooperation with parallel UNEP and WB supported activities and Stakeholder Participation Plan have been prepared. A detailed Inception Report and Activity Plan, linked to the Project Logical Framework and Budget is being prepared and will be presented for approval to the first project steering committee meeting, which will be convened in Mauritius in December 2007. The project will be launched at the forthcoming meeting of the Conference of the Parties for the Nairobi and Abidjan Conventions, which is being held in Cape Town in November 2007.

| 25,000 US\$                                      |  |
|--|--|
| 698,000 US\$                                     |  |
| 12,200,000 US\$                                  |  |
| 12,923,000 US\$                                  |  |
| 18,262,500 US\$                                  |  |
| 31,185,500 US\$                                  |  |
| 1,163,070 US\$                                   |  |
| 12,200,000 US\$                                  |  |
| 18,470,000 US\$                                  |  |
| 31,393,000 US\$                                  |  |
|  |  |
| Project Documents                                |  |
| PDF-B Document (Revised)                         |  |
| Executive Summary (Revised)                      |  |
| Project Document for WP (Revised)                |  |
| Executive Summary                                |  |
| Project Appraisal Document (for CEO Endorsement) |  |
|  |  |

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1. Agulhas and Somali Currents LMEs

### Table 1.2 Project Details for GEF Project ID 1247

## Regional - Addressing Land-based Activities in the Western Indian Ocean (WIO-LaB)

| GEF Project ID              | 1247   |  |
|-----------------------------|--|--|
| Funding Source              | GEF Trust Fund   |  |
| Project Name                | Addressing Land-based Activities in the Western Indian Ocean (WIO-LaB)   |  |
| Country                     | Regional (Kenya, Comoros, Madagascar, Mauritius, Mozambique, Seychelles, Tanzania, South Africa)   |  |
| Region                      | Regional   |  |
| Focal Area                  | International Waters   |  |
| Operational<br>Program      | 10; 2; 9   |  |
| Pipeline Entry<br>Date      | March 01, 1996   |  |
| PDF-B Approval<br>Date      | December 01, 1996  |  |
| Approval Date               | May 16, 2003   |  |
| CEO<br>Endorsement<br>Date  | June 02, 2004  |  |
| GEF Agency<br>Approval Date | September 16, 2004   |  |
| Project Status              | IA Approved  |  |
| GEF Agency                  | UNEP - United Nations Environment Programme  |  |
| Executing<br>Agency         | UNOPS/Nairobi Convention Secretariat   |  |
| Implementation<br>Status    | Inis project has a primary focus on the degradation of the marine and coastal<br>environment due to land-based activities. Three objectives have been identified: Reduce<br>stress to the ecosystem by improving water and sediment quality; Strengthen regional<br>legal basis for preventing land-based sources of pollution; and Develop regional capacity<br>and strengthen institutions for sustainable, less polluting development. These three<br>objectives will provide a strong basis for sustainable environmental management in the<br>Western Indian Ocean region in the future. A preliminary Transboundary Diagnostic<br>Analysis and a preliminary Strategic Action Programme serve as the basis for preparation<br>of this project proposal. The full GEF project will refine the TDA and SAP, following<br>clarification of some aspects of the environmental status of the region. The project focus<br>on the Global Program for Action will result in National Plans of Action for abating land-<br>based sources, as well as a regional protocol for the existing Environmental Convention<br>(Nairobi Convention) with Annexes. The project focus on broad stakeholder participation<br>will help assure the sustainability of the GPA Plans of Action. The private sector will be<br>also a focus for cooperation, key for long-term sustainability of actions.<br>Implementation of the Project is still largely on course, despite delays in the initiation of<br>certain activities. Several of the demonstration projects are notably delayed and are still<br>at the development stage. The Mid-Term Review of the project identified that the main<br>bottleneck in the implementation of the project activities has been the limited capacity<br>(both in terms of human and financial resources) of the National Focal Point Institutions. |  |
|                             | This problem has now been partly resolved through the provision of (technical and financial) support to those institutions through the Project as well as the Nairobi Convention Secretariat under its Trust Fund. Also, the project work-plan has undergone a number of revisions in order to address changes required and to keep it abreast with ongoing processes. Furthermore, much effort is being put in establishing partnerships with other projects, programmes and organisations active in the region (including NGOs and private sector) in order to enhance project outcomes as well as ensure longer-term sustainability.  |  |

| PDF B Amount   | 325,000 US\$                                     |  |
|--|--|--|
| GEF Project<br>Grant                                     | 4,186,140 US\$                                   |  |
| GEF Grant  | 4,511,140 US\$                                   |  |
| Cofinancing<br>Total                                     | 6,902,325 US\$                                   |  |
| Project Cost   | 11,413,465 US\$                                  |  |
| GEF Agency<br>Fees                                       | 476,500 US\$                                     |  |
| GEF Project<br>Grant (CEO<br>Endo.)                      | 4,186,140 US\$                                   |  |
| Cofinancing<br>Total (CEO<br>Endo.)                      | 6,902,325 US\$                                   |  |
| Project Cost<br>(CEO Endo.)                              | 11,413,465 US\$                                  |  |
| GEF Agency<br>Fees (CEO<br>Endo.)                        |  |  |
|  | Project Documents                                |  |
|  | Project Document for WP (Revised)                |  |
|  | Executive Summary                                |  |
|  | Amended Annexes                                  |  |
|  | Project Appraisal Document (CEO Endorsement-Rev) |  |
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## Table 1.3 GEF Project ID 1082 Details

# Regional - Southwest Indian Ocean Fisheries Project (SWIOFP)

| GEF Project ID                        | 1082   |
|---------------------------------------|--|
| IBRD PO ID                            | 72202  |
| Funding Source                        | GEF Trust Fund   |
| Project Name                          | Southwest Indian Ocean Fisheries Project (SWIOFP)                                    |
| Country                               | Regional (Kenya, Comoros, Mauritius, Mozambique, Seychelles, Tanzania, South Africa) |
| Region                                | Africa   |
| Focal Area                            | Multi Focal Area   |
| Operational Program                   | 8; 2   |
| PDF-A Approval Date                   | August 14, 2000  |
| Pipeline Entry Date                   | June 12, 2001  |
| PDF-B Approval Date                   | September 27, 2001   |
| PDF-B (Supplemental) Approval<br>Date | August 11, 2004  |
| Approval Date                         | September 13, 2005   |
| CEO Endorsement Date                  | April 05, 2007   |

#### 1. Agulhas and Somali Currents LMEs

GEF Agency Approval Date June 28, 2007

Project Status IA Approved

GEF Agency IBRD - The World Bank

- Executing Agency Ministry of Water and Forestry, Fisheries and Reforestation, in charge of Environment and Protection of Nature; Ministries of Fisheries from participating countries; UNDP (WIOMEP); UNEP (WIO-LAB)
  - Description The proposed project is one of several projects that will be linked among IAs to address fisheries issues of the two LMEs in the SW Indian Ocean (Somali Current and Agulhus Current). This proposal is from the World Bank with an objective of developing and then implementing a management strategy that links biodi protection of fish species to sustainable use of the fisheries. Distant water fishing fleets are likely depleting the WIO within the 200 mile EEZ of some of the countries. However, the status of the fisheries is virtually unknown. Without this information there are barriers to establishing management institutions under the Law of the Sea. The intent is that bilateral grants, GEF, and IDA finance(APL) can be mobilized to develop the institutions necessary to sustainably manage the economically valuable fisheries, conserve for artisinal and community purposes the overlapping nearshore fisheries, sustain the related biodiversity, and mobilize coastal communities.

Implementation Status

| PDF A Amount                  | 25,000 US\$     |
|-------------------------------|-----------------|
| PDF B Amount                  | 350,000 US\$    |
| GEF Project Grant             | 12,000,000 US\$ |
| GEF Grant                     | 12,725,000 US\$ |
| Cofinancing Total             | 22,950,001 US\$ |
| Project Cost                  | 35,675,000 US\$ |
| GEF Agency Fees               | 1,145,250 US\$  |
| GEF Project Grant (CEO Endo.) | 12,000,000 US\$ |
| Cofinancing Total (CEO Endo.) | 17,510,000 US\$ |
| Project Cost (CEO Endo.)      | 30,235,000 US\$ |
| GEF Agency Fees (CEO Endo.)   | 1 145 250 US\$  |

#### **Project Documents**

Project Concept (Revised)

PDF-B Document (Revised)

Letter of Support

PDF-B Doc-Supplemlental-FINAL

Comoros-endorsement Letter from Government

Kenya-Endorsement Letter from Government

Mauritius-Endorsement Letter from Government

So Africa-Endorsement Letter from Government

Seychelles-Endorsement Letter from Government

#### Part I

Tanzania-Endorsement Letter from Government

Mozambique-Endorsement Letter from Government

Project Document for WP (Revised)

Executive Summary (Revised)

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#### 1.3 Contacts

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<u>www.asclme.org;</u> Ongoing ASCLME cruise information: <u>http://www.asclme.org/lang-en/the\_asclme-project/research-cruises;</u> LME website at: www.lme.noaa.gov/

#### 1.4 EXCERPTS FROM GEF ID 1462 PROJECT DOCUMENTS

On the following pages are excerpts from the project documents for the Agulhas and Somali Currents LMEs, listing relevant LME modules, project objectives and project outcomes (Table 1.4). Annex 8 from the project document for GEF Project ID 1462 is given as Table 1.5.

## 1. Agulhas and Somali Currents LMEs

# Table 1.4 Excerpts from the project document for GEF Project ID 1462, Programme for theAgulhas and Somali Currents Large Marine Ecosystems

| III Pollution and<br>Ecosystem Health; II<br>Fish and Fisheries; V<br>Governance | SWIOFP Project Objective:<br>(i) To identify and study exploitable offshore<br>fish stocks within the SWIO, and<br>differentiate between environmental and<br>anthropogenic impacts; (ii) To develop<br>institutional and human capacity through<br>training and career building. (iii) To<br>develop a regional fisheries management<br>structure and associated harmonized<br>legislation in collaboration with the<br>SWIOFC.  | Seven specific Outcomes:<br>(Fish and Fisheries, Socio-economic,<br>Pollution and Ecosystem Health and<br>Governance Modules)• Identify exploitable<br>offshore fish<br>stocks ; develop inst. Capacity; develop<br>regional fisheries management. (Fish<br>and Fisheries Module));<br>• Do baseline assessment and<br>assess crustacean fisheries by-catch<br>(Fish and Fisheries Module);<br>• Do baseline assessment of<br>demersal stocks in targeted areas;<br>• Develop and test fisheries<br>monitoring techniques;<br>• Baseline assessment of fisheries<br>interactions with non-consumptive<br>marine; and<br>Strengthen national fisheries<br>management.   |
|--|---|--|
| II Fish & Fisheries;<br>IV Socioeconomics  | Outcome: Regional database piloted and<br>ranked effective by majority of SWIOFP<br>countries (Fish and Fisheries and Socio-<br>economic Modules);<br>Production of a gap-analysis which<br>identifies gaps in knowledge of SWIO<br>fisheries resources and presents research<br>agenda to be implemented by<br>SWIOFP (Fish and Fisheries Module);<br>historic data identified for inclusion in<br>database/data atlas sourced or entered into<br>database<br>Regional fisheries database fully<br>operational and inclusive (Fish and<br>Fisheries and Socio-economic<br>Modules); National fisheries related IT and<br>communications infrastructure procured or<br>upgraded (Fish and<br>Fisheries and Socio-economic Module);<br>and Training in data handling and reporting<br>provided ( Fisheries and Socio-economic<br>Modules). | Regional database piloted and ranked<br>effective by majority of SWIOFP countries<br>(Fish and Fisheries and Socioeconomic<br>Modules); Production of a gap analysis which<br>identifies gaps in knowledge of SWIO<br>fisheries resources and presents research<br>agenda to be implemented by SWIOFP (Fish<br>and Fisheries Module); historic data identified<br>for inclusion in database/data atlas sourced<br>or entered into database Regional fisheries<br>database fully operational and inclusive (Fish<br>and Fisheries and Socio-economic Modules);<br>National fisheries related IT and<br>communications infrastructure procured or<br>upgraded for each of nine SWIOFP countries<br>(Fish and Fisheries and Socioeconomic<br>Module); and Training in data handling and<br>reporting provided for each of nine SWIOFP<br>countries (Fish and Fisheries and Socio-<br>economic Modules). |
| II Fish & Fisheries; IV<br>Socioeconomics  | Outcome: (I) Baseline assessment of<br>shallow and deep water crustacean<br>stocks and fisheries in the EEZs of<br>Mozambique, Kenya, South Africa,<br>Tanzania, Seychelles, Madagascar and<br>Comoros.<br>(ii) Assessment of crustacean fisheries<br>by-catch, evaluation of discard impacts,<br>testing of exclusion devices, and<br>measurements of ecosystems impacts in<br>selected areas of the SWIO.   | Survey methodology defined and found<br>scientifically sound (Fish and Fisheries<br>Module);<br>Seven ship-based surveys and data<br>collection exercises to assess the potential<br>of new and existing fisheries (Fish and<br>Fisheries Module); Production of<br>preliminary country reports and<br>consolidated sub-regional reports on<br>status of crustacean fisheries (Fish and<br>Fisheries and Socio-economics Modules);<br>pilot studies on optimising artisanal<br>shallow-water lobster fisheries completed   |

| Table 1.5 | Annex 8 from the project document GEF ID1462, | Programme Areas and LME |
|-----------|---|-------------------------|
| Modules   |   | -                       |

|   | Programme Area   | Interventions/ LME Module   |
|---|--|---|
| I Productivity; II Fish<br>& Fisheries  | ASCLMEs Project Objective: To fill<br>prioritised knowledge gaps in<br>understanding of transboundary living<br>resources of the two LMEs and to buildi<br>capacity of the participating countries to<br>utilize this improved understanding for<br>more effective management through use of<br>a modular approach to ecosystem<br>management. | Four specific Outcomes:<br>• Filling of key identified knowledge and<br>information gaps (Productivity Module/<br>fisheries and pollution module)<br>• Building project, Programme and Long-term<br>monitoring and evaluation system<br>Governance and Socioeconomic<br>Module);<br>• Mainstreaming (Governance and Socio-<br>economic Module); and • Public Participation<br>Programme (Socio -economic Module).   |
| I Productivity; II Fish<br>& Fisheries and III<br>Pollution and<br>Ecosystem Health | Outcome: Key environmental knowledge<br>gaps are filled as necessary to introduce an<br>ecosystem approach to LME management;  | Fill gaps in identified priority areas in<br>oceanographic processes and environmental<br>variability (Productivity, fisheries and Pollution<br>and Ecosystem Health Modules): Specifically,<br>among others, system productivity in near-<br>shore and off-shore area; larval transport;<br>anthropogenically induced environmental<br>variability; role of gyres and eddies in<br>productivity  |
| II Fish & Fisheries; IV<br>Socioeconomicsand<br>V Governance                        | Outcome: Decision-making tools are in<br>place, to facilitate the synthesis and<br>application of data for LME management;   | Defraying country and regionally based<br>transaction costs to jointly establish<br>monitoring and evaluation approaches based<br>on IW indicators. (Socio -economic,<br>Governance, and Fish and Fisheries<br>Modules)   |
| IV Socioeconomics<br>and V Governance   | Outcome: Foundational capacities are in<br>place to assure the sustainability of<br>assessment and data management<br>activities to be undertaken in the sap<br>implementation phase;  | <ol> <li>Defraying the transaction costs of national<br/>and regional discussions aimed at legislative<br/>and regulatory changes consistent<br/>Programme and roject objectives, donor<br/>recruitment, and the establishment of other<br/>mechanisms aimed at Programme and<br/>project financial sustainability Governance<br/>Module).</li> <li>Capacity building during project<br/>implementation and leveraging of resources<br/>to assist countries retain trained personnel<br/>(Socio-economic odule).</li> </ol> |
| IV Socioeconomics<br>and V Governance   | Outcome: A Comprehensive Public<br>Participation Initiative Enables<br>Stakeholders to Engage in Programme<br>activities.  | <ol> <li>De-mystifying science to benefit of<br/>Stakeholders (Socio -economic Module);</li> <li>Stakeholder forums (Socio-economic<br/>Module);</li> <li>Environmental Education Initiatives (Socio-<br/>economic Module);</li> <li>Establishment of Project and Programme<br/>Web Site (Socio-economic<br/>Module).</li> </ol>  |

# 1. Agulhas and Somali Currents LMEs

| III Pollution and<br>Ecosystem Health; II<br>Fish and Fisheries; V<br>Governance | SWIOFP Project Objective:<br>(i) To identify and study exploitable offshore<br>fish stocks within the SWIO, and<br>differentiate between environmental and<br>anthropogenic impacts; (ii) To develop<br>institutional and human capacity through<br>training and career building. (iii) To<br>develop a regional fisheries management<br>structure and associated harmonized<br>legislation in collaboration with the<br>SWIOFC.  | Seven specific Outcomes:<br>(Fish and Fisheries, Socio-economic,<br>Pollution and Ecosystem Health and<br>Governance Modules)• Identify exploitable<br>offshore fish<br>stocks ; develop inst. Capacity; develop<br>regional fisheries management. (Fish<br>and Fisheries Module));<br>• Do baseline assessment and<br>assess crustacean fisheries by-catch<br>(Fish and Fisheries Module);<br>• Do baseline assessment of<br>demersal stocks in targeted areas;<br>• Develop and test fisheries<br>monitoring techniques;<br>• Baseline assessment of fisheries<br>interactions with non-consumptive<br>marine; and<br>Strengthen national fisheries<br>management.   |
|--|---|--|
| II Fish & Fisheries;<br>IV Socioeconomics  | Outcome: Regional database piloted and<br>ranked effective by majority of SWIOFP<br>countries (Fish and Fisheries and Socio-<br>economic Modules);<br>Production of a gap-analysis which<br>identifies gaps in knowledge of SWIO<br>fisheries resources and presents research<br>agenda to be implemented by<br>SWIOFP (Fish and Fisheries Module);<br>historic data identified for inclusion in<br>database/data atlas sourced or entered into<br>database<br>Regional fisheries database fully<br>operational and inclusive (Fish and<br>Fisheries and Socio-economic<br>Modules); National fisheries related IT and<br>communications infrastructure procured or<br>upgraded (Fish and<br>Fisheries and Socio-economic Module);<br>and Training in data handling and reporting<br>provided ( Fisheries and Socio-economic<br>Modules). | Regional database piloted and ranked<br>effective by majority of SWIOFP countries<br>(Fish and Fisheries and Socioeconomic<br>Modules); Production of a gap analysis which<br>identifies gaps in knowledge of SWIO<br>fisheries resources and presents research<br>agenda to be implemented by SWIOFP (Fish<br>and Fisheries Module); historic data identified<br>for inclusion in database/data atlas sourced<br>or entered into database Regional fisheries<br>database fully operational and inclusive (Fish<br>and Fisheries and Socio-economic Modules);<br>National fisheries related IT and<br>communications infrastructure procured or<br>upgraded for each of nine SWIOFP countries<br>(Fish and Fisheries and Socioeconomic<br>Module); and Training in data handling and<br>reporting provided for each of nine SWIOFP<br>countries (Fish and Fisheries and Socio-<br>economic Modules). |
| II Fish & Fisheries; IV<br>Socioeconomics  | Outcome: (I) Baseline assessment of<br>shallow and deep water crustacean<br>stocks and fisheries in the EEZs of<br>Mozambique, Kenya, South Africa,<br>Tanzania, Seychelles, Madagascar and<br>Comoros.<br>(ii) Assessment of crustacean fisheries<br>by-catch, evaluation of discard impacts,<br>testing of exclusion devices, and<br>measurements of ecosystems impacts in<br>selected areas of the SWIO.   | Survey methodology defined and found<br>scientifically sound (Fish and Fisheries<br>Module);<br>Seven ship-based surveys and data<br>collection exercises to assess the potential<br>of new and existing fisheries (Fish and<br>Fisheries Module); Production of<br>preliminary country reports and<br>consolidated sub-regional reports on<br>status of crustacean fisheries (Fish and<br>Fisheries and Socio-economics Modules);<br>pilot studies on optimising artisanal<br>shallow-water lobster fisheries completed   |

| II Fish & Fisheries; IV<br>Socioeconomics   | Outcome: (i) Baseline assessment of<br>demersal stocks and fisheries in the EEZs<br>of Kenya, Tanzania, Mozambique, South<br>Africa, Seychelles,<br>Comoros and Madagascar.  | Survey methodology defined and found<br>scientifically sound (Fish and Fisheries<br>Module); ship-based surveys and data<br>collection exercises to assess the potential of<br>new and existing fisheries (Fish and Fisheries<br>Module); Production of<br>preliminary country reports (Fish and<br>Fisheries and Socio-economic Modules); and<br>consolidated sub-regional reports on<br>status of demersal fisheries (Fish and<br>Fisheries and Socio-economics Modules).  |
|---|--|--|
| III Pollution and<br>Ecosystem Health; II<br>Fish and Fisheries; IV<br>Socioeconomics;V<br>Governance | Outcome: Monitoring of fishing effort and<br>catch . Development and testing of<br>fisheries monitoring techniques and linkage<br>of communication infrastructure and<br>development of coordination mechanisms<br>and verification systems. | Scientific sea observers trained (Fish and<br>Fisheries Module); Improvement in frequency<br>and coverage of national monitoring activities<br>in each country (Fish and Fisheries and Socio-<br>economic Modules); Initiation of land based<br>monitoring and data verification systems<br>in at least half of participating countries (Fish<br>and Fisheries, Socio-economics, and<br>Governance Modules); Initiation of discharge<br>monitoring Programme in at least half of<br>participating countries (Pollution and<br>Ecosystem health and Governance Modules);<br>Two aerial surveys and data collection to<br>monitor fishing effort in select areas of the<br>SWIO (Fish and Fisheries and Socio-<br>economics Modules); and Initiation of a<br>regional<br>Vessel Monitoring System (Fish and Fisheries<br>and Governance Modules) |
| II Fish & Fisheries;<br>IV Socioeconomics;<br>III Pollution and<br>Ecosystem Health                   | Outcome: Baseline assessment of fisheries<br>interactions with nonconsumptive marine<br>resources and assessment of marine<br>biodiversity as alternative sources of<br>income   | Development of guidelines for research<br>grant proposals completed (Fish and<br>Fisheries and Socio-economics Modules);<br>Research studies on interaction between<br>commercial and non commercial marine<br>resources or potential alternative<br>livelihoods completed Fish and Fisheries<br>and Socio -economics Modules); Key<br>marine species GIS mapped SWIOFP<br>countries (all except Réunion) Pollution<br>and Ecosystem health Module); and bio -<br>indicator species identified and<br>relationships between target species and<br>ecosystem health established (Fisheries<br>and Socio -economics Modules)   |
| II Fish & Fisheries; IV<br>Socioeconomics; V<br>Governance  | Outcome: Strengthening of Regional and<br>National Fisheries Management.<br>Development of regional fisheries<br>management framework and support to<br>regional and national fisheries<br>management bodies.                                | Evaluation of national fisheries regulations<br>and identification of areas where<br>harmonization is needed completed (Fish and<br>Fisheries and Governance Modules);<br>Establishment of working relationship and<br>technical support between SWIOFP and<br>Southwest Indian Ocean Fisheries (Fish and<br>Fisheries and Governance Modules);<br>Regional PMU and national project offices in<br>place; and national level workshops to<br>disseminate project outputs and develop<br>follow on activities (Socio-economics Module)  |

# 2. BALTIC SEA LME

### 2.1 BACKGROUND

A summary of the recent history of the Baltic Sea Regional Project is given online at <u>http://www.ices.dk/projects/BSRP.asp</u> including important links to relevant documents. After 2006, the Baltic Sea LME Project became the current Baltic Sea Region Program 2007-2013 and can be viewed at <u>http://eu.baltic.net/</u> with meeting schedules and current news.

## 2.2 GEF PROJECT ID 922 DETAILS AND CONTACTS

#### Table 2.1 Baltic Sea Regional Project, Tranche 1

fishing communities.

| ĸ                           | egional - Battic Sea Regional Project, Tranche T  |
|-----------------------------|---|
| GEF Project ID              | 922   |
| UNDP PMIS ID                | 2045  |
| IBRD PO ID                  | 48795   |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Baltic Sea Regional Project, Tranche 1  |
| Country                     | Regional (Estonia, Lithuania, Latvia, Russian Federation)   |
| Region                      | Europe and Central Asia   |
| Focal Area                  | International Waters  |
| Operational<br>Program      | 9   |
| PDF-B Approval<br>Date      | February 26, 1999   |
| Approval Date               | February 12, 2001   |
| CEO Endorsement<br>Date     | January 22, 2003  |
| GEF Agency<br>Approval Date | February 25, 2003   |
| Project Completion<br>Date  | June 30, 2007   |
| Project Status              | Project Completion  |
| GEF Agency                  | IBRD/UNDP   |
| Executing Agency            | Helsinki Commission (HELCOM) in cooperation with the International Baltic Sea Fisheries<br>Commission (IBSFC) and International Council for the Exploration of the Sea (ICES)   |
| Description                 | The Baltic Sea Regional Project (BSRP) objective is to increase sustainable biological productivity, improve coastal zone management and reduce agricultural non-point source pollution through the introduction of ecosystem-based approaches for land, coastal and marine environmental management. The Project's long-term goal is to provide the three Baltic Sea cooperating international bodies. HELCOM INSEC, ICES and the regioner |

### Regional - Baltic Sea Regional Project, Tranche 1

countries with management tools for sustainable agricultural, coastal and marine management, while improving social and economic benefits for the farming, coastal and

| Implementation<br>Status         | The project completed appraisal process in December 2002 and was circulated to GEF Council prior to CEO endorsement on 22 Jan 2003; the proposal was also circulated to the Bank board on 21 Jan 2003. The Baltic programme will be implemented in three phases / projects as tranches are approved by the GEF Council; the current project tranche is US\$5.5 million. In consideration of the multi-country nature of the programme and the phased approach, the overall programme time frame was extended from 5 to 6 years. Finland, Sweden, Norway, US (NOAA) and NEFCO have committed to their respective co-financing. |
|----------------------------------|---|
| PDF B Amount                     | 350,000 US\$  |
| GEF Project Grant                | 5,500,000 US\$  |
| GEF Grant                        | 5,850,000 US\$  |
| Cofinancing Total                | 6,600,000 US\$  |
| Project Cost                     | 12,450,000 US\$   |
| GEF Agency Fees                  | 450,000 US\$  |
| GEF Project Grant<br>(CEO Endo.) | 5,500,000 US\$  |
| Cofinancing Total<br>(CEO Endo.) | 6,620,000 US\$  |
| Project Cost (CEO<br>Endo.)      | 12,470,000 US\$   |
| GEF Agency Fees<br>(CEO Endo.)   |   |
|                                  |   |

#### **Project Documents**

Project Document

Project Appraisal Document (for CEO Endorsement)

Cover note

Cover Letter from IA

Letters of Support

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## 2.3 PROJECT CONTACTS

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jan@ices.dk Andris Andrushaitis (Latvia), assistant coordinator Staffan Lund (Coordinator C2) Bärbel Müller-Karulis Ainis Lagzdins (nutrient export)

Kaj Granholm)

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Maris Plikhs

Markus Vetemaa (Estonia).

Website:

Reports and presentations available on CD and at: http://www.ices.dk/projects/balticsea.asp LME website at: www.lme.noaa.gov/.

## 2.4 EXCERPTS FROM PROJECT DOCUMENTS

*Program Purpose.* The purpose of the Baltic Sea Regional Project (BSRP) is to ensure that an ecosystem-based approach for the sustainable use of Baltic Sea resources has been demonstrated at the field level and is being adopted for management actions by cooperating international bodies, national governments, local organizations and NGOs. The field level activities would be undertaken in Estonia, Latvia, Lithuania, and the Russian Federation, along their Baltic coastal areas and in the adjacent coastal and open sea areas.

*Program Phasing.* The program purpose will be achieved with steady progress over an agreed 5-year period including the following phases:

- Phase 1. Introduction of the Ecosystem Approach (2001-2002). Establishment of the regional framework for introduction of the ecosystem approach; mobilization of partners in management of coastal and open sea marine resources; and initial activities for land and coastal management.
- Phase 2. Demonstration of the Ecosystem Approach (2003-2004). Undertaking cooperative activities for assessment and management of coastal and open sea marine resources; expansion of activities for land and coastal management; and joint activities for linkage of land, coastal and open sea management programs.
- Phase 3. Application of the Ecosystem Approach (2004-2006). Identification of next steps by the cooperating parties for expanded application of the ecosystem approach for land, coastal and open sea management; completion of field based management and demonstration activities; and preparation and evaluation of assessment studies.

The Project Log-frame (Annex 1 in the project document) provides the key performance indicators for progress towards achieving the program purpose, and performance triggers to move from one phase to the next will be tracked through a monitoring and evaluation system. This system is detailed in the Project Implementation Plan and Project Procurement Plan (PIP/PPP).

## Part I

#### Table 2.2 Transboundary Issues in the Baltic Sea Ecosystem (from GEF Project ID 922)

| LME Module and  | Causes   | Impact   | Uncertain Risks  | Transboundary Issues   | Solutions   |
|---|--|--|--|--|---|
| Productivity<br>- Harmful eutrophication<br>and algal blooms<br>- Environmentally<br>insensitive agriculture<br>practices<br>- Changing state of<br>ecosystem   | <ul> <li>Nutrient loading in<br/>coastal waters from<br/>anthropogenic land and<br/>marine activities</li> <li>Changes in living<br/>resource biodiversity</li> <li>Introduction of exotic<br/>species</li> </ul>  | <ul> <li>Public health concerns</li> <li>Poisoning and mortality<br/>of human consumers of<br/>marine organisms</li> <li>Decreased recreational<br/>use of marine and coastal<br/>waters</li> </ul>  | <ul> <li>Increase of incidences of<br/>algal blooms</li> <li>Continued impacts from<br/>anthropogenic sources</li> <li>Expansion of exotic<br/>species</li> </ul>  | <ul> <li>Agricultural watersheds<br/>cross national<br/>boundaries</li> <li>Occurrence of algal<br/>blooms in coastal and<br/>open sea waters</li> <li>Migration of species<br/>across national<br/>boundaries</li> </ul>  | <ul> <li>Develop a coordinated<br/>monitoring, assessment<br/>and reporting system</li> <li>Improve capacity to<br/>monitor</li> <li>Improve land-based<br/>management activities</li> </ul>  |
| Ecosystem Health<br>- Deterioration of coastal<br>and open sea waters<br>- "Hot Spot" pollution<br>from point and non-point<br>source pollution<br>- Degradation of coastal<br>lagoons and wetlands   | <ul> <li>Inputs from point and<br/>non-point sources<br/>(agriculture, industry,<br/>municipalities)</li> <li>Lack of policies and<br/>enforcement for point<br/>source discharges</li> <li>Weak coastal zone<br/>planning</li> </ul>  | <ul> <li>Public health concerns</li> <li>Ecosystem health and<br/>resilience</li> <li>Changes in species<br/>dominance</li> <li>Decreased area of<br/>wetlands due to<br/>conversion in watersheds<br/>and coastal areas</li> <li>Reduced functioning of<br/>coastal lagoons/wetlands<br/>as filters</li> </ul>                          | <ul> <li>Cause-effect relationship</li> <li>Continued degradation</li> <li>of water quality</li> <li>Continued degradation</li> <li>of watersheds, coastal</li> <li>lagoons and wetlands</li> <li>Future stress caused by</li> <li>future demands for land</li> <li>and water</li> </ul> | <ul> <li>Impacts from<br/>transboundary pollutants</li> <li>Reduced ability to use<br/>water resources due to<br/>quality problems</li> <li>Decline in aquatic<br/>habitats and species in<br/>watersheds, coastal and<br/>open sea areas</li> </ul>   | <ul> <li>Implement<br/>management practices<br/>to reduce pollution inputs</li> <li>Establish regional<br/>network for assessment<br/>and reporting</li> <li>Understand the<br/>impacts of pollution on<br/>health</li> <li>Develop management<br/>tools to reduce impacts</li> </ul>                     |
| Fish/Fisheries<br>- Non-optimal harvesting<br>of living resources (e.g.<br>over fishing, dumping of<br>by-catch)<br>- Reduction of<br>economically valuable<br>fish stock (cod)<br>- Threats to vulnerable<br>species<br>- Vulnerability of<br>spawning habitats<br>Socioeconomic | <ul> <li>Fishing over capacity</li> <li>Non-sustainable<br/>utilization of living<br/>resources</li> <li>Reduction of prey<br/>through over fishing</li> <li>Competition for space<br/>and prey</li> <li>Lack of collaborative<br/>monitoring, assessment,<br/>and management</li> <li>Continued over fishing</li> </ul> | <ul> <li>Ecosystem dynamic<br/>change</li> <li>High by-catch and<br/>undersize catch</li> <li>Fisheries impacting<br/>productivity cycle</li> <li>Pressure on selected<br/>habitats from fishing<br/>practices</li> <li>Threats to biodiversity</li> <li>Opportunities for exotic<br/>species</li> <li>Variable and uncertain</li> </ul> | <ul> <li>Irreversible ecosystem<br/>change</li> <li>Collapse of commercially<br/>important stocks</li> <li>Stability of key habitats<br/>and their ability to respond<br/>to stress</li> <li>Expansion of exotic<br/>species</li> </ul>  | <ul> <li>Most harvested open<br/>sea living resources<br/>extend beyond national<br/>borders</li> <li>Coordination with EU<br/>on fishery issues</li> <li>Effective ways to share<br/>and manage common<br/>resources</li> <li>Conservation of key<br/>areas of coastal and<br/>open sea habitat</li> <li>Regional national and</li> </ul> | <ul> <li>Agree on cooperative<br/>joint surveys of coastal<br/>and open sea stock</li> <li>Establish a regional<br/>forum for ecosystem and<br/>stock assessments</li> <li>Develop tools for<br/>ecosystem-based<br/>management of living<br/>open sea resources</li> <li>Understand the value</li> </ul> |
| - Continued exhaustive<br>fishing practices<br>- Reduced used of<br>coastal and open sea<br>waters, affecting local<br>income   | -Changes in open sea<br>productivity<br>-Eutrophication and<br>pollution impacts farming<br>coastal communities,<br>and living open sea<br>resources   | -Loss of fish and shellfish<br>markets<br>- Threats to recreational<br>fishing<br>- Decrease in coastal<br>tourism   | <ul> <li>- Decrease in tourism</li> <li>- Unemployment increase</li> <li>in the fishing sector</li> <li>- Lower standard of living</li> </ul>  | <ul> <li>Iccal impacts from these problems</li> <li>Reduced access to resources</li> <li>Reduced opportunities for income growth and employment</li> </ul>   | <ul> <li>of the ecosystem</li> <li>Develop tools for<br/>increasing farmer and<br/>fisherman incomes</li> <li>Strengthen local and<br/>regional capacity for<br/>management</li> </ul>  |

### 2. Baltic Sea LME

#### Management

 Lack of harmonized
 cooperation between the three international bodies
 (HELCOM/IBSFC/ICES)
 Unequal distribution of capacity in the Baltic Sea region
 Lack of local capacity to monitor and assess environmental variability The three international bodies have different mandates
-Limited inter country exchange
- Limited research and laboratory capacity
- Low salaries
- Lack of knowledge of decision makers concerning ecosystem issues and management

Inconsistent management of Baltic resources
Imbalances within the region
Limited cooperation between institutions

- Inadequately informed decision makers
- Limited public

understanding of issues and complex choices

- Degradation of watersheds, coastal areas and marine resources due to inconsistent management

 Commitment to support ecosystem management
 Level of political will to

make changes in resource management

- Uncertainty over future economic conditions

- Information needs to be coordinated between countries in the Baltic Sea region - Measures need to be taken to harmonize monitoring, assessment and management between regional bodies, national governments and local governments - Partnerships are needed to share knowledge and experience across borders

Strengthen institutional capacities of the three international bodies
 Organize training and partnerships
 Upgrade equipment and monitoring and assessment practices
 Create institutional framework and network for cooperation and management
 Improve information for policy makers and the public

# 3. BAY OF BENGAL LME



#### 3.1 BACKGROUND

#### Project status

Current information on the Bay of Bengal LME project is available online at http://www.boblme.org/ including current objectives and partnerships. The eight countries involved in the project are some of the most populous in the world. Over 400 million people live in the Bay of Bengal area and their numbers are increasing rapidly. Most of these people are poor and rely heavily on the marine resources which are being affected by overfishing, removal or degradation of important marine habitats, and pollution.

#### 3.2 PROJECT DETAILS FOR GEF PROJECT ID 1252

| Table 3.1 Reg                            | gional - Bay of Bengal Large Marine Ecosystem   |
|--|---|
| GEF Project ID                           | 1252  |
| IBRD PO ID                               | 89908   |
| Funding Source                           | GEF Trust Fund  |
| Project Name                             | Bay of Bengal Large Marine Ecosystem  |
| Country                                  | Regional (Bangladesh, Indonesia, India, Sri Lanka, Maldives, Malaysia, Thailand)  |
| Region                                   | Asia and the Pacific  |
| Focal Area                               | International Waters  |
| Operational<br>Program                   | 8   |
| Pipeline Entry Date                      | September 14, 1997  |
| PDF-B Approval<br>Date                   | September 14, 1997  |
| PDF-B<br>(Supplemental)<br>Approval Date | December 04, 2003   |
| Approval Date                            | April 06, 2005  |
| CEO Endorsement<br>Date                  | June 30, 2008   |
| GEF Agency<br>Approval Date              | February 08, 2008   |
| Project Status                           | IA Approved   |
| GEF Agency                               | FAO/IBRD  |
| Executing Agency                         | FAO,Bangladesh Fisheries Research Inst, India Dept. Animal Husbandry & Dairying (Fisheries Unit), Indonesia Direct Gen Capture Fisheries, Maldives Marine Research Ctr, Malaysia Marine Research Ctr, Myanmar Dept Fisheries, (see remarks section) |
| Description                              | The project will develop an agreed strategic action program for the sustainable   |

management of the Bay of Bengal Large Marine (LME) Ecosystem. The executing agency (FAO) would work with the 7 governments to address transboundary marine

### 3. Bay of Bengal LME

resources issues along the coast of this LME. During preparation, some opportunities for World Bank financing may arise to address the key issues. Among them would be land-based sources of marine pollution, artisanal fisheries versus commercial fisheries, habitat conservation and restoration, and potentially ICM strategies for adapting to extreme climatic events that devastate coastal communities.

Implementation A supplemental PDF-B grant of \$350,000 was approved in December 2003 (making a Status total of \$399,000 of PDF B resources) to prepare a Transboundary Diagnostic Analysis and to define the scope/process for preparing the Strategic Action Plan. Project preparation is progressing very well with strong support from the respective governments. The LOA between Bank and FAO revised to include the supplemental PDF B funding and extend the duration of contract with FAO to June 30, 2005. PCN review completed. Priorities sub-regional and regional activities identified by participating countries. Draft project document to be completed by September 30, 2004 for discussion at workshop in Colombo.

 PDF B Amount
 349,800 US\$

 GEF Project Grant
 12,082,100 US\$

 GEF Grant
 12,781,900 US\$

 Cofinancing Total
 16,385,500 US\$

Project Cost29,167,400 US\$GEF Agency Fees1,151,640 US\$GEF Project Grant12,082,100 US\$

(CEO Endo.) Cofinancing Total (CEO Endo.) Project Cost (CEO 51,693,301 US\$

Endo.) GEF Agency Fees

(CEO Endo.)

#### Project Documents

PDF-B Document Supplemental

<u>Budget</u>

<u>Work Plan</u>

Endorsement Letter from Government

Project Document for WP

Revised annexes

<u>Map</u>

Executive Summary (Revised)

Request for CEO Endorsement

Project Appraisal Document (for CEO Endorsement)

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Table 3.2 FAO/Global Environment Facility Project Document: Sustainable Management of the Bay of Bengal Large Marine Ecosystem (BOBLME) (GEF Project ID 1252) including re-endorsement dates.

#### Part I

## FAO/GLOBAL ENVIRONMENT FACILITY

|  | PROJECT DOCUMENT   |  |
|--|--|--|
| Countries:   | Regional - Bangladesh, India, Indo   | onesia, Malaysia, Maldives,  |
|  | Myanmar, Sri Lanka, and Thailand   |  |
| Project Title:   | Sustainable Management of the Ba   | ay of Bengal Large Marine  |
|  | Ecosystem (BOBLME)   | , , ,  |
| GEF Project ID:  | 1252   |  |
| FAO Project ID:  | 594089   |  |
| FAO Project Symbol: GCP/R/   | AS/236/GFF   |  |
| GEF Agency:  | Food and Agriculture Organization  | of the United Nations (FAO)  |
| Other Executing Partners:<br>GEF Focal Area:<br>Operational Programme: | Bangladesh Fisheries Research In<br>of Animal Husbandry and Dairying<br>Directorate General of Capture Fis<br>Research Center; Malaysia Marine<br>Department of Fisheries; Sri Lanka<br>Research & Development Agency;<br>International Waters (IW)<br>8 – Waterbody-Based programme | stitute; India Department<br>(Fisheries Unit); Indonesia<br>heries; Maldives Marine<br>Research Centre; Myanmar<br>National Aquatic Resources<br>Thailand Dept. of Fisheries |
| GEE Strategic Program  | me: SP 2 Expand global cover   | age of IW foundation canacity  |
| building:  | inite. OF 2 Expand global covera   | age of the foundation capacity   |
| <ul> <li>GEF-4 IW Strategic Obj</li> </ul>                             | ective 1 (To foster international mu   | Iti-state \\cooperation on   |
| priority transboundary water   | concerns through more \compreher   | nsive. ecosystem-based   |
| approaches to management)  | and  | ,  |
| • GEF 4 IW SP 1 – restor   | ing and sustaining coastal and mari  | ine fish stocks and associated   |
| biological diversity   | 5  |  |
|  |  |  |
| Duration:  | Five years   |  |
| Estimated Starting Date:   | May 2008   |  |
| Estimated Completion:  | April 2013   | LIG¢12 082 100   |
| Financing Fian:  | Co financing:  | 03\$12 082 100   |
|  | Norway   | US\$ 1 200 000   |
|  | Sida (cash)  | US\$ 1 288 900   |
|  | Sida (other)   | US\$ 9 522 500   |
|  | Governments (CASH)   | US\$ 2,200,000   |
|  | Governments (in-kind)  | US\$ 3 500 000   |
|  | NOAA (in kind)   | US\$ 400.000   |
|  | FAO (in kind)  | US\$ 800.000   |
|  | Sub-total Co-financing   | US\$18 911 400   |
|  | Total Project Budget:  | US\$30 993 500   |
| José M. Sumpsi   | J  |  |
| Assistant Direct   | or-General   |  |
| Technical Coope  | eration Department   |  |
| Food and Agricu  | llture Organization of the United Na   | ations   |
| 6  | -  |  |

**Operational Focal Point Endorsement:** 

BANGLADESH: AHMED, Shoaib Secretary Ministry of Environment & Forest INDIA: MITAL, Sudhir Joint Secretary Ministry of Environment and Forests INDONESIA: SUMARDJA, Effendy GEF National Focal Point for Indonesia Ministry of Environment MALAYSIA: YAHAYA, Nadzri Conservation and Environmental Management Division Ministry of Natural Resources & Environment MALDIVES: MAJEED, Abdullah Date of Re-endorsement: 06 January 2005

Date of Re-endorsement: 16 May 2006

Date of Re-endorsement: 5 January 2005

Date of Re-endorsement: 19 January 2006

Date of Re-endorsement:

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Deputy Minister & GEF Operations & Political Focal Point Ministry of Environment, Energy and Water **MYANMAR: SAN WIN, Dr** Joint Secretary National Commission for Environmental Affairs Ministry of Forestry, Myanmar **SRI LANKA: LEELARATNE, P. M** Secretary Ministry of Environment & Natural Resources **THAILAND: PIENSTAPORN, Sornchai** Deputy Permanent Secretary Ministry of Natural Resources & Environment 8 September 2005

Date of Re-endorsement: 15 June 2007

Date of Re-endorsement: 12 January 2005

Date of Re-endorsement: 31 March 2005

### **3.3 CONTACT INFORMATION**

Project contact: Simon Funge-Smith, Senior Fishery Officer, FAO Simon.FungeSmith@fao.org

#### Other contacts

Merete Tandstad, Gabriella Bianchi, Janne Fogelgren (all at FAO), Venkatesh Salagrama (India), Dr. Sri Hartiningsih, (Ning) Purnomohadi (Indonesia), Abu Talib Ahmad (Malaysia)

Website: www.boblme.org

#### 3.4 EXCERPTS FROM BAY OF BENGAL GEF PROJECT ID 1252 DOCOUMENT, EXPECTED OUTCOMES

| Intermediate Results<br>(one per component)                   | Results Indicators for Each<br>Component   | Use of Outcome Monitoring   |  |  |  |
|---|--|---|--|--|--|
|   |  |   |  |  |  |
| Component One:  | Component One:   | Component One:  |  |  |  |
| Long-term sustainability of<br>the BOBLME Program<br>ensured. | <ul> <li>Transboundary Diagnosis Analysis to<br/>identify environmental concerns and<br/>root causes of environmental<br/>degradation completed through an<br/>effective inter-governmental process<br/>and endorsed by respective<br/>governments.</li> </ul> | <ul> <li>Review arrangements and<br/>adequacy of methodological<br/>guidance if noticeable uneven<br/>commitment/engagement of<br/>respective government<br/>counterparts in TDA process by<br/>YR2;</li> <li>Collection and analysis of post-<br/>tsunami environmental studies<br/>by PY2.</li> </ul> |  |  |  |
|   | <ul> <li>Permanent institutional arrangements<br/>agreed to and established for the long-<br/>term management of the BOBLME</li> </ul>   | <ul> <li>Regional analysis completed by<br/>PY 2</li> </ul>   |  |  |  |
|   | – Financial recommendations formulated   | <ul> <li>Review arrangements if<br/>regional institutional analysis<br/>not completed by PY 2</li> <li>Reinforce consensus building if</li> </ul>   |  |  |  |

#### Table 3.3 ANNEX 3: Results Framework and Monitoring, Bay of Bengal

|   |  | inter-ministerial agreement not reached by PY 5.   |
|---|--|--|
|   | <ul> <li>8 National SAPs completed and agreed</li> </ul>   | <ul> <li>By YR2 - Review and revise<br/>SAP formulation process if<br/>national SAP teams and<br/>regional SAP team not<br/>functional by YR2 or less than<br/>75% of stakeholders are<br/>involved in national SAP<br/>processes;</li> <li>Public consultations of national<br/>SAPs completed by PY 4</li> <li>By YR4 – Review approach if<br/>less than six national SAPs not<br/>completed, public consultations<br/>on National SAP if less than six<br/>national SAPs not endorsed by<br/>respective governments.</li> </ul>   |
|   | <ul> <li>One Regional SAP completed and agreed</li> </ul>  | <ul> <li>Establishment of regional SAP<br/>team by PY3</li> <li>Review consensus building<br/>process if Inter-ministerial<br/>conference cannot be convened<br/>beginning of YR5</li> </ul>   |
|   | <ul> <li>Establishment of conditions leading to<br/>the creation of a permanent Regional<br/>agreement on fisheries</li> </ul>   | <ul> <li>Interim Regional Fishery Task<br/>Force created by PY3.</li> <li>Fisheries management<br/>incorporated into Regional</li> </ul>   |
|   |  |  |
|   | - Full-size project for second phase of<br>BOBLME programme completed  | PY4  |
| Component Two:  | Full-size project for second phase of<br>BOBLME programme completed     Component Two:   | Component Two:   |
| <b>Component Two:</b><br>Regional and sub-regional<br>collaborative management<br>approaches applied to<br>priority issues and barriers<br>affecting coastal/marine<br>living natural resources in<br>the BOBLME and the  | <ul> <li>Full-size project for second phase of<br/>BOBLME programme completed</li> <li>Component Two:         <ul> <li>National pilot areas(s) benefiting from<br/>community based integrated coastal<br/>management, alternative livelihoods<br/>opportunities within a co-management<br/>framework</li> </ul> </li> </ul>  | <ul> <li>SAP for endorsement by end<br/>PY4</li> <li>Component Two:</li> <li>Pilot area(s) identified and<br/>stock taking complete by PY2</li> <li>Confirm if local capacity<br/>strengthened sufficiently to<br/>support policy reforms by PY4</li> </ul>  |
| <b>Component Two:</b><br>Regional and sub-regional<br>collaborative management<br>approaches applied to<br>priority issues and barriers<br>affecting coastal/marine<br>living natural resources in<br>the BOBLME and the<br>livelihoods of dependent<br>fisher communities. | <ul> <li>Full-size project for second phase of<br/>BOBLME programme completed</li> <li>Component Two:         <ul> <li>National pilot areas(s) benefiting from<br/>community based integrated coastal<br/>management, alternative livelihoods<br/>opportunities within a co-management<br/>framework</li> <li>Six policy reforms in support of<br/>community-based integrated coastal<br/>fisheries management (ICM) approved.</li> </ul> </li> </ul>  | <ul> <li>SAP for endorsement by end<br/>PY4</li> <li>Component Two:</li> <li>Pilot area(s) identified and<br/>stock taking complete by PY2</li> <li>Confirm if local capacity<br/>strengthened sufficiently to<br/>support policy reforms by PY4</li> <li>Ascertain if "lessons learn"<br/>substantiate need for<br/>meaningful policy reform by<br/>PY2</li> <li>Documented policy available<br/>by PY3</li> </ul>  |
| <b>Component Two:</b><br>Regional and sub-regional<br>collaborative management<br>approaches applied to<br>priority issues and barriers<br>affecting coastal/marine<br>living natural resources in<br>the BOBLME and the<br>livelihoods of dependent<br>fisher communities. | <ul> <li>Full-size project for second phase of<br/>BOBLME programme completed</li> <li>Component Two:         <ul> <li>National pilot areas(s) benefiting from<br/>community based integrated coastal<br/>management, alternative livelihoods<br/>opportunities within a co-management<br/>framework</li> <li>Six policy reforms in support of<br/>community-based integrated coastal<br/>fisheries management (ICM) approved.</li> </ul> </li> <li>Regional statistical data protocols<br/>signed.</li> </ul>   | <ul> <li>SAP for endorsement by end<br/>PY4</li> <li>Component Two:</li> <li>Pilot area(s) identified and<br/>stock taking complete by PY2</li> <li>Confirm if local capacity<br/>strengthened sufficiently to<br/>support policy reforms by PY4</li> <li>Ascertain if "lessons learn"<br/>substantiate need for<br/>meaningful policy reform by<br/>PY2</li> <li>Documented policy available<br/>by PY3</li> <li>Regional statistical sub-<br/>committee established in PY1</li> </ul>  |
| <b>Component Two:</b><br>Regional and sub-regional<br>collaborative management<br>approaches applied to<br>priority issues and barriers<br>affecting coastal/marine<br>living natural resources in<br>the BOBLME and the<br>livelihoods of dependent<br>fisher communities. | <ul> <li>Full-size project for second phase of<br/>BOBLME programme completed</li> <li>Component Two:         <ul> <li>National pilot areas(s) benefiting from<br/>community based integrated coastal<br/>management, alternative livelihoods<br/>opportunities within a co-management<br/>framework</li> <li>Six policy reforms in support of<br/>community-based integrated coastal<br/>fisheries management (ICM) approved.</li> </ul> </li> <li>Regional statistical data protocols<br/>signed.</li> <li>Three fishery management plans<br/>developed and being applied to the<br/>management of regional/sub-regional<br/>fish stocks.</li> </ul> | <ul> <li>SAP for endorsement by end<br/>PY4</li> <li>Component Two:</li> <li>Pilot area(s) identified and<br/>stock taking complete by PY2</li> <li>Confirm if local capacity<br/>strengthened sufficiently to<br/>support policy reforms by PY4</li> <li>Ascertain if "lessons learn"<br/>substantiate need for<br/>meaningful policy reform by<br/>PY2</li> <li>Documented policy available<br/>by PY3</li> <li>Regional statistical sub-<br/>committee established in PY1</li> <li>Ascertain if joint data collection<br/>/sharing for respective fisheries<br/>occurring by PY3</li> </ul> |

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|  | developed and approved by respective<br>governments and institutional<br>arrangements for their implementation<br>established and functional.  | <ul> <li>and bi-national institutional<br/>arrangements not established by<br/>YR5</li> <li>Review progress if sector plans<br/>not developed by YR5</li> </ul>  |  |  |  |
|--|--|--|--|--|--|
| Component Three:   | Component Three:   | Component Three:   |  |  |  |
| Increased understanding of<br>large-scale processes and<br>ecological dynamics and<br>inter-dependencies<br>characteristic of the<br>BOBLME.                           | <ul> <li>Agreed to plan of studies needed to<br/>address key data gaps serving as<br/>barriers to improving understanding of<br/>large-scale oceanographic and<br/>ecological processes controlling<br/>BOBLME living marine resources.</li> </ul> | <ul> <li>Completion of data inventory<br/>by PY 1. Revise strategy if data<br/>inventory not completed.</li> </ul>   |  |  |  |
|  | <ul> <li>FSP in support of improved<br/>management of existing and creation of<br/>new MPAs approved and implemented.</li> </ul>   | <ul> <li>FSP proposal prepared and<br/>submitted by PY 3.</li> </ul>   |  |  |  |
|  | <ul> <li>Establishment of regional MPA<br/>monitoring programme</li> </ul>   | <ul> <li>Design of monitoring<br/>programme and candidate sites<br/>identified by PY 2.</li> </ul>   |  |  |  |
|  | <ul> <li>Partnerships established with regional<br/>and global environmental programmes<br/>and effective sharing of information in<br/>improving understanding of BOBLME<br/>processes</li> </ul>   | <ul> <li>Adjust approach if working<br/>group of MPA experts not<br/>established and functional by<br/>YR 1</li> <li>1st planning meeting of<br/>regional MPA managers held<br/>by PY2.</li> </ul>                       |  |  |  |
|  | <ul> <li>Geo-referenced data base established<br/>and effective sharing and exchange of<br/>information amongst participating<br/>BOBLME countries</li> </ul>  | <ul> <li>Review progress and approach<br/>if less than 5 regional/global<br/>programmes not collaborating<br/>with BOBLME programme</li> <li>Review and adjust if GIS data<br/>base inventories not completed</li> </ul> |  |  |  |
|  |  | in PY1   |  |  |  |
| Component Four:  | Component Four:  | Component Four:  |  |  |  |
| Institutional arrangements<br>and processes established to<br>support a collaborative<br>approach to ascertain and<br>monitor the health of the<br>BOBLME and priority | <ul> <li>Establishment of agreed to system-wide<br/>environmental health indicators</li> </ul>   | <ul> <li>National workshops completed<br/>by end of PY2. Revise strategy<br/>if no consensus reached on<br/>adequacy of existing indicators</li> </ul>   |  |  |  |
| coastal water quality issues.  | <ul> <li>Strategy and action plan for regional<br/>pollution monitoring.</li> <li>Pilot monitoring underway in selected<br/>"hot-spots"</li> </ul>   | <ul> <li>National task forces created by<br/>end of PY1 and data bases<br/>inventoried by PY2</li> </ul>   |  |  |  |
|  | <ul> <li>BOBLME countries agree to water<br/>quality criteria</li> </ul>   | <ul> <li>Initial list of water quality<br/>parameters formulated by end<br/>of PY2Adjust strategy if<br/>countries unable to agree on<br/>initial broad list of indicators of</li> </ul>                                 |  |  |  |

|   |   | water quality   |
|---|---|---|
| <b>Component Five:</b>  | Component Five:   | Component Five:   |
| Institutional capacity<br>established to co-ordinate<br>regional interventions,<br>monitor project impacts, and<br>disseminate and exchange<br>information. | <ul> <li>Regional cooperation promoted through<br/>6 meetings of the PSC</li> </ul>       | <ul> <li>Determine by PY 2 level of<br/>participation of fisheries and<br/>environmental agencies of 8<br/>countries in PSC meetings</li> </ul> |
|   | <ul> <li>Project monitoring programme<br/>established and under implementation</li> </ul> | <ul> <li>Determine extent to which<br/>information is being shared<br/>amongst participating countries</li> </ul>                               |
|   | <ul> <li>Project results and "lessons learned"<br/>disseminated</li> </ul>                | <ul> <li>Uptake monitoring of projects<br/>and agencies shows clear<br/>evidence of incorporation of<br/>BOLME approaches</li> </ul>            |

## Table 3.4 Arrangements for Results Monitoring, Bay of Bengal Project

|                       |          | Target Values |          |          |          |          |          | Data Collection and Reporting |                                   |  |  |
|-----------------------|----------|---------------|----------|----------|----------|----------|----------|-------------------------------|-----------------------------------|--|--|
| Outcome Indicators    | Baseline | Yr.<br>1      | Yr.<br>2 | Yr.<br>3 | Yr.<br>4 | Yr.<br>5 | Yr.<br>6 | Frequency and<br>Reports      | Data<br>Collection<br>Instruments | Responsibility<br>for Data<br>Collection |  |
| SAP, supported by     | None     | -             | -        | -        | -        | -        | 1        | Annual                        | M&E                               | RCU                                      |  |
| permanent             |          |               |          |          |          |          |          | Regional                      | reports                           |  |  |
| institutional         |          |               |          |          |          |          |          | Work Plan                     | from                              |  |  |
| arrangements and      |          |               |          |          |          |          |          | (ARWP)                        | project                           |  |  |
| funding, is put in    |          |               |          |          |          |          |          |                               | Mangeme                           |  |  |
| place to support      |          |               |          |          |          |          |          |                               | nt                                | WB                                       |  |
| regional              |          |               |          |          |          |          |          |                               | Informatio                        |  |  |
| collaborative         |          |               |          |          |          |          |          | Report from                   | n System                          |  |  |
| activities, policy    |          |               |          |          |          |          |          | mid-term                      | (MIS)                             | WB                                       |  |
| reforms, and          |          |               |          |          |          |          |          | review                        |                                   |  |  |
| sustainable           |          |               |          |          |          |          |          | (MTR)                         | MIR                               |  |  |
| management            | Taba     |               |          |          |          |          | 1        | WD                            |                                   | DCU                                      |  |
| POPL ME               |          | -             | -        | -        | -        | -        | 1        | W D<br>Implementet            | ICP                               | KCU                                      |  |
| DUDLME.               | tod in   |               |          |          |          |          |          | ion                           | ICK                               | WP                                       |  |
|                       | PV 1     |               |          |          |          |          |          | Completion                    |                                   | WD                                       |  |
| - Proposed actions in | 111      |               |          |          |          |          |          | Report                        |                                   | WB                                       |  |
| the SAP address the   |          |               |          |          |          |          |          | (ICR)                         | MIS                               | WD                                       |  |
| wellbeing of rural    |          |               |          |          |          |          |          | (ICIX)                        | 1011G                             |  |  |
| fisher communities    |          |               |          |          |          |          |          | ARWP                          | MTR                               |  |  |
| through promoting     |          |               |          |          |          |          |          |                               |                                   |  |  |
| regional approaches   |          |               |          |          |          |          |          | MTR                           | ICR                               |  |  |
| to resolving resource |          |               |          |          |          |          |          |                               | -                                 |  |  |
| issues and barriers   |          |               |          |          |          |          |          | ICR                           |                                   |  |  |
| affecting their       |          |               |          |          |          |          |          |                               |                                   |  |  |
| livelihood.           |          |               |          |          |          |          |          |                               |                                   |  |  |
|                       |          |               |          |          |          |          |          |                               |                                   |  |  |

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| <b>Results Indicators</b>   | Baseli | Target Values |          |          |          | Data Collection and Reporting |          |   |                                    |  |
|---|--------|---------------|----------|----------|----------|-------------------------------|----------|---|------------------------------------|--|
| for each Component  | ne     | Yr.<br>1      | Yr.<br>2 | Yr.<br>3 | Yr.<br>4 | Yr.<br>5                      | Yr.<br>6 | Frequency<br>and<br>Reports                       | Data<br>Collectio<br>n<br>Instrume | Responsibi<br>lity for<br>Data<br>Collection |
|   |        |               |          |          |          |                               |          |   | nts                                | concentration                                |
| Component One:<br>- TDA finalized.  | FTDA   | 25<br>%       | 50<br>%  | 100<br>% | -        | -                             | -        | ARWP<br>TDA                                       | MIS                                | RCU  |
| permanent<br>institutional<br>arrangements agreed   | None   | -             | -        | 50<br>%  | -        | -                             | 100<br>% | PSC report  | MIS                                | PSC  |
| to and established.<br>- Financial<br>administrative  | None   | -             | -        | -        | -        | 1                             | -        | ARWP<br>Legal<br>document                         | MIS                                | RCU  |
| established.<br>- SAP completed and<br>agreed to.   | None   | -             | -        | -        | -        | 50<br>%                       | 100<br>% | ARWP<br>SAP                                       | MIS                                | RCU  |
| Component Two:<br>- 6 policy reforms in<br>support of<br>community-based<br>fisheries management  | None   | -             | -        | -        | 2        | 2                             | 2        | ARWP<br>Policy<br>documents                       | MIS                                | RCU<br>Consultants                           |
| (ICM) achieved.<br>- Establishment of<br>conditions leading to<br>a permanent Regional<br>Fishery Body  | None   | 10<br>%       | 20<br>%  | 50<br>%  | 70<br>%  | 90<br>%                       | 100<br>% | ARWP<br>Legal                                     | MIS                                | RCU<br>Consultants                           |
| - Regional statistical<br>data protocols signed.  | None   | -             | -        | -        | -        | 3                             | -        |   | MIS                                | RCU<br>BOBLME                                |
| - Fishery<br>management plans<br>developed and<br>applied to the<br>management of<br>regional/sub-regional                                    | INOTE  | -             | -        | -        | -        | -                             | 3        | ARWP<br>Protocols<br>ARWP<br>Managemen<br>t Plans | MIS                                | RCU<br>Fishery<br>TForces                    |
| fish stocks.<br>- Establishment of<br>conditions leading to<br>the creation of<br>permanent bi-<br>national commissions<br>to manage critical | None   | 10<br>%       | 20<br>%  | 50<br>%  | 70<br>%  | 90<br>%                       | 100<br>% | ARWP<br>Bi-national<br>agreements                 | MIS                                | RCU<br>Commissio<br>ns                       |
| trans-boundary<br>ecosystems<br>- Bi-national<br>management plans<br>developed for critical<br>trans-boundary                                 | None   | -             | -        | -        | -        | -                             | 2        | ARWP<br>Managemen<br>t Plans                      | MIS                                | RCU<br>Commissio<br>ns                       |
| ecosystems.   |        |               |          |          |          |                               |          |   |                                    |  |

| - Agreed to plan of None 1 ARWP Study plan MIS RCU Consultants address key data gaps serving as barriers to improving understanding of large-scale oceanographic and eccological processes controlling BOBLME living marine resources. None 1 - ARWP Approved FSP in support of improved management of existing and creation of new MPAs/fish 1 ARWP Approved FSP proposal existing and creation of new MPAs/fish - 1 ARWP MIS RCU implemented establishment of a - 1 - 1 ARWP ARWP MIS RCU consultants establishment of a - 1 - 1 ARWP ARWP MIS RCU consultants   | - Agreed to plan of studies needed to address key data gaps serving as barriers to improving understanding of large-scale oceanographic and ecological processes controlling BOBLME living marine resources. Serving a detection of a set of the s   | <b>Component Three:</b>               |        |   |   |   |    |    |     |             |     |             |
|--|--|---------------------------------------|--------|---|---|---|----|----|-----|-------------|-----|-------------|
| studiess needed to<br>address key data gaps<br>serving as barriers to<br>improving<br>understanding of<br>large-scale<br>coanographic and<br>ecological processes<br>controlling BOBLME<br>living marine<br>resources.<br>FSP in support of<br>improved<br>management of<br>existing and creation<br>of new MPAs/fish<br>refugia approved and<br>none<br>regional MPA<br>regional MPA<br>Mison<br>RCU<br>BOBLME<br>improved<br>managers<br>- establishment of<br>regional network of<br>MAR<br>MAR<br>None<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1   | studies needed to<br>address key data gaps<br>serving as barriers to<br>improving<br>understanding of<br>large-scale<br>oceanographic and<br>eccological processes<br>controlling BOBLME<br>living marine<br>resources.<br>-FSP in support of<br>improved<br>management of<br>existing and creation<br>of new MPA/sfish<br>refugia approved and<br>implemented.<br>- establishment of<br>- establishment of<br>regional MPA<br>monitoring program<br>- development of a<br>regional network of<br>MAtion<br>MPA managers<br>- development of<br>argeional network of<br>agreed to system-<br>wide environmental<br>health indicators.<br>- BOBLME<br>countries<br>None<br>- C<br>- Stratey and action<br>pollution monitoring.<br>- BOBLME<br>None<br>- BOBLME<br>None<br>- C<br>- Stratey and action<br>pollution monitoring.<br>- BOBLME<br>None<br>- C<br>- Stratey and action<br>pollution monitoring.<br>- BOBLME<br>None<br>- C<br>- BOBLME<br>None<br>- C<br>- Stratey and action<br>pollution monitoring.<br>- BOBLME<br>None<br>- C<br>- C<br>- C<br>- C<br>- C<br>- C<br>- C<br>- C<br>- C<br>- C  | <ul> <li>Agreed to plan of</li> </ul> | None   | - | - | 1 | -  | -  | -   | ARWP        | MIS | RCU         |
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| Component Four:<br>- Establishment of<br>agreed to system-<br>wide environmental<br>health indicators.None1ARWP<br>System-<br>wide planMISRCU<br>Consultants- Strategy and action<br>pollution monitoring.<br>- BOBLME countriesNoneARWP<br>System-<br>wide planMISRCU<br>Consultants- Strategy and action<br>pollution monitoring.<br>- BOBLME countriesNone BOBLME countries<br>agree to water qualityNone3060100reportMISRCU<br>BOBLME  | Component Four:<br>- Establishment of<br>agreed to system-<br>wide environmental<br>health indicators.<br>- Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countries<br>agree to water quality<br>criteria (%).None1ARWP<br>System-<br>wide planMISRCU<br>ConsultantsNoneMISRCU<br>ConsultantsBOBLME countries<br>agree to water quality<br>criteria (%).NoneARWP<br>Technical<br>reportMISRCU<br>Consultants   | base established.                     | ms     |   |   |   |    |    |     |             |     |             |
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| - Establishment of<br>agreed to system-<br>wide environmental<br>health indicators.None1ARWP<br>System-<br>wide planMISRCU<br>Consultants- Strategy and action<br>pollution monitoring.NoneARWP<br>System-<br>wide planMISRCU<br>Consultants- Strategy and action<br>pollution monitoring.NoneMISRCU<br>Consultants- BOBLME countries<br>agree to water qualityNone3060100<br>%reportMISRCU<br>BOBLME  | - Establishment of<br>agreed to system-<br>wide environmental<br>health indicators.<br>- Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countriesNone1ARWP<br>System-<br>wide planMISRCU<br>ConsultantsNoneMISRCU<br>ConsultantsBOBLME countries<br>agree to water quality<br>criteria (%).NoneMISRCU<br>ConsultantsNoneMISRCU<br>ConsultantsBOBLME countries<br>agree to water quality<br>criteria (%).None3060100<br>%reportMISRCU<br>BOBLME<br>countries   | <b>Component Four:</b>                |        |   |   |   |    |    |     |             |     |             |
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| wide environmental<br>health indicators.Nonewide plan- Strategy and action<br>plan for regional<br>pollution monitoring.NoneMISRCU<br>Consultants- BOBLME countries<br>agree to water qualityNone3060100reportMISRCU<br>BOBLME   | wide environmental<br>health indicators.<br>- Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countries<br>agree to water quality<br>criteria (%).NoneMISRCU<br>ConsultantsNoneARWP<br>Technical<br>reportConsultantsBOBLME countries<br>agree to water quality<br>criteria (%).None3060100<br>%reportMISRCU<br>BOBLME<br>countries  | agreed to system-                     |        |   |   |   |    |    |     | System-     |     | Consultants |
| health indicators.None Strategy and action<br>plan for regional<br>pollution monitoring.NoneARWP<br>Technical<br>reportMISRCU<br>Consultants- BOBLME countries<br>agree to water qualityNone3060100reportMISRCU<br>BOBLME  | health indicators.<br>- Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countries<br>agree to water quality<br>criteria (%).NoneARWP<br>Technical<br>reportMISRCU<br>ConsultantsNone3060100reportMISRCU<br>BOBLME<br>countries   | wide environmental                    |        |   |   |   |    |    |     | wide plan   |     |             |
| - Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countriesNoneARWP<br>ARWP<br>Technical<br>%MISRCU<br>Consultants- BOBLME countries<br>agree to water qualityNone3060100reportMISRCU<br>BOBLME  | - Strategy and action<br>plan for regional<br>pollution monitoring.<br>- BOBLME countries<br>agree to water quality<br>criteria (%).NoneARWP<br>Technical<br>with a straight and   | health indicators.                    |        |   |   |   |    |    |     | 1           |     |             |
| plan for regional<br>pollution monitoring.NoneSolutionARWP<br>Technical<br>%Consultants- BOBLME countries<br>agree to water qualityNone3060100reportMISRCU<br>BOBLME   | plan for regional<br>pollution monitoring.<br>- BOBLME countries<br>agree to water quality<br>criteria (%).None3060100ARWP<br>Technical<br>reportMISConsultants<br>BOBLME<br>countriesNone3060100reportMISRCU<br>BOBLME<br>countries   | - Strategy and action                 | None   | - | - | - | -  | -  | -   |             | MIS | RCU         |
| pollution monitoring.<br>- BOBLME countries<br>agree to water qualityNone3060100Technical<br>reportMISRCU<br>BOBLME  | <i>pollution monitoring.</i><br>- BOBLME countries<br>agree to water quality<br>criteria (%).<br>None  | plan for regional                     |        |   |   |   |    |    |     | ARWP        |     | Consultants |
| - BOBLME countries None 30 60 100 report MIS RCU BOBLME  | - BOBLME countries<br>agree to water quality<br>criteria (%). None 30 60 100 report MIS RCU<br>% % % % ARWP<br>Regional<br>agreement ARWP  | pollution monitoring.                 |        |   |   |   |    |    |     | Technical   |     |             |
| agree to water quality % % % BOBLME  | agree to water quality<br>criteria (%).  | - BOBLME countries                    | None   | - | - | - | 30 | 60 | 100 | report      | MIS | RCU         |
|  | criteria (%). ARWP Regional agreement countries  | agree to water quality                |        |   |   |   | %  | %  | %   | 1           |     | BOBLME      |
| criteria (%).  | Regional<br>agreement  | criteria (%).                         |        |   |   |   |    | -  | -   | ARWP        |     | countries   |
| Regional   | agreement  |                                       |        |   |   |   |    |    |     | Regional    |     |             |
| agreement  |  |                                       |        |   |   |   |    |    |     | agreement   |     |             |
|  |  |                                       |        |   |   |   |    |    |     | -           |     |             |
# 3. Bay of Bengal LME

| Component Five:<br>- Regional co-<br>operation promoted                                    | None | 1       | 1       | 1       | 1       | 1       | 1        | ARWP<br>PSC reports   | MIS | RCU<br>PSC |
|--|------|---------|---------|---------|---------|---------|----------|---|-----|------------|
| though meetings of<br>the PSC.<br>- Project monitoring<br>program established<br>and under | None | 1       | -       | -       | -       | -       | -        | ARWP  | MIS | RCU        |
| implementation.<br>- Project results and<br>"lessons learned"<br>disseminated.             | None | 10<br>% | 20<br>% | 50<br>% | 70<br>% | 90<br>% | 100<br>% | ARWP<br>Press<br>releases<br>Videos<br>Website (#<br>of "hits") | MIS | RCU        |

# THE BENGUELA CURRENT COMMISSION



# 4. THE BENGUELA CURRENT LME

## 4.1 BACKGROUND

### **Project status**

The first Ministerial Conference of the *Benguela Current Commission* took place in Namibia in July 2007. Current information on the BCLME projects is available through the BCC website, <u>www.benguelacc.org</u> and includes information on the BENEFIT [Benguela-Environment-Fisheries-Interaction and Training (see <u>http://www.benefitprogram.org</u>)] and BCLME [Benguela Current Large Marine Ecosystem Program (see <u>http://www.bclme.org</u>)] programs.

# 4.2 BENGUELA CURRENT LME GEF PROJECT ID 789 AND 3305 DETAILS AND CONTACT

#### Table 4.1 GEF Project ID 789 Project Details

## Regional - Implementation of the Strategic Action Programme (SAP) Toward Achievement of the Integrated Management of the Benguela Current Large Marine Ecosystem (LME)

| GEF Project ID      | 789   |
|---------------------|---|
| UNDP PMIS ID        | 96  |
| Project Name        | Implementation of the Strategic Action Programme (SAP) Toward Achievement of the Integrated Management of the Benguela Current Large Marine Ecosystem (LME) |
| Country             | Regional (Angola, Namibia, South Africa)  |
| Region              | Africa  |
| Focal Area          | International Waters  |
| Operational Program | 8   |
| Approval Date       | May 01, 2000  |
| Project Status      | CEO Endorsed  |
| Implementing Agency | UNDP - United Nations Development Programme   |
| Executing Agency    | United Nations Office for Projects Services   |

## 4. Benguela Current LME

- Description Several major transboundary problems affecting the Benguela Current ecosystem have been identified during PDF-B works, the principal one being the decline of commercial fish stocks and non-optimal harvesting of living resources exacerbated by natural environmental variability. Additional concerns are the deterioration of water quality due to mining and drilling activities, the loss of critical habitats and threats to biodiversity. Based on these findings, the littoral countries have agreed on a program of actions (SAP) aimed at achieving the integrated management of the ecosystem, including the creation of the Benguela Current Commission , and a vast array of local, national and regional actions. The proposed project would support the countries in this effort through the establishment of the Interim Benguela Current Commission (PCU), the development of a series of assessments, surveys and plans, training and capacity building (the latter defined by the signatories of the SAP as of the "highest priority"), and the securing of additional financing.
- Implementation Status The project held a ministerial conference to support the setting up and to reach agreement on the hosting arrangements for the Benguela Current Commission (BCC) on the 20th July 2007 in Windhoek. A BCC management meeting was held on 19 July 2007. The project's CTA is acting as the Executive Secretary for the BCC. The last Project Steering Committee meeting was held in Cape Town from 23-26 July 2007. The project has commissioned a final evaluation exercise currently underway. The BCLME/BENEFIT Symposium, including a donor conference meeting is planned for 18-22 November 2007.

GEF Grant 15.458 US\$m

Cofin Amount 23.450 US\$m

Project Cost 38.908 US\$m

#### **Project Documents**

Project Appraisal Document (for CEO Endorsement)

Project Document for WP (Part

Project Document for WP (Annexes)

#### Table 4.2 GEF Project # 3305 Details

## Regional - Implementation of the Benguela Current LME Action Program for Restoring Depleted Fisheries and Reducing Coastal Resources Degradation

| GEF Project ID      | 3305  |
|---------------------|---|
| UNDP PMIS ID        | 3849  |
| Funding Source      | GEF Trust Fund  |
| Project Name        | Implementation of the Benguela Current LME Action Program for Restoring Depleted Fisheries and Reducing Coastal Resources Degradation |
| Country             | Regional (Angola, Namibia, South Africa)  |
| Region              | Africa  |
| Focal Area          | International Waters  |
| Operational Program | 8   |
| Strategic Program   | IW-2  |
| Pipeline Entry Date | December 18, 2006   |
| PIF Approval Date   | August 31, 2007   |
| PPG Approval Date   | April 16, 2007  |

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| Approval Date                    | November 16, 2007   |
|----------------------------------|---|
| CEO Endorsement Date             | February 09, 2009   |
| Project Status                   | CEO Endorsed  |
| GEF Agency                       | UNDP - United Nations Development Programme   |
| Executing Agency                 | UNOPS   |
| Description                      | The overall reduction in degradation of the BCLME, with emphasis on the restoration of its depleted fisheries, through effective implementation and long-term sustainability of the BCLME SAP. Project Objective: The implementation of the BCLME SAP through the adoption of national policy reforms, the sustainable institutionalisation of a regional Commission, and the endorsement and ratification of a binding international Treaty for the LME. |
| Implementation Status            |   |
| PPG Amount                       | 310,450 US\$  |
| GEF Project Grant                | 5,138,460 US\$  |
| GEF Grant                        | 5,448,910 US\$  |
| Cofinancing Total                | 62,029,339 US\$   |
| Project Cost                     | 67,478,248 US\$   |
| GEF Agency Fees                  | 544,892 US\$  |
| GEF Project Grant (CEO<br>Endo.) | 5,138,460 US\$  |
| Cofinancing Total (CEO<br>Endo.) | 68,946,335 US\$   |
| Project Cost (CEO Endo.)         | 74,395,245 US\$   |
| GEF Agency Fees (CEO<br>Endo.)   | 544,891 US\$  |
|                                  | Project Documents   |
|                                  | Supplemental PPG Document   |
|                                  | PPG Document (Revised)  |
|                                  | PIF Document (final)  |
|                                  | Endorsement Letter from Government  |
|                                  | CEO endorsement document SAP final version  |
|                                  | Annexes   |
|                                  | Annexes   |
|                                  | BCLME ProDoc Annexes I-IV   |
|                                  | Project document w revised TBWP   |
|                                  | Project document  |
|                                  | Supplementary information   |
|                                  | Request for CEO Endorsement   |
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## 4. Benguela Current LME

## Table 4.3 GEF Project 2571 Details

## Regional - Distance Learning and Information Sharing Tool for the Benguela Coastal Areas (DLIST-Benguela)

| GEF Project ID           | 2571  |
|--------------------------|---|
| UNDP PMIS ID             | 3153  |
| Funding Source           | GEF Trust Fund  |
| Project Name             | Distance Learning and Information Sharing Tool for the Benguela Coastal Areas (DLIST-Benguela)  |
| Country                  | Regional (Angola, Namibia, South Africa)  |
| Region                   | Africa  |
| Focal Area               | International Waters  |
| Operational Program      | 10  |
| PDF-A Approval Date      | August 18, 2004   |
| Approval Date            | March 10, 2005  |
| GEF Agency Approval Date | July 19, 2005   |
| Project Status           | IA Approved   |
| GEF Agency               | UNDP - United Nations Development Programme   |
| Executing Agency         | UNOPS   |
| Description              | The overall aim of DLIST-Benguela is to increase access of local communities to information that is critical to environmental management and sustainable livelihood creation, founded on the Benguela Current's coastal and marine resources. Already through the pilot, as a tool accessible to a wide range of stakeholders, DLIST is ideally positioned to translate the outputs from the science and institutional building actions and investigations of the GEF IW BCLME program, and the BENEFIT program into management action, through mass education and awareness building amongst stakeholder communities. The BCLME Program's focus is on facilitating adaptive management of the LME based on sound science and the active participation of all concerned stakeholders. The Program is providing support for the establishment of an Interim Benguela Current Commission (IBCC). Capacity building, within the IBCC and associated structures is considered key to the sustainable utilization of open sea resources. DLIST can contribute to the institution building/ capacity building by including a larger range of stakeholders in the overall management effort, and by broadening the management constituency. This is because DLIST promotes the sharing of ideas between coastal interest groups, different tiers of government and between a wide array of players that include local communities and the private sector. It also brings to its users information on emerging opportunities, shares the "lessons learned" by different sectors of society, and provides DLIST users with a strong and growing information base relating to the BCLME and |
| Implementation Status    | Opportunities for course development in Namibia were explored, with prospects of the UNAM course to start running in the first semester of 2008. The way forward for the Polytechnic of Namibia course was agreed upon and possibilities of designing a course for NACOMA were discussed. The project's mid-term review was conducted on 29 June 2007. The mid-term review indicated that the project is well on track, however a few changes are required to the project's indicators to better measure the outcomes.  |
| PDF A Amount             | 25,000 US\$   |
| GEF Project Grant        | 748,000 US\$  |
| GEF Grant                | 773,000 US\$  |
| Cofinancing Total        | 797,801 US\$  |
| Project Cost             | 1,570,800 US\$  |
| GEF Agency Fees          |   |
|                          | Project Documents   |

Part I

Endorsement Letter from Government

Project Document for CEO Approval

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#### 4.3 CONTACTS

#### **BENGUELA CURRENT COMMISSION SECRETARIAT**

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# Advisory Groups and Activity Centres Associated with the Benguela Current Large Marine Ecosystem Strategic Action Programme (BCLME – SAP)

- 1. Advisory Group on Fisheries and Other Living Marine Resources
- 2. Advisory Group on Environmental Variability, Ecosystem Impacts and Improved Predictability
- 3. Advisory Group on Biodiversity and Ecosystem Health
- 4. Advisory Group on Marine Pollution
- 5. Advisory Group on Legal and Maritime Affairs
- 6. Advisory Group on Information and Data Exchange
- 7. Advisory Group on Training and Capacity Development

#### 8. Activity Centres:

Activity Centre 1: Activity Centre 2: Activity Centre 3 Living Marine Resources (Swakopmund, Namibia) Environmental Variability (Cape Town, South Africa) Biodiversity, Ecosystem Health and Pollution (Luanda, Angola)

## 4.4 EXCERPTS FROM PROJECT DOCUMENTS

#### PART II: PROJECT JUSTIFICATION FROM GEF PROJECT ID 3305

# **A.** DESCRIBE THE PROJECT RATIONALE AND THE EXPECTED MEASURABLE GLOBAL ENVIRONMENTAL BENEFITS:

Gef 4'S Strategic Program 1 identifies the now-serious problem of depletion of fish stocks through over-fishing and non-selective and/or destructive fishing practices. Under the GEF 4 Interim Strategy and Priorities for International Waters (IW), Strategic Objective (SO) 2 aims to play a catalytic role in addressing transboundary water concerns by assisting countries to utilize the full range of technical assistance, economic, financial, regulatory and institutional reforms that are needed, including active leveraging of co-financing.

This represents a serious transboundary problem for Angola, Namibia and South Africa, as well as a global concern requiring multilateral action and assistance. GEF 4 has recognised that the global impact of the decline in fish stocks and associated destructive fishing practices is having long-term and chronic implications in terms of depletion of species and biodiversity alongside an overall loss of ecosystem integrity, stability and function. The BCLME represents one of the most productive LMEs in the world, yet it is also one that is experiencing increasing pressure on its fisheries and on the transboundary ecosystem as a whole.

However, the BCLME Program is approaching a critical juncture wherein the successful first stage of partnership development and the advancements in knowledge and understanding of the LME and its components need to be translated into both national and regional transboundary ecosystem management procedures and mechanisms. This needs to be achieved essentially through implementation of the Strategic Action Program (SAP) (particularly in terms of policy, legislative and management reforms) as part of the adoption of the Interim BCLME Agreement, the creation of the BCC, and evolution and development of a full multilateral Treaty. This strategy of using foundational processes to support and stimulate political commitment and collective action which can then deliver policy, legislative and institutional reforms is in line with the aims of the GEF 4 Strategic Programs (SPs). This next stage is critical if the overall intent of adopting a sustainable and effective LME management strategy is to be realised. There is a genuine risk that this momentum could be lost and that the existing partnerships could unravel if the successes and achievements made so far are not consolidated and stabilised through permanent mechanisms, structures and agreements. There is a strong political willingness and commitment to identify and adopt such a permanent strategy with its associated infrastructure and formal agreements, burt politicians and their advisors are understandably cautious and need to feel assured that any such long-term commitments and binding arrangements are workable and practicable. This is particularly important to the three participating countries in view of the fact that such an innovative LME management approach has not been tried before and that the BCLME Program will be very much a testing-ground for such a strategy. Consequently, there is a positive intent to move forward but there is also a strong determination that this should be undertaken in a flexible and transparent manner that serves to build the valuable and essential trust and partnerships that are the mark of success of the earlier stages of the BCLME Program, and which will provide the strong foundation for a Commission and associated Treaty, while easing the passage for requisite national reforms and national political understanding and support for the entire LME process. In this context, the countries have demonstrated and continue to demonstrate growing commitment and determination to adopt an LME management approach, yet there are still outstanding issues and concerns that need the guidance and support of outside agencies such as GEF and other donors.

The BCLME SAP IMP Project will aim to restore depleted fisheries and reduce coastal resource degradation within one of the world's most commercially important and strategic LMEs, demonstrating global benefits to conservancy and resources management. The Project will be primarily addressing the LME module on Fish and Fisheries, as living marine resources are the principle area of concern to the countries. However, the sustainable management of these living marine resources cannot be addressed in isolation from the importance of related productivity, the effects of pollution, associated biological habitat, and the need to maintain the overall welfare and quality of the ecosystem as a whole within a highly variable environment. Closely linked to these by way of cause and effect are the socioeconomic implications of coastal communities and industries. Therefore, all 5 LME modules are essentially embraced within this project. Globally, the project will address over-exploitation of fish stocks (now a serious issue at the international level) within a major international fishery.

# Excerpt from Advisory Mandate of the Benguela Current Commission

The Commission may, among other matters, consider and make recommendations, in accordance with national laws, to the Contracting Parties concerning -

- a. the monitoring, control and surveillance of marine fisheries;
- b. the regulation of access to fisheries;
- c. the determination of optimum levels of harvesting in respect of stocks which are known or suspected to be shared or straddling stocks, or where the harvesting of those stocks is likely to have significant impact on the Benguela Current Large Marine Ecosystem, the conservation of the biological diversity of the Benguela Current Large Marine Ecosystem;
- d. the conservation of the biological diversity of the Benguela Current Large Marine Ecosystem
- e. the implementation of integrated coastal management and of the ecosystem approach in accordance with international law and non-binding international undertakings made by the Contracting States;
- f. the establishment of a system of marine protected areas;
- g. the rehabilitation of environmentally degraded areas;
- h. the coordination of regional efforts to conserve species such as sea birds which are not harvested;
- the prevention of the introduction of harmful and invasive alien species (including the coordination of efforts to manage ballast water and sediment within the Benguela Current Large Marine Ecosystem);
- j. responses to harmful algal blooms;
- environmental impact assessment and other procedures for the planning and approval of new projects and activities which have the potential to impact on the Benguela Current Large Marine Ecosystem;
- I. processes and standards for minimizing and remediating the environmental impacts arising from marine prospecting, mining and dredging and from the exploration and development of oil and gas fields, including their associated pipelines;
- m. contingency plans for dealing with extreme events and threats such as major oil spills;
- n. the adoption and enforcement of harmonized regulatory frameworks for the discharge of sewage, pollutants, waste and other pollution control measures;
- o. guidelines on water quality standards within the Benguela Current Large Marine Ecosystem;
- p. maritime safety and related matters with the potential to impact on the Benguela Current Large Marine Ecosystem; and
- q. the responsibilities, procedures and routines for the exchange of information and liaison between authorities in the different Contracting States.

#### The Ecosystem Advisory Committee (EAC) of the Benguela Current Commission

**The Ecosystem Advisory Committee** (EAC) consists of experts nominated by each of the Contracting States. The role of the EAC is to provide the best available scientific, management, legal and other information and expert advice concerning the conservation and ecologically sustainable use and development of the BCLME AND to build capacity within the Contracting States to generate and provide the information and expert advice on a sustainable basis. Working groups that may be established by the EAC may include any person with appropriate expertise or who represents a particular sector or group of people with an interest in the matter being dealt with by the working group. The Ecosystem Advisory Committee submits annually to the Commission, a draft **work plan and budget** for the forthcoming two years **and** a draft **annual report** of its activities during the previous year.

# 5. BLACK SEA LME

(NOW PART OF THE DANUBE RIVER AND BLACK SEA PROJECT, UNDER THE WORLD BANK AND GEF INVESTMENT FUND)

## 5.1 BACKGROUND<sup>§</sup>

## Project History

The Project has reached 15 years of GEF International Waters intervention. The first TDA was complete in 1996. The 2<sup>nd</sup> TDA assesses the environmental status of the Black Sea, focusing on the major transboundary problems. **Project name:** Black Sea Ecosystems Recovery Project (BSERP), aims to control eutrophication, hazardous substances and related measures for rehabilitating the Black Sea LME. **Phase 2 (2004 – 2007) was completed by the six countries adjacent to the Black Sea LME.** Four transboundary problems were identified. The Black Sea LME project supports the implementation of governance reforms and stress reduction measures to address nutrient over-enrichment. Several reports including, Implementation of the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea 2002 – 2007, are available at the Black Sea Commission's website (www.blacksea-commission.org).





## Project Results:

As a result of GEF's 15 years of support to both foundational (TDA/SAP) work and implementation of agreed reforms and investments in the Danube/Black Sea basin, the overall burden of nutrient and other pollution to the Danube/Black Sea basin system has been reduced and the Black Sea ecosystem is showing measurable progress in recovery including virtual elimination of the large dead zone once prevalent over much of the northwest shelf of the Black Sea and the return of several species only recently considered locally extinct. The pilot project on Vessel Traffic Oil Pollution Information System (VTOPIS) pilot project was successfully completed. All developed products are now installed at the Bulgarian Maritime Administration.

Good progress has been made in strengthening the Black Sea Commission. There is a need for further participation of the wider public in the decision making process for the Black Sea LME and for the development of regional

<sup>&</sup>lt;sup>§</sup> This section on the Black Sea LME was written by S. Heileman, W. Parr, and G. Volovik, V-8 Black Sea LME, and first appeared in Sherman K and Hempel G, eds. The UNEP Large Marine Ecosystem Report (2008), 203-217. Figure numbering from that volume is retained here.

environmental commissions as public-oriented, transparent management bodies. These mechanisms are to be further developed for the Black Sea. Turkey has become increasingly more involved in project implementation.

The Black Sea LME project made important progress towards financial and institutional sustainability through solid country performance in meeting financial goals and obligations to transboundary water institutions. Progress was made on the revision of the Bucharest Convention. A feasibility study was completed on a proposed ICZM Protocol which includes short-term application of soft law documents (e.g. Code of Practice), given the likely lengthy time frame to adopt the ICM protocol. Progress was made in updating the SAP, with 5 of 6 countries (except Russia) having fully agreed on the text and content. The SAP specifically accounts for legislative developments in each of the Black Sea countries. Discussion on a broader update to the Black Sea Convention was initiated. Countries agreed to increase their contributions by 25% following an institutional review. Over 120 Black Sea events were organized and 20,000 materials were produced for distribution in the 6 Black Sea countries for the International Black Sea Day. The public audience was estimated at 10-13 million people. Possible future sources of support are being identified among international donors, transnational industries and national banks. The Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea 2009, adopted at the Ministerial Meeting/Diplomatic Conference in Sofia, Bulgaria, 17 April 2009, elaborates on the increasingly efficient roles of the activity centers in all the participating countries.

## 5.2 GEF ID 2263 PROJECT DETAILS

| Table 5 1   | CEE Drainat ID | 4500 Detaile  | Degional    | Control of | Eutrophiostion | Dhase  | 4 |
|-------------|----------------|---------------|-------------|------------|----------------|--------|---|
| I able J. I | GEI FIOJECTID  | 1500 Details- | -ivegional- |            | Luttophication | Fliase | 1 |

## Regional - Control of Eutrophication, Hazardous Substances and Related Measures for Rehabilitating the BLACK SEA Ecosystem: Phase 1

| GEF Project ID         | 1580   |
|------------------------|--|
| UNDP PMIS ID           | 2183   |
| Funding Source         | GEF Trust Fund   |
| Project Name           | Control of Eutrophication, Hazardous Substances and Related Measures for Rehabilitating the BLACK SEA Ecosystem: Phase 1 |
| Country                | Regional (Bulgaria, Georgia, Romania, Russian Federation, Turkey, Ukraine)   |
| Region                 | Europe and Central Asia  |
| Focal Area             | International Waters   |
| Operational<br>Program | 8  |
| Pipeline Entry<br>Date | May 01, 1998   |
|                        |  |

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| PDF-B Approval<br>Date           | August 11, 1999   |
|----------------------------------|---|
| Approval Date                    | May 09, 2001  |
| CEO Endorsement<br>Date          | December 19, 2001   |
| GEF Agency<br>Approval Date      | February 15, 2002   |
| Project Status                   | IA Approved   |
| GEF Agency                       | UNDP - United Nations Development Programme   |
| Executing Agency                 | UNOPS   |
| Description                      | Input of nutrients to the Black Sea from riverine and land based sources is the most important transboundary source of environmental degradation identified during previous GEF facilitated actions in the region. As a result, the littoral countries have agreed to take steps to reverse this trend (SAP). The project's objective is to help the Black Sea countries to prevent and remediate nutrient releases through evaluating the use of economic instruments, development and enforcement of environmental laws and regulations, strengthening public participation, monitoring of trends and compliance, and strengthening the institutional and management capacities of the recently established Black Sea Secretariat. This project is part of a wider GEF/UNDP/WB effort which is being designed to achieve nutrient runoff reduction throughout the Black Sea Basin, including the Danube. Two parallel complementary initiatives are being taken: (i) demonstrations of nutrient reduction investment projects (WB), and (ii) policy/legal reforms and capacity building in the riparian/littoral countries of the Black Sea (this proposal) and Danube. Activities for the Black Sea will include: (i) scheme for monitoring and evaluation of implementation of the SAP; (ii) feasibility study for nutrient reduction trading system; (iii) actions for revising the Bucharest Convention in accordance with the GPA; (iv) monitoring of trends and compliance; (v) facilitating the formulation and implementation of legislation with respect to nutrient discharge and control. Funds for project implementation among related ministries, the Istambul Commission, and international agencies; design a transparent public participation process; define execution arrangements between UNDP and the Istambul Commission; design a training program for the Commission's Secretariat staff. The proposal was submitted for Fall, 2000 but funding constraints prevented inclusion. It is now submitted as a phased element of the larger Strategic Partnership on the Danube/Black Sea basin. Phase I |
| Implementation<br>Status         | Activities of Tranche 1 of the Black Sea Ecosystem Regional Project were completed operationally in October 2004. Implementation of the Tranche 2 of the project is undergoing (PIMS #3065).  |
| PDF B Amount                     | 349,920 US\$  |
| GEF Project Grant                | 4,000,000 US\$  |
| GEF Grant                        | 4,349,920 US\$  |
| Cofinancing Total                | 3,945,000 US\$  |
| Project Cost                     | 8,294,920 US\$  |
| GEF Agency Fees                  |   |
| GEF Project Grant<br>(CEO Endo.) | 4,000,000 US\$  |
| Cofinancing Total<br>(CEO Endo.) | 3,945,000 US\$  |
| Project Cost (CEO<br>Endo.)      | 8,294,920 US\$  |
| GEF Agency Fees<br>(CEO Endo.)   |   |

| Project Documents                                |  |
|--|--|
| Project Appraisal Document (for CEO Endorsement) |  |
| Project Brief                                    |  |
| Appendix   |  |
| Annex 1A   |  |
| Annex 1B   |  |
| Annex 2  |  |
| PDF B  |  |

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#### Table 5.2 GEF Project ID 2263

## Regional - Control of Eutrophication, Hazardous Substances and Related Measures for Rehabilitating the Black Sea Ecosystem: Tranche 2

| GEF Project ID              | 2263   |
|-----------------------------|--|
| UNDP PMIS ID                | 3065   |
| Funding Source              | GEF Trust Fund   |
| Project Name                | Control of Eutrophication, Hazardous Substances and Related Measures for Rehabilitating the Black Sea Ecosystem: Tranche 2   |
| Country                     | Regional (Bulgaria, Georgia, Romania, Russian Federation, Turkey, Ukraine)   |
| Region                      | Europe and Central Asia  |
| Focal Area                  | International Waters   |
| Operational<br>Program      | 8  |
| Approval Date               | May 21, 2004   |
| CEO Endorsement<br>Date     | August 18, 2004  |
| GEF Agency<br>Approval Date | January 26, 2005   |
| Project Status              | Under Implementation   |
| GEF Agency                  | UNDP - United Nations Development Programme  |
| Executing Agency            | UNOPS  |
| Description                 | The overall objective of the BSERP is to support participating countries in the development of national policies and legislation and the definition of priority actions to avoid that discharge of nitrogen and phosphorus to the Black Sea exceed those levels as observed in 1997. This will require countries to adopt strategies and measures that |

permit economic development whilst ensuring the rehabilitation of coastal and marine ecosystems through pollution control and reduction of nutrients and hazardous substances. At the end of the Project Tranche II, it is expected that the institutional mechanism of the Black Sea Commission is reinforced and fully operational ensuring cooperation between all Black Sea countries to efficiently implement joint policies and actions and operate common management and control mechanisms.

| Implementation<br>Status         |                                     |
|----------------------------------|-------------------------------------|
| GEF Project Grant                | 6,000,000 US\$                      |
| GEF Grant                        | 6,000,000 US\$                      |
| Cofinancing Total                | 5,332,106 US\$                      |
| Project Cost                     | 11,332,106 US\$                     |
| GEF Agency Fees                  | 382,000 US\$                        |
| GEF Project Grant<br>(CEO Endo.) | 6,000,000 US\$                      |
| Cofinancing Total<br>(CEO Endo.) | 5,332,106 US\$                      |
| Project Cost (CEO<br>Endo.)      | 11,332,106 US\$                     |
| GEF Agency Fees<br>(CEO Endo.)   |                                     |
|                                  | Project Documents                   |
|                                  | Free setting Company 2 (Decision 1) |

Executive Summary2 (Revised)

Project Document2 for WP (Revised)

PAD-Appendix V

Endorsement Letter from Government

Project Appraisal Document (CEO Endorsement - Rev)

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## 5.3 CONTACT INFORMATION

#### Ms. Ivelina Vassileva, Chair of the Black Sea Commission Deputy Minister of Environment and Water, Bulgaria

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Ivan Zavadsky (UNDP) Project Manager, UNDP-GEF Regional Programme Director, Project manager of the Danube River Basin II project. <u>ivan.zavadsky@unvienna.org</u> 43.1.26060.5730

**Emilia Battaglini**, GEF ECA Regional Coordinator International Bank for Reconstruction and Development (WB)

**William Parr,** Eutrophication/Marine Pollution Specialist, Danube Regional Project, Black Sea Ecosystem Recovery Project (BSERP) <u>bill@bserp.org</u>

# 5.4 EXCERPT FROM GEF ID 2263 PROJECT DOCUMENT EXECUTIVE SUMMARY

 Table 5.4 Key Indicators, Assumptions, and Risks (from Logframe)

| Objectively Verifiable Indicators   | Assumptions (A) and Risks (R)   |
|---|---|
| Overall Project Objective:<br>All Black Sea countries have taken concrete<br>measures (including investment activities) in<br>the eutrophication causing sectors and have<br>reduced their load of nutrients and hazardous<br>substances on the Black Sea ecosystem and<br>major findings and recommendations of the<br>project have been incorporated in national<br>policies, strategies and, where possible, in<br>national legislation. This will lead to the<br>improvement of the Black Sea ecosystem by<br>decreasing of loads of nutrients and<br>hazardous substances. | R Low priority for environmental issues;<br>R Unfavourable conditions in countries with<br>transitional economies;<br>R Political instability in the region   |
| Objective 1: At the end of the Project<br>Tranche II, the institutional mechanism of the<br>Black Sea Commission is functioning and fully<br>operational ensuring cooperation between all<br>Black Sea countries to efficiently implement<br>joint policies and actions and operate<br>common management and control<br>mechanisms;   | <b>A</b> All Contracting Parties provide financial contributions in time and support national and regional bodies cooperating under the BSC;  |
| <b>Objective 2:</b> Policies and legal and<br>institutional instruments in all Black Sea<br>countries are enforced to assure sustainable<br>coastal zone and marine resource<br>management while reducing nutrients and<br>hazardous substances through the application<br>and translation into concrete actions of<br>revised policies and legislation in the<br>agricultural, industrial, transport and municipal<br>sectors.   | <ul> <li>A LBA Protocol recognised as a useful political tool;</li> <li>A Sufficient national support for implementation of pilot projects for ICZM provided;</li> <li>A Political commitment existing and financial means sufficient to revise and apply legislation;</li> <li>R Missing control and competition between fishermen leading to violation of fishing regulations and of fisheries-free zones.</li> </ul> |
| <b>Objective 3:</b> Economic analysis taking into account the principles of EU WFD guidelines conducted in all Black Sea countries and most cost-effective measures for pollution control and water use are identified and control systems (incl. pollution charges, fines and incentives) are accepted and implemented at the national level in the Black Sea countries.   | <ul> <li>A Reports from DRP for BG, RO and UA available in time;</li> <li>A Cooperation from national level and provision of data and information assured;</li> <li>A Commitment of IFIs incl. GEF-WB and bilateral donors to support the implementations of investment projects with grants and soft loans for further funding.</li> </ul>   |
| Objectively Verifiable Indicators   | Assumptions (A) and Risks (R)   |
| <b>Objective 4:</b> Institutional and organisational mechanisms for transboundary cooperation in water quality monitoring and information management including GIS are established and fully operational at the regional and national level by 2006 to assess water quality and nutrient reduction to the Black Sea; at the same time, results from scientific research on nutrient reduction and eutrophication are available to enhance reporting on the status of the Black Sea.   | <ul> <li>A Timely supply of reliable data from all national moniroing stations;</li> <li>A Support provided and Permissions granted by the countries in time to organise Black Sea surveys;</li> <li>A Support from all Black Sea countries to establish national information units linked to the Black Sea Information System;</li> </ul>  |

| <b>R</b> Insufficient technical competence of NGOs; |
|---|
| <b>R</b> Governments reluctance to work with NGOs;  |
| <b>R</b> Missing cooperation between NGOs;          |
| R "Umbrella" NGOs have not sufficient               |
| capacities to mobilize sufficient own financial     |
| resources   |
|   |
|   |

Note that the Details of the Black Sea LME and Danube River Investment Funding are given in Part II, this document.

# 6. CANARY CURRENT LME

## 6.1 BACKGROUND

### Present Status of Project

Project, approved in 2007, is presently in its First Phase (2007-2012). The Fisheries commission is in Dakar but there is not yet a host country or adequate headquarters. No UNEP representative is based in region. Six pilot demonstration projects cover a wide range of issues and habitats. Not all demonstration sites have been chosen; a preliminary TDA identifies specific priority transboundary concerns and actions to address them.

## 6.2 GEF Project ID 1909 PROJECT DETAILS

#### Table 6.1 GEF ID 1909 Protection of the Canary Current Large Marine Ecosystem

## Regional - Protection of the Canary Current Large Marine Ecosystem (LME)

| GEF Project ID                           | 1909   |
|--|--|
| Funding Source                           | GEF Trust Fund   |
| Project Name                             | Protection of the Canary Current Large Marine Ecosystem (LME)  |
| Country                                  | Regional (Cape Verde, Gambia, Guinea, Guinea-Bissau, Morocco, Mauritania, Senegal)   |
| Region                                   | Africa   |
| Focal Area                               | International Waters   |
| Operational<br>Program                   | 8  |
| Pipeline Entry<br>Date                   | February 20, 1998  |
| PDF-B Approval<br>Date                   | August 26, 2003  |
| PDF-B<br>(Supplemental)<br>Approval Date | March 30, 2006   |
| Approval Date                            | September 05, 2007   |
| CEO Endorsement<br>Date                  | April 27, 2009   |
| Project Status                           | CEO Endorsed   |
| GEF Agency                               | FAO/UNEP   |
| Executing Agency                         | FAO/UNEP   |
| Description                              | To enable the countries of the Canary Current Large Marine Ecosystem to address<br>priority transboundary concerns on declining fisheries, associated biodiversity and<br>water quality through governance reforms, investments and management programs.<br>The long-term environmental goal of the CCLME program is to reverse the degradation<br>of the Canary Current Large Marine Ecosystem caused by over-fishing, habitat<br>modification and changes in water quality by adoption of an ecosystem-based<br>management approach. |
| Implementation<br>Status                 | This Block B proposal submitted Aug 21, 2003 represents a revision of a Block B proposal submitted in 2002 that was not sufficiently responsive to GEFSEC recommendations transmitted in a Feb 20, 1998 Memorandum from K King to A Djoghlaf regarding the original submission from UNEP. The project concept was  |

approved Feb 28, 1998, but the Block B request was to be revised to incorporate FAO involvement and focus on fisheries issues as the key transboundary concerns of the LME. As noted under "Recommendations", the Block B is now responsive and is being recommended for CEO approval.

| PDF B Amount                     | 340,000 US\$    |
|----------------------------------|-----------------|
| GEF Project Grant                | 8,090,000 US\$  |
| GEF Grant                        | 8,790,000 US\$  |
| Cofinancing Total                | 17,716,251 US\$ |
| Project Cost                     | 26,506,251 US\$ |
| GEF Agency Fees                  | 879,000 US\$    |
| GEF Project Grant<br>(CEO Endo.) | 8,090,000 US\$  |
| Cofinancing Total<br>(CEO Endo.) | 17,805,000 US\$ |
| Project Cost (CEO<br>Endo.)      | 26,595,000 US\$ |
| GEF Agency Fees<br>(CFO Endo.)   | 879,000 US\$    |

## **Project Documents**

PDF-B Document (Revised) Endorsement Letter from Government PDF-B Document (Supplemental) Executive Summary (Revised) Project Document for WP (Revised) Annexes

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#### Table 6.2 Priority Transboundary Issues Identified in the preliminary TDA

| Declining marine living resources                          | Habitat degradation                                  | Declining water quality                                  |
|--|--|--|
| <ul> <li>Decline and/or vulnerability of</li> </ul>        | <ul> <li>Disappearance and destruction of</li> </ul> | <ul> <li>Salinity changes in estuarine and</li> </ul>    |
| small pelagic resources                                    | mangroves  | terrestrial coastal environment                          |
| <ul> <li>Decline of demersal resources</li> </ul>          | <ul> <li>Degradation and modification of</li> </ul>  | <ul> <li>Oil pollution</li> </ul>                        |
| (finfish, cephalopods & crustaceans)                       | seabed and seamounts                                 | <ul> <li>Eutrophication of coastal waters due</li> </ul> |
| <ul> <li>Decline of, and threats to,</li> </ul>            | <ul> <li>Degradation and modification of</li> </ul>  | to nutrient inputs                                       |
| vulnerable sharks & rays                                   | wetlands (sensu Ramsar : coastal                     | <ul> <li>Alien invasive species</li> </ul>               |
| <ul> <li>Decline of marine turtles</li> </ul>              | zones, coral reefs, estuaries)                       | <ul> <li>Sediment mobilisation</li> </ul>                |
| <ul> <li>Decline of marine mammals</li> </ul>              |  | <ul> <li>Toxicity from pesticides</li> </ul>             |
| <ul> <li>Uncertain status &amp; impacts of tuna</li> </ul> |  |  |
| fisheries  |  |  |

## **6.3 CONTACTS INFORMATION**

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Geoff Brundrit <a href="https://brundrit@ocean.uct.ac.za">brundrit@ocean.uct.ac.za</a> (GOOS-AFRICA Chair)

Bradford Brown (for NOAA)

## 6.4 EXCERPT FROM PROJECT DOCUMENT

Background to fisheries issues In addition to the regional and national stakeholder consultations and reports from various specialized (expert) working groups, the Preliminary TDA benefited from a comprehensive report on transboundary fisheries issues for the CCLME. Fisheries of the northern zone of the CCLME have undergone several decades of intensive fishing activity, and most are classified as either fully or overexploited. Recent assessments of the FAO Working Group on the assessment of small pelagic fish off North West Africa concluded that 5 of the 10 stocks studied were found to be either fully or over-exploited. Sardine (Sardina pilchardus) stocks (the most important for the region) have been subject to large, unpredictable, fluctuations, indicating vulnerability. While not intensively exploited in the southern area of its distribution, the Central sardine stock was found to be overexploited. Round sardine (Sardinella aurita), with catches of around 300,000 tonnes in 2006, has been showing an overall downward trend in biomass since 1999, although with a slight increase in 2006. More than half of the demersal stocks studied, targeted both by artisanal and industrial fishing, are overexploited. Substantial reductions in biomass have been reported for some of the main specioes (e.g. Laurans, 2005). Recent calls have been made for efforts to restore the CCLME's declining demersal fisheries. Declines in landings are particularly acute for demersal resources, yet these are the most critical to artisanal fishing communities and therefore to poverty reduction. Shark and ray resources, supplying international demand for fins and regional demand for food, are subject to intensive overexploitation throughout most of the region by artisanal fisheries and are an important part of the by-catch of long line tuna fisheries. Out of 33 species assessed by regional members of the IUCN-SSC Sharks Specialists group, 15 were reclassified as either critically endangered (8 species), vulnerable (4) or near threatened (3). Non-finfish yields, especially those for octopus, have shown marked declines since the early 1990s. Lobster fisheries in both Cape Verde and Mauritania are in decline. Discards (estimated at 250.000-350,000 tonnes) have been cited as a further problem, particularly associated with cephalopod and shrimp trawl fisheries. Shrimp fisheries in the southern part of the zone are showing signs of over-exploitation.

| Country    | Fisheries                      | Environment   | Others  | Institutes   |
|------------|--------------------------------|---|---|--|
| Cape Verde | Directorate for<br>Fisheries   | Directorate for<br>Environment and its<br>departments | National<br>association of<br>merchant shipping | INDP   |
|            | Industrial fishing association |   | Port Authorities                                | Paritime & Ports<br>Institute                          |
|            | Fishers' Associations          |   | Directorate of Land management                  | National Institute of<br>Meteorology and<br>Geophysics |

#### Table 6.3 Activity Centers for government and national baseline activities

|               |   |  | Tourism<br>development  |          |
|---------------|---|--|---|----------|
|               |   |  | Coastguard  |          |
| Gambia        | Fisheries Department  | National Environment<br>Agency (NEA)   | Gambia Navy   | None     |
|               | GAMFIDA (fisheries development agency   | Department of Parks & Wildlife Management                                    | Central Statistics<br>Department  |          |
|               | Association of<br>Gambia Fishing  |  | Forestry<br>Department  |          |
|               | Companies<br>National Association<br>of Artisanal Fisheries<br>Organizations<br>(NAAFO) |  | Department of<br>Water Resources  |          |
|               |   |  | Gambia Tourism<br>Authority   |          |
| Guinea        | Ministry of Fisheries<br>& Aquaculture<br>including:                                    | Ministry for<br>Environment including<br>directions & centers<br>for:        | Observatory for<br>Maritime Guinea  | CERESCOR |
|               | Direction of Fisheries  | Prevention of Pollution & Nuisances  | National Direction<br>for Merchant<br>Shipping  | CNSHB    |
|               | National Center for<br>Fisheries Protection<br>& Surveillance                           | Protection of Nature   | Maritime<br>Navigation Agency   |          |
|               | National Fisheries<br>Observatory   | CNPEMMZC   | Directorate of<br>Meteorology   |          |
|               | Professional fishers' associations  | Protected Areas<br>Management  | Directorate of<br>Mines   |          |
|               |   | Environmental<br>Research  | Coastal Zone<br>Observatory   |          |
|               |   | Direction for Waters &<br>Forests  |   |          |
| Guinea Bissau | Ministry of Fisheries<br>& Maritime Economy<br>including:                               | Ministry for<br>Environment including:                                       | CIPA  |          |
|               | Directorate of<br>Fisheries   | Directorate of<br>Environment  | National Institute<br>of Applied<br>Research &<br>Technology<br>IBAP (Institute for<br>Biodiversity &<br>Protected Areas) |          |
| Mauritania    | Ministry for Fisheries<br>& Maritime Economy<br>including:                              | Directorate of<br>Environment (Min. of<br>Rural Development &<br>Environment | Directorate of<br>Merchant Marine<br>(littoral<br>management &<br>more typical<br>functions)                              | IMROP    |
|               | Fisheries directions  | Banc D'Arguin<br>National Park (PNBA)  | Directorate of Land<br>Management<br>(littoral<br>management)   |          |
|               | Fisher associations   |  | Directorate of<br>Mines including<br>services for:  |          |
|               | DSPCM (Fisheries<br>surveillance)   |  | Hydrocarbons  |          |

# Part I

# 6. Canary Current LME

|         |  |   | Environmental<br>Affairs                        |   |
|---------|--|---|---|---|
|         |  |   | Port Authorities                                |   |
| Могоссо | Ministry for Marine<br>Fisheries (MPM)<br>including the<br>Directorates for: | Ministry for Land<br>Management, Water &<br>Environment (various<br>directorates) | Royal Navy                                      | INRH  |
|         | Maritime Fisheries & Aquaculture   |   | National<br>Meteorological<br>Direction         | Research Unit on<br>the Conservation of<br>Natural resources  |
|         | Marine Training  |   |   |   |
|         | Juridical Affairs  |   |   |   |
|         | Fishing Industries   |   |   |   |
|         | Human resources  |   |   |   |
|         | International<br>Cooperation   |   |   |   |
|         | Federation of<br>Maritime Fisheries<br>Chanbers                              |   |   |   |
| Senegal | Directorate of<br>Fisheries  | Directorate of<br>Environment   | Directorate of<br>Tourism                       | Centre for Ecological<br>Monitoring                           |
|         | Directorate for<br>Protection &<br>Surveillance of<br>Fisheries              | Directorate of National<br>Parks  | Directorate for the exploitation of the sea bed | CRODT   |
|         | Unit for studies & planning  | Directorate of Water &<br>Forests   | Directorate of<br>Merchant Shipping             | Dakar Research<br>Institue (ISD)                              |
|         | Fisheries<br>associations  |   |   | Sciences Faculty (UCAD)                                       |
|         | (vanous)   |   |   | University Institute<br>for Fisheries &<br>Aquaculture (IUPA) |
|         |  |   |   | Institute of<br>Environmental<br>Sciences                     |

# 7. CARIBBEAN SEA LME

#### 7.1 BACKGROUND

#### **Project Status**

The GEF Project has three subregions including the Caribbean Sea, Guianas and North Brazil Shelf. Four pilot projects are being established. The Transboundary Diagnostic Analysis (TDA) workshop took place in 2006.

The Project was approved by GEF in April 2008. The PCU is housed at IOCARIBE, Cartagena, Colombia. The Project has just begun its first 5 year phase. The first steering committee meeting took place in September 2009.

#### Table 7.1 GEF Project ID 614 Details

## Regional - Demonstrations of Innovative Approaches to the Rehabilitation of Heavily Contaminated Bays in the Wider Caribbean

| GEF Project ID              | 614   |
|-----------------------------|---|
| UNDP PMIS ID                | 1443  |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Demonstrations of Innovative Approaches to the Rehabilitation of Heavily Contaminated Bays in the Wider Caribbean   |
| Country                     | Regional (Colombia, Costa Rica, Cuba, Jamaica)  |
| Region                      | Latin America and Caribbean   |
| Focal Area                  | International Waters  |
| Operational<br>Program      | 10  |
| Approval Date               | May 07, 1999  |
| CEO Endorsement<br>Date     | December 21, 2001   |
| GEF Agency<br>Approval Date | April 26, 2002  |
| Project Status              | IA Approved   |
| GEF Agency                  | UNDP/UNEP   |
| Executing Agency            | UN Office of Project Services   |
| Description                 | This initiative is a follow up of the Pilot Phase PRIF project "planning and Management of Heavily Contaminated Bays and Coastal Areas in the Wider Caribbean"; the project areas were Havana Bay (Cuba), Puerto Limon (Costa Rica0, Cartagena Bay (Colombia) and Kingston Harbour (Jamaica). This PRIF project resulted in the development of investment and institutional strenghtening plans and in the identification of sources of financing for the implementation of remedial actions. Leveraged baseline investments in the four bays were in excess of \$250 million. As a follow-up to the PRIF and on-going baseline, the proposed GEF project will leverage national co-financing to help two of the countries to overcome a number of key barriers to the adoption of best practices that limit the contamination of their national and adjacent international waters. |

This would be achieved by implementing demonstration/pilot projects for reducing the input of priority transboundary contaminants, the nutrients nitrogen and phosphorus, to havana Bay, Kingston Harbour and the adjacent Wider Caribbean. The project will also strengthen and/or help create new institutions responsible for the rehabilitation and sustainable management of the two bays. The project supports the mandate of the Cartagena Convention (Art.7 and Art. 13) as well as the new Land-Based Sources Protocol currently in preparation. UNEP, the co-implementing agency, will be responsible for the regional coordination, and for the sharing and dissemination of nutrient pollution control strategies in the Wider Caribbean region.

## 7. Caribbean Sea LME

| Implementation<br>Status         | During this quarter the 2007 Annual Programming Workshop has been held in order to carry out the review of 2006 activities, as well as to determine the accomplishment rate of the Mid-Term Evaluation recommendations. The 2007 AWP has been prepared and approved by national authorities. Several bidding processes for the purchase of the materials and equipment for the civil construction of the WTP and collectors system are underway. A UNOPS mission to Havana was carried out in order to train the project stakeholders on financial and procurement issues. Pending the final reception of the GEF financed equipment, material and financing, the Building Company has been able to impulse the civil works with own resources. The WTP lands movement was at 60%, the civil construction of the WTP was at 5%, the collectors system was at 7% (collector C3 at 47%) and the first and second stories of the Zero Emission Building were concluded. Delivery Rate: 4% |
|----------------------------------|--|
| PRIF Amount                      | 2,500,000 US\$   |
| GEF Project Grant                | 6,910,000 US\$   |
| GEF Grant                        | 9,410,000 US\$   |
| Cofinancing Total                | 25,860,001 US\$  |
| Project Cost                     | 35,270,000 US\$  |
| GEF Agency Fees                  |  |
| GEF Project Grant<br>(CEO Endo.) | 6,910,000 US\$   |
| Cofinancing Total<br>(CEO Endo.) | 25,853,000 US\$  |
| Project Cost (CEO<br>Endo.)      | 35,263,000 US\$  |
| GEF Agency Fees<br>(CEO Endo.)   |  |
|                                  | Project Documents  |
|                                  | Project Appraisal Document (for CEO Endorsement)   |
|                                  | Project Document for WP (Part 1)   |
|                                  | Project Document for WP (Part 2)   |
|                                  | Project Document for WP (Part 3)   |
|                                  | Project Document for WP (Part 4)   |

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#### 7.2 GEF PROJECT ID 1032 DETAILS

# Table 7.2 Regional - Sustainable Management of the Shared Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions

| GEF Project ID              | 1032  |
|-----------------------------|---|
| UNDP PMIS ID                | 2193  |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Sustainable Management of the Shared Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions   |
| Country                     | Regional (Antigua And Barbuda, Barbados, Brazil, Bahamas, Belize, Colombia, Costa Rica, Dominica, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Haiti, Jamaica, St. Kitts And Nevis, St. Lucia, Mexico, Nicaragua, Panama, St. Vincent and Grenadines)  |
| Region                      | Latin America and Caribbean   |
| Focal Area                  | International Waters  |
| Operational<br>Program      | 8   |
| PDF-A<br>Approval Date      | January 10, 2002  |
| Pipeline Entry<br>Date      | June 12, 2003   |
| PIF Approval<br>Date        | September 12, 2007  |
| PDF-B<br>Approval Date      | August 04, 2005   |
| Approval Date               | November 16, 2007   |
| CEO<br>Endorsement<br>Date  | April 11, 2008  |
| GEF Agency<br>Approval Date | April 30, 2008  |
| Project Status              | IA Approved   |
| GEF Agency                  | UNDP - United Nations Development Programme   |
| Executing<br>Agency         | UNOPS, IOC-UNESCo   |
| Description                 | Many living marine resources in the Caribbean Region are in crisis. Most of the fishery resources are coastal and are intensively exploited by large numbers of small-scale fishers. The majority of the human population in the Caribbean region lives in coastal community and there is high dependence on living |

population in the Caribbean region lives in coastal communities and there is high dependence marine resources for employment and food. There is also high demand for seafood in the tourism industry, a mainstay of the economy in many of the region's countries. Some species, such as lobster and conch are in high demand for export. These pressures have led to widespread depletion of these resources, a situation that must be reversed in accordance with the targets identified at the WSSD. This depletion has led to increased dependence and fishing pressure on offshore resources, which are already considered to be fully or overexploited. The living marine resources of the Caribbean LME are often shared between countries and the management and the recovery of depleted fish stocks will require cooperation at various geopolitical scales, but there are at present inadequate institutional, legal and policy frameworks or mechanisms for managing shared living marine resources across the region. There is a lack of capacity at the national level and information is lacking, particularly with relation to the transboundary distribution, dispersals and migrations of these organisms. This lack of knowledge represents a major barrier to sustainable management of these shared marine resources, even if an adequate mechanism for effective region-wide ecosystem-based management was in place. The establishment of an effective mechanism is the major challenge for management of transboundary resources and achievement of the WSSD targets There is considerable spatial and seasonal heterogeneity in productivity throughout the region. Areas of high productivity include the plumes of continental rivers, localized upwelling areas and near shore habitats (e.g., reefs, mangrove stands and seagrass beds). The trophic connection between these productive areas and other, less productive systems (e.g., offshore planktonic or pelagic systems), is poorly understood for this region. Likewise, food chain linkages between resources with differing scales of distribution and migration, such as flyingfish and large pelagics, both of which are exploited, are not considered in management, but may be critical to preventing the stock depletion that has occurred in many other systems

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where the requirements and or impacts of predators have not been considered in the exploitation of prey species. Despite the international cooperation indicated by country participation in agreements and organizations (see 'Country Drivenness' section), and heightened awareness throughout the region that an integrated approach is required for the Caribbean region, the knowledge base and technical and institutional capacity that are required to give effect to the variety of agreements and commitments is a severe constraint for most of the countries in the region. Even for those countries with substantial capacity at the national level, the regional institutional network that is required for Caribbean-wide integrated management is lacking and many fragmented institutional arrangements must be sorted out on regional and national scales before WSSD targets can be met. The specific objectives of the project are: 1.To identify, analyze and agree upon major transboundary issues, root causes and actions required to achieve sustainable management of the shared living marine resources in the Caribbean Sea LME; 2.To improve the shared knowledge base so that sustainable use and management of transboundary living marine resources will be possible; 3.To implement legal, policy and institutional (SAP) reforms regionally and nationally to achieve sustainable transboundary living marine resource management; 4.To develop an institutional and procedural approach to LME level monitoring, evaluation and reporting for management decisionmaking.

| Implementation<br>Status            | 11/5/04 email from Y. Glemarec: Endorsements still being gathered for PDF B proposal. PDF B expected to start early 2005. |
|-------------------------------------|---|
| PDF A Amount                        | 18,836 US\$   |
| PDF B Amount                        | 700,000 US\$  |
| GEF Project<br>Grant                | 7,080,000 US\$  |
| GEF Grant                           | 7,798,836 US\$  |
| Cofinancing<br>Total                | 48,300,000 US\$   |
| Project Cost                        | 56,098,836 US\$   |
| GEF Agency<br>Fees                  | 779,884 US\$  |
| GEF Project<br>Grant (CEO<br>Endo.) | 7,008,116 US\$  |
| Cofinancing<br>Total (CEO<br>Endo.) | 47,591,111 US\$   |
| Project Cost<br>(CEO Endo.)         | 55,318,063 US\$   |
| GEF Agency<br>Fees (CEO<br>Endo.)   | 772,695 US\$  |
|                                     | Project Documents   |
|                                     | PDF-A Document  |
|                                     | Project Concept (Revised)   |
|                                     | Revised Concept   |
|                                     | PDF-B Document  |
|                                     | PIF Document (final)  |
|                                     | Annex J   |
|                                     | Annex A   |
|                                     | Annex B   |
|                                     | Annex D   |
|                                     |   |
|                                     | Annex G   |
|                                     | Request for CEO Endorsement   |
| © 2007 Global Fr                    | Project Appraisal Document (for CEO Endorsement)  |
|                                     |   |

### Table 7.3 GEF Project ID 1254

## Regional - Integrating Watershed and Coastal Area Management (IWCAM) in the Small Island Developing States of the Caribbean

| GEF Project ID                           | 1254   |
|--|--|
| UNDP PMIS ID                             | 2195   |
| Funding Source                           | GEF Trust Fund   |
| Project Name                             | Integrating Watershed and Coastal Area Management (IWCAM) in the Small Island Developing States of the Caribbean   |
| Country                                  | Regional (Antigua And Barbuda, Barbados, Bahamas, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, St. Kitts And Nevis, St. Lucia, Trinidad and Tobago, St. Vincent and Grenadines)  |
| Region                                   | Latin America and Caribbean  |
| Focal Area                               | International Waters   |
| Operational<br>Program                   | 9  |
| Pipeline Entry<br>Date                   | October 01, 1999   |
| PDF-B Approval<br>Date                   | May 04, 2000   |
| PDF-B<br>(Supplemental)<br>Approval Date | September 23, 2002   |
| Approval Date                            | May 21, 2004   |
| CEO<br>Endorsement<br>Date               | February 18, 2005  |
| GEF Agency<br>Approval Date              | July 25, 2006  |
| Project Status                           | IA Approved  |
| GEF Agency                               | UNEP/UNDP  |
| Executing<br>Agency                      | The Secretariat of the Cartagena Convention; The Caribbean Environmental Health Institute  |
| Description                              | The overall objective of the proposed project will be to assist participating countries in improving their watershed and coastal zone management practices in support of sustainable development. The project will include the following components addressing areas of priority concern: coastal area management and biodiversity; tourism development; protection of water supplies; land based sources of pollution; climate change. Activities undertaken during the full project will include, amongst others, demonstrations in the fields of marine pollution reduction and waste management, land use, soil degradation and watershed management. Addressing water resources management and conservation under conditions of stress may include pilot projects demonstrating innovative approaches to: water storage, distribution, treatment and reuse, and to conservation of scarce resources in high demand sectors such as tourism. The project may also include pilot activities addressing information, management, policy and economic failures where these are identified as critical elements in the cusal relationships between environmental issues and problems and the societal causes of such problems. The objective of the PDF-B work is to develop a fully costed project brief and to establish an agreed institutional framework for execution of the full project activities. March 2004 - Work Program Inclusion The full project is the result of a commitment by the 13 participatory SIDS of the Caribbean Region to resolve the concerns regarding the inadequate and inappropriate approaches to sustainable development and natural resource management. Specifically the countries would wish to seek support in the development. The direct causal linkages between the threats to the coastal and watershed issues, processes |

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watershed environment and socio-economic/political issues are recognised. The need to address these linkages and the root causes in a sustainable manner at the socio-economic and policy level is paramount. By implementing the project activities the country of the region will significantly contribute to the protection of globally-significant biodiversity within the Caribbean region through the long-term sustainable management of biological resources and ecosystems, while mitigating or eliminating regional transboundary threats to those resources and ecosystems.

Implementation Status Progress was slow at inception due to the introduction of a third Executing Agency (UNOPS) and the need for Memoranda of Agreement between UNOPS and the demo projects. All but Cuba have seen progress made. By June of 2007, 8 demo sites had signed the MoA and received the first tranche of funds. Work plans have been prepared for 4 sites. Most have seen progress made, on-the-ground, with activities such as public awareness and environmental monitoring underway. Awareness activities, baseline data collection, and stakeholder consultations took place across the demo sites. Staff members were recruited for a number of demo projects and National Inception meetings or Intersectoral Committee meetings were held. Substantive work began on the demo projects in Jamaica, Tobago, Antigua, and St. Lucia.

PDF B Amount 316,000 US\$

| GEF Project<br>Grant                | 13,382,691 US\$  |
|-------------------------------------|------------------|
| GEF Grant                           | 13,990,841 US\$  |
| Cofinancing<br>Total                | 98,269,494 US\$  |
| Project Cost                        | 112,260,335 US\$ |
| GEF Agency Fees                     | 1,126,320 US\$   |
| GEF Project<br>Grant (CEO<br>Endo.) | 13,782,691 US\$  |
| Cofinancing<br>Total (CEO<br>Endo.) | 98,269,494 US\$  |
| Project Cost<br>(CEO Endo.)         | 112,660,335 US\$ |

GEF Agency Fees (CEO Endo.)

#### **Project Documents**

PDF-B Document (Revised)

Endorsement Letter from Government

<u>Appendixes</u>

Executive Summary (Revised)

Project Document for WP (Revised)

Endorsement Letter from Government

Appendix 1 of proj document

Project Appraisal Document (CEO Endorsement - Rev)

Project Appraisal Document (CEO Endorsement - Rev)

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## Table 7.4 GEF Project ID 1248 Details

# Regional - Reducing Pesticide Run-off to the Caribbean Sea

| GEF Project ID                   | 1248   |
|----------------------------------|--|
| Funding Source                   | GEF Trust Fund   |
| Project Name                     | Reducing Pesticide Run-off to the Caribbean Sea  |
| Country                          | Regional (Colombia, Costa Rica, Nicaragua)   |
| Region                           | Regional   |
| Focal Area                       | International Waters   |
| Operational<br>Program           | 10   |
| Pipeline Entry<br>Date           | July 01, 1998  |
| PDF-B Approval<br>Date           | July 01, 1998  |
| Approval Date                    | May 17, 2002   |
| CEO Endorsement<br>Date          | February 28, 2005  |
| GEF Agency<br>Approval Date      | October 28, 2005   |
| Project Status                   | IA Approved  |
| GEF Agency                       | UNEP - United Nations Environment Programme  |
| Executing Agency                 | Secretariat for the Cartagena Convention (UNEP-CAR/RCU) with the National Executing Agencies   |
| Description                      | The main objective of the project is to protect the Caribbean marine environment by reducing<br>the use of, and reliance on, pesticides in agricultural activities. The project will assist<br>Colombia, Costa Rica, Nicaragua and Panama to implement management practices and<br>measures to control the use of pesticides in the agricultural sector. Project elements include<br>monitoring and assessment of impact; demonstration of technology alternatives to intensive<br>pesticide use and management practices to reduce runoff and runoff impact; education and<br>training; development of incentives/institutional strengthening; and information management<br>and dissemination. The various elements will be co-ordianted through demonstration projects<br>that will serve also as the basis for development and implementation of sustainable and<br>widely applicable interventions in the region. |
| Implementation<br>Status         | Regional and National project management structures have been set-up. A Project Manager is<br>on board and National Coordinators were appointed by the National Focal Points. In a first<br>Steering Committee meeting agreements were made on the project implementation<br>mechanisms; the original workplan and budget were reviewed. Terms of reference have been<br>drafted and approved for the advisory panels and for the demo projects on Good Agricultural<br>Practices (GAP). The demo projects are in preparatory phase: the National Committees are<br>working on the selection of demo projects and the composition of the advisory panels that will<br>develop demo project guidelines.   |
| PDF B Amount                     | 295,000 US\$   |
| GEF Project Grant                | 4,290,000 US\$   |
| GEF Grant                        | 4,585,000 US\$   |
| Cofinancing Total                | 5,752,000 US\$   |
| Project Cost                     | 10,337,000 US\$  |
| GEF Agency Fees                  | 382,000 US\$   |
| GEF Project Grant<br>(CEO Endo.) | 4,290,000 US\$   |

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### Table 7.5 GEF Project ID 3766

## Regional - Testing a Prototype Caribbean Regional Fund for Wastewater Management (CReW)

| GEF Project ID           | 3766   |
|--------------------------|--|
| Funding Source           | GEF Trust Fund   |
| Project Name             | Testing a Prototype Caribbean Regional Fund for Wastewater Management (CReW)   |
| Country                  | Regional (Antigua And Barbuda, Barbados, Costa Rica, Guatemala, Guyana, Honduras, St. Lucia, Panama, Suriname)   |
| Region                   | Latin America and Caribbean  |
| Focal Area               | International Waters   |
| Operational<br>Program   |  |
| PIF Approval<br>Date     | September 26, 2008   |
| PPG Approval<br>Date     | December 18, 2008  |
| Approval Date            | November 13, 2008  |
| Project Status           | Council Approved   |
| GEF Agency               | IADB/UNEP  |
| Executing<br>Agency      | Caribbean Development Bank, UNEP CAR/RCU, Government Ministries, Local Municipalities and Wastewater Mgmt Utilities  |
| Description              | The project will pilot revolving financial mechanisms that can subsequently be established as feasible instruments to provide sustainable financing for the implementation of environmentally sound and cost-effective wastewater management measures. |
| Implementation<br>Status |  |
| PPG Amount               | 380,000 US\$   |
| GEF Project<br>Grant     | 20,000,000 US\$  |
| GEF Grant                | 20,380,000 US\$  |
| Cofinancing<br>Total     | 251,500,000 US\$   |
| Project Cost             | 271,880,000 US\$   |
| GEF Agency<br>Fees       | 2,000,000 US\$   |
|                          | Project Documents  |
|                          | PIF Document (Revised)   |
|                          | Endorsement Letter from Government   |
|                          | PPG Document (Revised)   |
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## 7.3 CONTACT INFORMATION

#### **CLME Project Coordinating Office**

Centre for Resource Management and Environmental Studies, The University of the West Indies Cave Hill Campus, Barbados

## 7. Caribbean Sea LME

GEF ID 1032 Project Website URL http://www.cavehill.uwi.edu/cermes/clme.html Region Americas Sub-Region Caribbean, Southern America Basin Wider

#### **Carribean Project Contacts**

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Robin Mahon, Director, CERMES, University of the West Indies, Cave Hill

Mr. Cesar Toro, UNESCO, IOC Secretary for IOCARIBE, Cartagena, Colombia Contact persons:

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Lucia Fanning, Director Marine Affairs Program, University of Dalhousie, Lucia.Fanning@dal.ca

## 7.4 EXCERPTS FROM THE PROJECT DOCUMENT 1032

#### 24. The proposed GEF Full project on the Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions would take the following approach:

- 1. Preparation of a preliminary Transboundary Diagnostic Analysis (TDA) and of a preliminary Strategic Action Programme (SAP) for Caribbean LME shared living marine resources;
- 2. Compilation and sharing of existing information and filling critical data gaps through targeted assessments, using new and improved information to update the TDA and SAP;
- 3. Implementation and building of capacity for legal, policy and institutional reforms for sustainable ecosystem management of Caribbean LME shared marine resources; and,
- 4. Development and institutionalization of process, stress reduction and environmental status indicators to track effectiveness of actions taken through the SAP.

#### **Project objectives**

25. The overall objective of the project is the sustainable management of the shared living marine resources of the Caribbean LME and adjacent areas through an integrated management approach that will meet the WSSD target for sustainable fisheries.

#### 26. The specific objectives of the project are:

- 1. To identify, analyze and agree upon major issues, root causes and actions required to achieve sustainable ecosystem management of the shared living marine resources in the Caribbean Sea LME:
- 2. Management of transboundary living marine resources;
- 3. To implement legal, policy and institutional (SAP) reforms to achieve sustain-able transboundary living marine resource ecosystem management; and,
- 4. To develop an institutional and procedural approach to LME level monitoring, evaluation and reporting.

#### Project structure and outputs

27. The project is focused on aligning institutions on the national and regional scales to sustainably manage near shore and deep-water fisheries and related habitats of the LME including the development and use of a knowledge base to support institutional decision making. As emphasized above and by relevant international agreements, implementation of governance activities will not be delayed due to lack of information. "Strengthening by doing" is a key

#### conceptual element of this project. 28. The Full Project will have four Components.

1. Analysis of transboundary LMR issues (TDA) and needed actions (SAP) (initial and update following ecosystem adaptive management approach);

Filling knowledge gaps needed for effective transboundary LMR ecosystem management;

3. Implementation of governance reforms (institutional, legal, and policy) for LMR ecosystem management;

LME level monitoring, evaluation and reporting including indicators;

**29. The expected duration of the Full project is 5 years** and it is anticipated that the project will be submitted to the December 2006 GEF Work Program.

#### 30. Each Component will include the following Activities and Outcomes:

# Component 1. Analysis of transboundary LMR issues and needed actions Activity 1.1

Conduct an initial (PDF-B) Transboundary Diagnostic Analysis (TDA) in which existing information will be reviewed and analyzed to fully characterize the nature, scope and root causes of transboundary living marine resource issues in Caribbean LME; update TDA with new information gathered in Component 2. Utilize results of GIWA Assessment of Caribbean LME if available

#### Activity 1.2

Prepare an agreed initial (PDF-B) Strategic Action Program (SAP) for Caribbean LME shared living marine resources that identifies and outlines approaches to policy and institutional reforms at national and regional levels; update SAP following revision of TDA in 1.1 and adaptive management approach

#### Outcome 1. Transboundary LMR issues analyzed and needed actions agreed upon

**i.** A preliminary Transboundary Diagnostic Analysis (TDA) that fully characterizes the nature, scope and root causes of transboundary living marine resource issues in Caribbean LME will be completed during the PDF-B. It will be updated towards the end of the full project, reflecting improved information base (Component 2), and agreed among the participating countries and institutions.

**ii. An agreed preliminary Strategic Action Program (SAP)** for Caribbean LME shared living marine resources will be completed during the PDF-B. Following an adaptive ecosystem management approach, the SAP will be updated towards the end of the full project and agreed among the nations, specifying necessary legal, policy and institutional reforms at national and regional levels and means of achieving these.

# Component 2. Filling knowledge gaps and sharing information needed for ecosystem management Activity 2.1

Compilation and sharing of existing information through support for information compilation efforts by established regional management bodies and for new bodies required for resources presently not covered, and through establishment of regional shared living marine resources information nodes and/or networks based on metadatabase concepts

#### Activity 2.2

Fill knowledge gaps on resources and biophysical processes including productivity, fish and fisheries, pollution and ecosystem health required for ecosystem-based living marine resource management as identified by PDF-B review and by the ongoing governance reforms established or enhanced in component 3.

#### Activity 2.3

Conduct pertinent assessments of LMRs and related productivity and oceanographic processes through joint international data collection cruises and data syntheses and analyses

**Outcome 2.** Knowledge and information gaps for living marine resources ecosystem management filled i. Improved quality and availability of data and information in support of policy and management decision-making.

#### Component 3. Implementation of necessary governance reforms (institutional, legal, and policy)

#### Activity 3.1

Enhance institutional structures that provide living resource ecosystem management advice to the bodies with responsibility for management decision making (based on the principles of using existing international, regional and subregional institutions with a mandate for management of shared resource wherever possible, 'strengthening by doing')

#### Activity 3.2

Link these advisory institutions together for a region-wide ecosystem approach by networking and where necessary establishing regional cross-sectoral committees among them.

#### Activity 3.3

Use and strengthen existing institutional (political) structures with responsibility for management decisionmaking, and facilitate the establishment within these bodies of competent management authorities for various subsets of shared resources as prescribed by the UN Fish Stocks Agreement, WSSD and other relevant international agreements and to ensure effective regional participation in the international management authorities responsible for Caribbean resources, e.g. the International Commission for the

## 7. Caribbean Sea LME

Conservation of Atlantic Tunas (ICCAT). Establish linkages among these institutional structures for effective cooperation in ecosystem management of transboundary resources.

#### Activity 3.4

Promote increased ratification and implementation of relevant international agreements (UNCLOS, FAO Code of Conduct, UN Fish Stocks Agreement, etc.)

by Caribbean countries.

#### Activity 3.5

Improve implementation of ecosystem management measures and reform supporting policy and legal instruments by: promoting harmonization of national (with regional and international) and regional (with international) policy and legislation for shared living marine resource ecosystem management; building capacity for implementation of management measures, legal, policy and regulatory reforms and by developing a concept for a compact between management bodies to achieve the coordination necessary for recovery of depleted fish stocks.

#### Activity 3.6

Ensure sustainability and replicability of project interventions by identifying and implementing measures (financial, institutional, etc.) to sustain the reforms (e.g. fees on fishing/tourism, trust funds, government contributions, etc.).

#### Activity 3.7

Disseminate and share project results, best practices and lessons learned with appropriate target audiences through wide range of mechanisms (publications, Internet incl. IW:LEARN, twinning, GEF IW Conferences, etc.).

**Outcome 3.** Legal, policy and institutional reforms for shared LMR ecosystem management implemented and sustainable

#### i. Institutional

a. Management advisory bodies and processes strengthened or established and providing timely and accurate advice to decision makers.

b. Existing institutional (political) structures for decision-making strengthened, where appropriate by establishing competent management authorities within them, and will be active.

c. Linkages among these advisory and decision-making bodies strengthened to ensure a Caribbean-wide ecosystem-based approach to living marine resource ecosystem management.

#### ii. Legal/Policy

a. Increased ratification and implementation of relevant international agreements (UNCLOS, UN Fish Stocks Agreement, FAO Compliance Agreement, etc.) by Caribbean countries

b. Supporting national policy and legal frameworks reformed and harmonized regionally and internationally **iii. Sustainability** 

a. Regional management institutions have capacity to participate in the activities of international FMOs responsible for resources of interest to Caribbean countries.

b. Increased national and regional capacity for implementation of ecosystem management measures and for legal, policy and regulatory reforms

c. Sustainability and replicability of the project interventions ensured. d. Development and operationalization of system to implement the Precautionary Principle and Code of Conduct for Responsible Fisheries.

#### Component 4. LME level monitoring, evaluation and reporting

#### Activity 4.1

Identification, establishment and operation of an institutional arrangement that will be responsible for assembling and reporting on agreed indicators for monitoring and evaluation of the status of the Caribbean LME shared living marine resources, e.g. through a tripartite mechanism comprising FAO/WECAFC, IOC/IOCARIBE and UNEP/CEP.

#### Activity 4.2

Development of a suite of process, stress reduction and environmental status indicators (GEF International Waters Indicators), for the Caribbean LME shared living marine resources using the improved knowledge base and enhanced regional institutional arrangements and including indicators of the five LME modules of ecosystem level productivity, fish and fisheries, pollution and ecosystem health, socioeconomics, and governance.

**Outcome 4. LME level monitoring, evaluation and reporting processes in place** Institutional and procedural approach to LME level shared living marine resources monitoring, evaluation and reporting in place, including process, stress reduction and environmental status indicators.

The following table outlines the quarterly work plan for the Caribbean Sea LME Project.

|   | Caribbe    | an Large l | <u> Marine E</u> | osystem |              |   |   |   |            |    |    |    |            |    |    |    |
|---|------------|------------|------------------|---------|--------------|---|---|---|------------|----|----|----|------------|----|----|----|
| Onenteele moele alan  | Full Size  | ed Project | Timeline         |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Cuatterly work plan   | Q1<br>2008 | õ          | 63               | 4       | 2009<br>2009 | ö | 8 | 4 | QI<br>2010 | 62 | 63 | \$ | QI<br>2011 | 62 | 63 | 64 |
| Activity  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
|   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Outcome 1- Analysis of transboundary LMR issues                           |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| 1.1 TDA Review and update   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Gap Analysis  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Thematic studies  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Causal Chain Analysis   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Stakeholder analysis and PI Strategy                                      |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Institutional mapping and legal review                                    |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Regional Socio-economic review  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Identification of interventions and pre-feasibility                       |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| studies   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| TDA update  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| 1.2 Information Management System (IMS)                                   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| System design   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| System development and testing  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Training  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Data collection, collation and processing                                 |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| IMS Launch  |            |            |                  |         |              |   |   |   |            |    |    | *  |            |    |    |    |
|   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Outcome 2 – SAP development and identification of reforms and investments |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| 2.1 Development of SAP  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Development of vision and EcoOOs  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Setting targets   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Prioritization of interventions   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Draft SAP   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Finalize and endorse SAP  |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Donors Conference   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    | *  |
| 2.2 Improved management framework for LMR                                 |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Development of options and consultations on regional framework            |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Selection and promotion of preferred option                               |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Economic instruments study to support new framework                       |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Agreement and endorsement of regional framework                           |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |
| Institutional strengthening/capacity building at Sub-<br>regional level   |            |            |                  |         |              |   |   |   |            |    |    |    |            |    |    |    |

Table 7.6 Quarterly Work Plan for the Caribbean Sea LME

|           |                     | 5          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     | *   | *   |
|-----------|---------------------|------------|--|--------------------------|--|---|--|---|---|-------------------------------------|--|---------------------------------|--|--|--|---|-----------|--|---|---|---------------------------------------|--|--------------------------------|--------------------------------|--------------------------------|-------------------------------------|---|---|
|           |                     | S          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | ö          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | QI<br>2011 |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     | *   | *   |
|           |                     | ₽          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | 63         |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | <i>ī</i> ð |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | QI<br>2010 |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     | *   | *   |
|           |                     | 4          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
| cosystem  |                     | 8          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | ö          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
|           |                     | QI<br>2009 |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     | *   | *   |
|           |                     | ₽¢         |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
| vlarine E | t Timeline          | õ          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
| an rarge  | ed Project          | õ          |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   |   |
| Carloot   | Full Siz            | Q1<br>2008 |  |                          |  |   |  |   |   |                                     |  |                                 |  |  |  |   |           |  |   |   |                                       |  |                                |                                |                                |                                     |   | *   |
| -         | Onarteely work also |            | Promotion of ratification of relevant international<br>treates and ICCAT | Dissemination of results | 2.3 Monitoring, evaluation and reporting | Establishment of institutional reporting procedures | Review of existing monitoring programmes | Develop Regional Environmental Monitoring | Programme (REMP) and provide capacity building –<br>ESI | Develop GEF suite of M&E indicators | Construct baseline and insert into DMS | Undertake first CLME evaluation | Outcome 3 – Fishery Demonstration Projects | Stakeholder analysis and creation of stakeholder group | Final project design, including site selection | Fishery/ecosystem data collection and preliminary | sisárette | Review of policy cycle and make recommendations for<br>improvement | Development of strengthened policy cycles at<br>local/national levels | Development and implementation of management plan | Establishment of monitoring programme | Reporting and dissemination of results | Outcome 5 - Project Management | 5.1 Establish and maintain PCU | Outcome 6-Project Coordination | 6.1 Establish and maintain web-site | 6.2, 6.3 Stakeholder Advisory Group, Partners of the<br>Device modeling | rioject meetings<br>6.4 Incention and Steering committee meetings |

Table 7.6 continued

# 8. INTERIM GUINEA CURRENT COMMISSION

www.IGCC.GCLME.ORG,

# **GUINEA CURRENT LME PROJECT**

## 8.1 BACKGROUND



### Present Status of Project

The LME project resumed operations in June 2009, after a hiatus involving change of personnel. The following are highlights of expected outcomes of project implementation in 2010, as put forward by Dr. Jacques Abe, Officer-in-charge/ Environmental Scientist, IGCC/GCLME RCU:

- Develop Investment opportunities for the SAP to reduce ecosystem threats identified in the updated TDA.
- Organise the second meeting of Ministers.
- Donor's conference to mobilise commitments to SAP/NAP implementation
- Update/development of NAPs for SAP implementation
- Establishment of a full Guinea Current Commission (GCC).

## 8.2 GEF Project ID 1188 Details

 Table 8.1 GEF Project ID 1188. Regional - Combating Living Resource Depletion and Coastal

 Area Degradation in the Guinea Current LME through Ecosystem-based Regional Actions

| GEF Project ID                        | 1188  |  |  |  |  |  |  |  |  |
|---------------------------------------|---|--|--|--|--|--|--|--|--|
| UNDP PMIS ID                          | 858   |  |  |  |  |  |  |  |  |
| Funding Source                        | GEF Trust Fund  |  |  |  |  |  |  |  |  |
| Project Name                          | Combating Living Resource Depletion and Coastal Area Degradation in the Guinea Current LME through Ecosystem-based Regional Actions   |  |  |  |  |  |  |  |  |
| Country                               | Regional (Angola, Benin, Congo, Cote d'Ivoire, Cameroon, Gabon, Ghana, Equatorial Guinea, Guinea-Bissau, Liberia, Nigeria, Sierra Leone, Sao Tome and Principe, Togo, Congo DR) |  |  |  |  |  |  |  |  |
| Region                                | Africa  |  |  |  |  |  |  |  |  |
| Focal Area                            | International Waters  |  |  |  |  |  |  |  |  |
| Operational Program                   | 9   |  |  |  |  |  |  |  |  |
| Pipeline Entry Date                   | April 11, 2000  |  |  |  |  |  |  |  |  |
| PDF-B Approval Date                   | June 02, 2000   |  |  |  |  |  |  |  |  |
| PDF-B (Supplemental)<br>Approval Date | November 27, 2002   |  |  |  |  |  |  |  |  |
| Approval Date                         | November 21, 2003   |  |  |  |  |  |  |  |  |
| CEO Endorsement Date        | August 18, 2004   |
|-----------------------------|---|
| GEF Agency Approval<br>Date | October 26, 2004  |
| Project Status              | Under Implementation  |
| GEF Agency                  | UNDP/UNEP   |
| Executing Agency            | UNIDO   |
| Description                 | The proposed project concept involves 16 countries: Angola, Benin, Cameroon, Congo, DR of the |

The proposed project concept involves 16 countries: Angola, Benin, Cameroon, Congo, DR of the Congo, Cote d'Ivoire, Gabon, Ghana, Equatorial Guinea, Guinea, Guinea-Bissau, Liberia, Nigeria, Sao Tome and Principe, Sierra Leone, Togo. These countries, according to NOAA's definition, are the littoral states of the Guinea Current LME (GCLME). This proposal represents a follow up action with respect to the Pilot Phase Gulf of Guinea LME project (six countries), which is presently nearing completion. The intent of the proposed new and separate project is to extend the present Gulf of Guinea project from six to sixteen countries, including then the entire area known as the "Guinea Current LME". The new project would assist these 16 countries "in making changes in the ways that human activities are conducted in the different sectors to ensure that the GCLME and its multi-country drainage basins can sustainably support the socio-economic development of the region. A project goal is to build the capacity of Guinea Current countries to work jointly and in concert with other nations, regions and GEF projects in West Africa to define and address transboundary priority environmental issues within the framework of their existing responsibilities under the Abidjan Convention and its Regional Seas program." The primary objectives of the PDF-B work are to hold a "Regional, Abidjan Convention based, Stocktaking Meeting and prepare a project brief for the protection, management, and sustainable development of the resources of the GCLME." Sept. 2003 - Full project The proposal has a primary focus on the priority problems and issues identified by the 16 GCLME countries that have led to unsustainable fisheries and use of other marine resources, as well as the degradation of marine and coastal ecosystems by human activities. The long-term development goals of the project are: 1) recover and sustain depleted fisheries; 2) restore degraded habitats; and 3) reduce land and ship-based pollution by establishing a regional management framework for sustainable use of living and non-living resources in the GCLME. Priority action areas include reversing coastal area degradation and living resources depletion, relying heavily on regional capacity building. The project focuses on nine demonstration projects (3 regional and 6 national), designed to be replicable and intended to demonstrate how concrete actions can lead to demonstrable stress reduction improvements in ecosystem status. Sustainability will derive from this improved capacity, strengthening of national and regional institutions, improvements in policy/legislative frameworks resource mobilization and economic instruments, and the demonstration of technologies and approaches that will lead to improved ecosystem status. The priority transboundary and biodiversity problems of resource depletion, loss of biodiversity (including habitat loss and coastal erosion), and land- and sea-based pollution are all addressed through the interventions proposed here. The project has five main components with associated objectives identified during the project preparation process: i) Finalize SAP and develop sustainable financing mechanism for its implementation; ii) Recovery and sustainability of depleted fisheries and living marine resources including mariculture; iii) Planning for biodiversity conservation, restoration of degraded habitats and developing strategies for reducing coastal erosion; iv) Reduce land and sea-based pollution and improve water quality; and v) Regional coordination and institutional sustainability. The activities to be undertaken will complement other projects in the region to provide a strong foundation for the long-term sustainable environmental management of the GCLME. A Transboundary Diagnostic Analysis (TDA) and preliminary Strategic Action Programme (SAP) have been prepared, serving as the basis for preparation of this project proposal. The full Global Environment Facility (GEF) project will update the TDA as part of a continuing process, and will endorse a regionally agreed SAP, following clarification of some aspects of the environmental status of the region, and initiate SAP implementation.

Implementation Status The Region-wide Fish Trawl and Productivity Surveys which started in May in Guinea Bissau ended in Angolan waters in July. A Second Meeting of the IGCC/UNIDO/IMO/IPIECA Technical Advisory Group on the development of Sub-regional Contingency Plans and Sub-regional Co-operation in Cases of Major Marine Pollution Incidents was held back-to-back with the First Meeting on the revision of the Emergency Protocol to the Abidjan Convention 20-24 August, 2007 at which sub-regional Contingency Plan and Revised Emergency Protocol were finalized for adoption at Ministerial level during COP 8 of the Abidjan Convention in Cape Town 5-8 November, 2007. A Sub-regional Workshop on Management of shared stocks of sardinella was held in Luanda, Angola from 05-07 September, 2007 with participants from Angola, Gabon, Congo and DR Congo agreeing on strategies for future joint actions for the sustainability of this fishery. A National Workshop in August in Benin endorsed the identification and cartographic

delineation of coastal and marine areas to be designated as MPAs while another National Consultation in Togo in September adopted preferred options and priority actions for the control of leachates from the Phosphate Treatment Plants in Kpeme entering into international waters. Final Designs and Bill of Quantities for the demo erosion control measure in Assini, Cote d'Ivoire were received as was a Final Report on the diagnostic phase of the ICAM demo project in Cameroon which detailed landscape dynamics, socio-economic context and institutional /regulatory framework of the Kribi-Campo Area. Bidding documents have been prepared for the concluding phases of the demo projects.

| PDF B Amount                     | 349,500 US\$                       |
|----------------------------------|------------------------------------|
| GEF Project Grant                | 20,812,404 US\$                    |
| GEF Grant                        | 21,449,184 US\$                    |
| Cofinancing Total                | 33,871,293 US\$                    |
| Project Cost                     | 55,320,477 US\$                    |
| GEF Agency Fees                  | 1,045,000 US\$                     |
| GEF Project Grant (CEO<br>Endo.) | 20,812,699 US\$                    |
| Cofinancing Total (CEO<br>Endo.) | 43,971,293 US\$                    |
| Project Cost (CEO<br>Endo.)      | 65,420,772 US\$                    |
| GEF Agency Fees (CEO<br>Endo.)   |                                    |
|                                  | Project Documents                  |
|                                  | PDF-B Document Suppl (Revised)     |
|                                  | Project Review(revised)            |
|                                  | PDF-B Document                     |
|                                  | Executive Summary (final)          |
|                                  | Project Brief (Revised)            |
|                                  | Ex. Summary (Final)                |
|                                  | Endorsement Letter from Government |
|                                  | PAD-(CEO Endorsement - Rev)-UNEP   |
|                                  | PAD-(CEO Endorsement - Rev)-UNDP   |

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# 8.3 CONTACT INFORMATION

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Mr. Napoleon GBOLONYO – Administrative Officer
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 Ms. Kelechi IHEMEJE – Editor / Personal Assistant to Regional Director
 The GCLME Project Regional Coordination Unit (RCU) with its complement of staff serves as the Executive Secretariat of the Interim Guinea Current Commission

#### Productivity

IGCC Advisory Group on Marine Productivity and Biodiversity **Fish and Fisheries** IGCC Advisory Group on Fisheries and other Living Marine Resources **Pollution and Ecosystem Health** IGCC Advisory Group on Pollution Management **Socioeconomics** IGCC Advisory Group on Risk Assessment and Early Warning System **Governance** IGCC Advisory Group on Environmental Information and Management Services IGCC Advisory Group on Oil Spill Contingency and Emergency Response

#### The GEF GCLME Project UN Agencies representatives

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Countries participating in the GCLME Project: Angola, Benin, Cameroon, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Gabon, Ghana, Equatorial Guinea, Guinea, Guinea-Bissau, Liberia, Nigeria, São Tomé and Principe, Sierra Leone, Togo

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| Name                                      | Position  | Phone        | Fax    |

| Name                         | Positio                   | n Phone                | Fax                      |
|------------------------------|---------------------------|------------------------|--------------------------|
| Environmental Information    | ManagementRegior          | nal Activity + 234 803 | 3 572                    |
| System                       | Centre                    | 5644                   |                          |
| Marine Productivity and Biod | iversity Region<br>Centre | nal Activity + 233 21  | 518 129 + 233 21 502 701 |

# 8.4 EXCERPTS FROM THE PROJECT DOCUMENTS

# 8.4.1 Excerpt from GCLME Strategic Action Programme

 Table 8.2 Strategic Action Programme, Guinea Current Large Marine Ecosystem

Strategic Action Programme Guinea Current Large Marine Ecosystem

# ANNEX V: PRIORITY ACTIONS WITHIN EACH CATEGORY OF INTERVENTION

| Category           | Major Issues   | Interventions   | LME Module Code                                |
|--------------------|--|---|--|
| Policy Actions     | I.Sustainable<br>Fisheries   | Establish Marine Protected Areas for<br>critical spawning grounds and habitats<br>of threatened or endangered species   | V Governance-MPA                               |
|                    |  | Prepare a regional biodiversity strategy document, including a gap analysis, and obtain endorsement by riparian states  | V Governance-<br>biodiversity                  |
|                    |  | Establish joint response policies   | V Governance-adaptive<br>response              |
|                    |  | Strengthen enforcement of quotas, size<br>limits, seasons, etc., relying on<br>community-based fishery management<br>activities, including existing Fisheries<br>Acts and/or regulation of FAO Code of<br>Conduct to reduce over harvesting | V Governance-quotas                            |
|                    |  | Help harmonize fishing policies<br>amongst GCLME countries  | V Governance-fisheries                         |
|                    |  | Formulate harmonized regional<br>mariculture policy   | V Governance-<br>mariculture                   |
|                    |  | Establish regional fisheries commission   | V Governance-FISH<br>COMMISSION                |
|                    | II. High quality water<br>to sustain balanced<br>ecosystem               | Establish regional working group to decide upon environmental quality standards   | V Governance-water<br>quality                  |
| Category           | Major Issues   | Interventions   | LME Module Code                                |
|                    |  | Ratify and accede to the Protocol on<br>Land-Based Activities and Sources of<br>Pollution of the Abidjan Convention   | V Governance-water<br>quality                  |
|                    |  | Develop regional policy for addressing sea-based pollution  | V Governance-water<br>quality                  |
|                    |  | Integrate private sector into activities of<br>this project as appropriate as sub-<br>contractor, consultant or co-sponsor of<br>specific activities  | V Governance-local<br>private sector           |
|                    |  | Working with private sector, identify<br>and secure financing to replicate the<br>demonstration projects in other areas of<br>the region  | V Governance-finance                           |
| II<br>fc<br>e<br>e | III. Balanced habitats<br>for sustainable<br>ecology and<br>environments | Develop national mangrove<br>management strategies/ plans/<br>frameworks (including community<br>participation and empowerment)   | V Governance-mangrove                          |
|                    |  | Develop national lagoon management<br>strategies/plans/ frameworks (including<br>community participation and<br>empowerment)  | V Governance-<br>stakeholders & lagoon mgt     |
|                    |  | Develop national and regional aquatic<br>weed management strategies/ plans/<br>frameworks combined with monitoring<br>and GIS capabilities  | V Governance-aquatic<br>weed monitoring & mgt. |

|  |  | Through regional meetings, agree upon<br>regional policies for sediment sharing<br>and its restoration  | V Governance-sediment<br>sharing and restoration  |
|--|--|---|---|
| Legislative /<br>Regulatory            | I.Sustainable<br>Fisheries   | Develop management plans, and<br>implement and monitor them with local<br>communities and user groups   | V Governance-fisheries  |
|  |  | Assure that legislation regulating fishing gear, quotas, size limits, seasons and allowed fishing areas are in place  | V Governance-fish quotas  |
|  |  | Establish "no take zones" either geographically or seasonally   | V Governance-no take<br>zones   |
| Category                               | Major Issues   | Interventions   | LME Module Code   |
|  |  | Develop management plans, and<br>implement and monitor them with local<br>communities and user groups   | V Governance &<br>community fish resources  |
|  | II. High quality water<br>to sustain balanced<br>ecosystem               | Develop common regional guidelines<br>for periodic assessment of water quality  | V Governance-periodic<br>assessment, water quality                                      |
|  |  | Conduct national review of policy, legal<br>and regulatory frameworks and<br>institutional structure for addressing<br>land-based activities  | V Governance-land based to water quality  |
|  |  | Develop and enforce regulations on the disposal of industrial and mining effluents  | V Governance-industrial<br>and mining effluents   |
|  | III. Balanced habitats<br>for sustainable<br>ecology and<br>environments | Conduct national review of policy, legal<br>and regulatory frameworks, and<br>institutional structure for addressing<br>protection of critical habitats   | V Governance-critical<br>habitats   |
|  |  | Draft Regional EIA process review in a regional workshop; adopt regional EIA procedure  | V Governance-integrated<br>ecosystem assessments  |
|  |  | If necessary, develop legislation for the protection of areas not currently covered or included in protected zones  | V Governance-protected<br>areas   |
|  |  | Review, harmonize and strengthen<br>relevant local and national policies and<br>legislation regarding Integrated Coastal<br>Area and River basin Management<br>(ICARM)  | V Governance-ICARM  |
| Institutional<br>Strengthening Actions | I. Sustainable<br>Fisheries  | Develop links with CLIVAR (Climate<br>Variability and Predictability Project of<br>the World Climate Research<br>Programme) and CLIVAR Africa and<br>with GOOS (Global Ocean Observing<br>System of the Intergovernmental<br>Oceanographic Commission of<br>UNESCO) and GOOS-Africa | V Governance - satellite<br>remote sensing,<br>forecasting models, oceans<br>monitoring |
| Category                               | Major Issues   | Interventions   | LME Module Code   |
|  |  | Establish regional advisory groups and networking centres   | V Governance -<br>networking  |

|                              |  | Strengthen capacity of local<br>communities to implement and monitor<br>management plans   | V Governance -<br>monitoring   |
|------------------------------|--|--|--|
|                              | II. High quality water<br>to sustain balanced<br>ecosystem               | Strengthen the capacity of institutions to enforce mining and industry regulations   | V Governance -<br>enforcement  |
|                              | III. Balanced habitats<br>for sustainable<br>ecology and<br>environments | Develop national/regional HAB<br>contingency plans which include early<br>warning systems and guidelines for<br>medical practitioners to deal with HAB-<br>associated problems   | V Governance - HAB -<br>predict and respond                              |
| Capacity Building<br>Actions | I. Sustainable<br>Fisheries  | Develop community projects for cost<br>effective environmental information<br>gathering and environmental education  | V Governance -<br>information and education                              |
|                              |  | Conduct training in sustainable<br>community-based mariculture   | V Governance -<br>mariculture  |
|                              | II. High quality water<br>to sustain balanced<br>ecosystem               | Assess regional training needs   | V Governance - pollution<br>training                                     |
|                              |  | Devise and implement appropriate<br>training courses appropriate for the<br>needs of the region  | V Governance - training<br>and education                                 |
|                              |  | Improve networking among<br>professionals in the region through<br>meetings and exchanges  | V Governance -<br>networking   |
|                              |  | Develop realistic National Plans of<br>Action for land-based sources and<br>activities   | V Action plans for land-<br>based sources of pollution<br>and activities |
|                              |  | Conduct survey on training needs and<br>conduct training in land-based activities<br>and sources (for high officials, mid-level<br>government, community, experts,<br>industry, etc.)  | V Governance - high level<br>training needs                              |
| Category                     | Major Issues   | Interventions  | LME Module Code  |
|                              |  | Conduct survey on educational needs<br>to support reduction of land-based<br>activities and sources and implement<br>the activities to address three top<br>priority regional educational needs, in<br>appropriate languages | V Governance - education needs   |
|                              |  | Develop a public participation and<br>awareness (PPA) workplan for the<br>Project  | V Governance - Project<br>PR   |
|                              |  | Undertake a participatory planning<br>process for each hotspot to identify<br>challenges and locally acceptable<br>management mechanisms   | V Governance - mgt.<br>acceptable to people in<br>locality               |
|                              | III. Balanced habitats<br>for sustainable<br>ecology and<br>environments | Undertake a participatory planning<br>process for each selected mangrove<br>site of global and ecoregional<br>importance to identify challenges and<br>locally acceptable management<br>mechanisms                           | V Governance - mgt.<br>acceptable to people in<br>locality               |
|                              |  | Link with international mangrove<br>conservation initiatives   | V Governance -<br>international mangrove<br>links                        |

|                    |   | Strengthen the capacity of NGO's and CBO's for community-based conservation measures  | V Governance -<br>community-based<br>conservation                               |
|--------------------|---|---|---|
|                    |   | Implement local training programs<br>through agricultural extension offices<br>promoting alternatives to harvesting<br>and cutting of mangroves                     | Government-agricuture<br>extension work to protect<br>mangroves                 |
|                    |   | Work through agricultural extension<br>offices to ensure that farmers are<br>implementing practices to reduce<br>nutrient discharge                                 | V Governance-agricuture<br>extension work to reduce<br>nutrient discharge       |
|                    |   | Conduct community awareness<br>projects linked to national ministries of<br>health to alert the public to the dangers<br>associated with HABs                       | V Government - PR re:<br>HABs   |
|                    |   | Improve national capacity to analyze for<br>toxins and identify harmful species by<br>sharing expertise between countries   | V Government -<br>toxicology  |
| Category           | Major Issues  | Interventions   | LME Module Code   |
|                    |   | Devise national management structure/<br>framework/ plan for addressing coastal<br>erosion  | V Governance - coastal<br>erosion   |
|                    |   | Promote environmentally sound<br>community-based tourism development<br>programme   | V Governance - tourism  |
| Investment Actions | I. Sustainable<br>Fisheries   | Conduct a feasibility assessment for<br>particular species in certain areas of<br>the region  | IV Socioeconomics -<br>mariculture prospectus                                   |
|                    |   | Promote establishment of extensive,<br>semi-intensive and intensive fish<br>culture and shrimp farming  | IV & V Socioeconomics &<br>Governance - mariculture                             |
|                    |   | Develop and demonstrate mechanisms to reduce by-catch   | IV Socioeconomics-<br>development   |
|                    | II. High quality water<br>to sustain balanced<br>ecosystem              | Implement a first periodic assessment<br>(3-year interval) of the water quality and<br>trends   | IV Socioeconomics-<br>implement water quality<br>assessments                    |
|                    |   | Develop and implement simple primary<br>treatment to manage domestic<br>wastewater  | V Governance - primary<br>water treatment                                       |
|                    |   | Provide secondary sewage treatment to targeted coastal urban populations  | V Governance - sewage<br>treatment  |
|                    |   | Work with private sector to leverage<br>financing for implementing wastewater<br>discharge controls in targeted areas   | V Governance -<br>wastewater controls   |
|                    |   | Implement demonstration projects to<br>bring best technology and practice to<br>industrial discharges (e.g., pre-<br>treatment, source control, process<br>control) | V Governance -<br>demonstration projects to<br>control industrial<br>discharges |
|                    |   | Promote construction of reception<br>facilities for marine debris/wastewater<br>at ports  | V Governance - port<br>facilities for wastes&<br>wastewater                     |
|                    | III. Balanced habitats<br>for sustainable<br>ecology and<br>environment | Develop and implement action plans for<br>those sensitive areas where human<br>impact is adverse  | V Governance  |

| Category                            | Major Issues   | Interventions  | LME Module Code  |
|-------------------------------------|--|--|--|
|                                     |  | Develop Best Environmental<br>Practices/Best Available Technologies<br>for agriculture to reduce discharge of<br>nutrients   | V Governance - nutrient<br>reduction from agriculture                  |
| Scientific Investigation<br>Actions | I. Sustainable<br>Fisheries                                | Complete assessment of status of vulnerable species and habitats   | II Fish Fisheries - stock assessments                                  |
|                                     |  | Implement biodiversity strategy,<br>including species specific action plans  | II Fish Fisheries -<br>biodiversity                                    |
|                                     |  | Assess feasibility of using information<br>from the PIRATA moored buoy array in<br>the tropical Atlantic to enhance<br>understanding of the links between<br>weather, climate and fish | II Fish Fisheries - PIRATA<br>for data on climate and fish             |
|                                     |  | Analyse plankton archives and other<br>(oceanographic) data collections for<br>baseline information to measure<br>decadal change   | I Primary Productivity -<br>plankton archives analyses                 |
|                                     |  | Adapt/develop predictive mathematical models applicable to the region  | II Fish Fisheries -<br>modelling                                       |
|                                     |  | Establish an annual regional forum for<br>stock assessment, ecosystem<br>assessment and information sharing on<br>harmonization of management actions<br>and co-management             | II Fish Fisheries -<br>assessment and<br>monitoring - LME-wide         |
|                                     |  | Develop regional early warning system, assessment and prediction capability  | V Governance -<br>climatology - early warning<br>system uses           |
|                                     |  | Establish current levels and patterns of trade of selected species   | II Fish Fisheries -<br>socioeconomics - species<br>trade               |
| Category                            | Major Issues   | Interventions  | LME Module Code  |
|                                     |  | Establish distribution and abundance of species  | II Fish Fisheries -<br>distribution and abundance<br>of species        |
|                                     |  | Identify areas where species are and are not threatened by over-exploitation   | II Fish Fisheries -<br>determine levels of<br>exploitation             |
|                                     |  | Establish criteria for "healthy" situation   |  |
|                                     | II. High quality water<br>to sustain balanced<br>ecosystem | Estimate the carrying capacity of the<br>coastal waters using an ecosystem-<br>based approach  | I Productivity   |
|                                     |  | Conduct regional assessment of priority<br>land-based activities, sources of<br>contaminants and pollutant levels  | III Pollution & Ecosystem<br>Health - water quality for all<br>modules |
|                                     |  | Develop common regional guidelines<br>containing appropriate<br>recommendations for decision makers<br>for management of land-based point<br>and non-point pollutant sources           | III Pollution & Ecosystem<br>Health - water quality for all<br>modules |
|                                     |  | Undertake assessment of coastal areas<br>in order to determine priority coastal<br>hotspots  | III Pollution & Ecosystem<br>Health - hotspots                         |

# Part I

|                            | III. Balanced habitats<br>for sustainable<br>ecology and<br>environment | Collect and/or verify baseline data on<br>extent, diversity, local uses of<br>mangrove products and management<br>challenges  | III Pollution & Ecosystem<br>Health - mangroves<br>baseline   |
|----------------------------|---|---|---|
| Category                   | Major Issues  | Interventions   | LME Module Code   |
|                            |   | Evaluate sensitivity of areas and habitats in the GCLME and evaluate levels of human impacts on them  | Pollution & Ecosystem<br>Health   |
|                            |   | Undertake assessment of<br>eutrophication in GCLME lagoons  | III Pollution & Ecosystem<br>Health - nutrient<br>overenrichment  |
|                            |   | Conduct assessment of the effects of<br>infrastructure on coastal erosion on the<br>Guinea Current coast  | III Pollution & Ecosystem<br>Health - coastal erosion   |
| Data Management<br>Actions | I. Sustainable<br>Fisheries   | Develop agreements and technology<br>basis for the free and regular exchange<br>of environmental data and information<br>within the region  | II Fish Fisheries - LME-<br>wide data and information<br>exchange   |
|                            |   | Promote innovative designs and<br>fabrication of by-catch reduction<br>devices for use by industrial shrimping<br>vessels.  | II Fish Fisheries - shrimp<br>by-catch reduction  |
|                            |   | Implement demonstration projects for<br>nipa palm utilization and mangrove<br>restoration involving local communities<br>and entrepreneurs  | II Fish Fisheries - habitat -<br>mangrove restoration   |
|                            |   | Promote eco-tourism through livelihood generation from eco-services, and ecological products.   | III Socioeconomics -<br>ecotourism including<br>ecosystem goods and<br>services (includes all<br>modules)                     |
|                            | II. High quality water<br>to sustain balanced<br>ecosystem              | Develop data and information network<br>and management system   | III Pollution & Ecosystem<br>Health   |
|                            |   | Promote tertiary waste treatment<br>technology where appropriate in highly<br>industrialized coastal cities   | III Pollution & Ecosystem<br>Health - tertiary waste<br>treatment   |
| Category                   | Major Issues  | Interventions   | LME Module Code I - V   |
|                            |   | Promote cooperative waste stock<br>exchange centres in industrialized<br>coastal cities   | III Pollution & Ecosystem<br>Health - waste stock<br>exchange   |
|                            |   | Undertake awareness programme<br>involving government and the<br>organized private sector on waste<br>management through informal recycling<br>and reuse of industrial products with<br>viability as small-scale commercial<br>enterprises. | III Pollution & Ecosystem<br>Health and<br>Socioeconomics for waste<br>management   |
|                            | III. Balanced habitats<br>for sustainable<br>ecology and<br>environment | Develop HAB reporting system for the GCLME region   | III Pollution & Ecosystem<br>HealthHABS are<br>temperature and nutrient<br>overenrichment driven - so<br>climate and anthrop. |
|                            |   | Implement demonstration projects for<br>nutrient reduction in effluent  | III Pollution & Ecosystem<br>Health   |
|                            |   | Promote soft engineering options<br>suitable for rehabilitation of eroded<br>coastlines and coastal areas within the<br>region.   | III Pollution & Ecosystem<br>Health - rehabilitate<br>coastlines and areas  |

| Encourage community participation in<br>coastal habitat rehabilitation and<br>restoration for hot spots of PADH<br>involving, NGOs and CBOs.                  | IIIPollution & Ecosystem<br>Health - local involvement<br>in Restoration hotspots         |
|---|---|
| Work with private sector for alternative local building materials particularly low-<br>cost options to reduce coastal sand mining (e.g. clay, laterite, etc). | III Pollution & Ecosystem<br>Health, Socioeconomics,<br>alternative building<br>materials |

# 8.4.2 Excerpts from the Interim Guinea Current Commission and the Guinea Current Large Marine Ecosystem Project (July 2007 document), GEF, UNDP, UNEP, US-NOAA, NEPAD

Approximately 40% of West Africa's 300 million people (or more than 20% of Africa's total population) live in the coastal areas of the GCLME, close to the lagoons, estuaries, creeks and inshore waters. The wellbeing of these populations depends on the coastal and offshore marine resources of the region and especially on fish, a critical source of protein. Coastal populations are rapidly expanding due to a high population growth and migrations from rural to urban areas. Nearly all major cities, industries and agricultural activities are located at or near the coast.

The 16 countries of the GCLME are committed in the SAP and under the aegis of the IGCC to 10 demonstration projects:

#### 4 regional projects – integrated ecosystem assessments

- 1. Determine trends in primary productivity and the implications for the carrying capacity of the LME
- 2. Conduct fish trawl surveys and stock assessments
- 3. Establish common environmental information management and decision support systems
- 4. Undertake Risk analysis and develop prevention/mitigation programs including the installation of early warning system

#### 6 National Projects: - ecosystem demonstration

- 1. Create Marine Protected Areas in Benin
- 2. Implement Integrated Coastal Areas Management in Cameroon
- 3. Initiate low cost, low technology measures for the protection of shorelines and critical habitats in Côte d'Ivoire
- 4. Establish a non-hazardous waste stock exchange management system (WSEMS) in Ghana
- 5 Promote Nypa palm utilization and mangrove restoration in Nigeria
- 6. Control leachate pollution from phosphate mines and reduce nutrient discharges in Togo

# 9. THE GULF OF MEXICO LARGE MARINE ECOSYSTEM (GOMLME) PROJECT

# 9.1 BACKGROUND

The Gulf of Mexico website is <u>http://gulfofmexico-lme.org/</u> and contains meeting reports including the Second Steering Committee Meeting report from February 2010 as well as a review of the Work Plan for 2010 presented on 11 February 2010 in Miami by Porfirio Alvarez-Torres, Project Coordinator.

# 9.2 GEF PROJECT ID 1346 DETAILS

 Table 9.1 GEF Project ID 1346: Mexico — Integrated Assessment and Management of the

 Gulf of Mexico Large Marine Ecosystem

# Mexico - Integrated Assessment and Management of the Gulf of Mexico Large Marine Ecosystem

| GEF Project ID             | 1346   |
|----------------------------|--|
| Funding Source             | GEF Trust Fund   |
| Project Name               | Integrated Assessment and Management of the Gulf of Mexico Large Marine Ecosystem  |
| Country                    | Mexico   |
| Region                     | Latin America and Caribbean  |
| Focal Area                 | International Waters   |
| <b>Operational Program</b> | 9  |
| Pipeline Entry Date        | March 05, 2002   |
| PDF-B Approval Date        | June 12, 2003  |
| Approval Date              | September 05, 2007   |
| CEO Endorsement Date       | December 03, 2008  |
| GEF Agency Approval Date   | January 15, 2009   |
| Project Status             | IA Approved  |
| GEF Agency                 | UNIDO - United Nations Industrial Development Organization   |
| Executing Agency           | UNIDO  |
| Description                | The full GEF project proposal will address the transboundary concerns of the countries bordering the Gulf of Mexico Large Marine Ecosystem. These will be defined in the Transboundary Diagnostic Analysis and prioritised in the Strategic Action Programme (both of which will be completed during the PDF-B intervention). The main objective of this project will be to build the capacity and initiate governmental and institutional arrangements for planning and implementing region-wide efforts to address critical ecosystem and environmental problems in the GOMLME. In summary, the full project is expected to assist with agreed incremental costs of implementing the SAP formulated with Block B funding as follows: (1) policy, legal, institutional reforms related to habitat loss; management of living resources; and land-based sources of pollution; (2) conduct on-the-ground area-specific demonstrations related to the three priority problems(above) plus their relation to fluctuating climatic regimes and vulnerability to storm events; (3) establish an institutional arrangement for co-operation among the three nations sharing the LME. |

# 9. Gulf of Mexico LME

| Implementation Status            | Preparing documents for CEO Endorsement            |
|----------------------------------|--|
| PDF B Amount                     | 473,000 US\$                                       |
| GEF Project Grant                | 4,502,500 US\$                                     |
| GEF Grant                        | 4,975,500 US\$                                     |
| Cofinancing Total                | 96,774,780 US\$                                    |
| Project Cost                     | 101,750,280 US\$                                   |
| GEF Agency Fees                  | 497,550 US\$                                       |
| GEF Project Grant (CEO<br>Endo.) | 4,502,500 US\$                                     |
| Cofinancing Total (CEO<br>Endo.) | 95,574,780 US\$                                    |
| Project Cost (CEO Endo.)         | 100,550,280 US\$                                   |
| GEF Agency Fees (CEO<br>Endo.)   | 497,550 US\$                                       |
|                                  | Project Documents                                  |
|                                  | Project Concept (Revised)                          |
|                                  | PDF-B Document (Revised)                           |
|                                  | Executive Summary (Revised)                        |
|                                  | Project Document for WP (Revised)                  |
|                                  | Project Appraisal Document (CEO Endorsement - Rev) |

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# 9.3 GEF PROJECT CONTACTS

#### Gulf of Mexico LME Project Coordinator:

Antonio Diaz-de-León is Director General of Environmental Policy in the Ministry of Environment and Natural Resources, SEMARNAT, Mexico.

#### NOAA Liaison: Bonnie Ponwith, Director

NOAA Southeast Fisheries Science Center (SEFSC) 75 Virginia Beach Drive Miami, FL 33149-1003 (305) 361-4200

#### GEF Operational Focal Point Endorsement Claudia Grayeb Bayata

Director for International Financial Organizations Secretary of the Treasury, Mexico June 18<sup>th</sup> 2007

#### Implementing/ Executing Agency Contact Mr. Dmitri Piskounov Managing Director UNIDO Programme Development and Technical

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# 9.4 EXCERPTS FROM DOCUMENTS RELATING TO THE GULF OF MEXICO LARGE MARINE ECOSYSTEM

9.4.1 International Agreements Concerning Living Marine Resources of Interest to NOAA Fisheries (Office of International Affairs, Silver Spring Maryland, 2009)

United States – Mexico Fisheries Cooperation Program (2009 report, p.119)

Canada/Mexico/US Trilateral Committee for Wildlife and Ecosystem Conservation and Management (2009 report, p.175)

Large Marine Ecosystems (LMEs) (2009 report, p.190)

#### U.S. – Mexico Fisheries Cooperation Program

No funds are specifically budgeted for the program; costs are assumed in the operating budgets of the participating NOAA Fisheries offices. Annual costs of the program including staff time, travel, translation services and misc. expenses total about 60,000 annually, during years when Fishery Cooperation Talks (FCTs) occur.

The focus has been on mutually beneficial projects during the 1980s, and in the 1990s on management, enforcement, recreational fisheries, marine mammals and endangered species. Shark and shrimp management and bycatch reduction in particular have been discussed in some detail. Mexico has taken the initiative in pursuing possible cooperation on Gulf of Mexico shrimp management. Conservation and management measures are usually discussed and Mexico is pursuing cooperation on Gulf of Mexico shrimp management.

# 9.4.2 Excerpts from GEF Project Document 1346

 Table 9.2 Excerpts from the GEF ID 1346 (Full size project, PDF-B), Integrated

 Assessment and Management of the Gulf of Mexico Large Marine Ecosystem

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| Category | Major Issues | Interventions | LME Module Code |
|----------|--------------|---------------|-----------------|

# 9. Gulf of Mexico LME

| Outcome 1 | Transboundary issues<br>analyzed and priorities   | Capacities and gaps in regional<br>monitoring methods/standards   | Monitoring: all modules             |
|-----------|---|---|-------------------------------------|
|           |   | Key ecosystem assessment and<br>management gaps identified (Y2, Q4)   | V Governance                        |
|           |   | Biodiversity hot spots in GoMLME<br>assessed and key knowledge gaps   | III Pollution & Ecosystem<br>Health |
|           |   | Existing information and data on<br>status and trends in fisheries<br>assessed (Y2.Q2)  | II Fish & Fisheries                 |
|           |   | Ecosystem-wide nutrient over-<br>enrichment and contaminant sources,<br>flows and levels assessed (Y2,Q2)   | III Pollution & Ecosystem<br>Health |
|           |   | Environmental impacts of<br>transboundary pollution on the GoM<br>ecosystem assessed (Y2,Q2)  | III Pollution & Ecosystem<br>Health |
|           |   | Information on nutrient over-<br>enrichment and related HABs<br>collected and integrated (Y2, Q2)   | III Pollution & Ecosystem<br>Health |
|           |   | Governance analysis of relevant<br>policy and regulatory frameworks<br>completed (Y3, Q1)   | V Governance                        |
|           |   | Analysis of the socioeconomic<br>impacts of priority transboundary<br>issues, including a preliminary LME<br>wide economic valuation of near shore<br>and marine goods and services,<br>undertaken (Y3, Q1)   | IV Socioeconomics                   |
| Outcome 2 | Country agreement on and<br>commitment to regional<br>and national policy, legal<br>and institutional reforms to<br>address the agreed priority<br>transboundary issues | Strategies and actions for the<br>reduction and control of nutrient over-<br>enrichment, HABs and for the<br>elimination of dead zones developed<br>(Y3, Q4)  | III Pollution & Ecosystem<br>Health |
|           |   | Stocktaking of the Papaloapan<br>watershed Commission to define<br>opportunities for replication in the<br>Grejalva-Usumacinta and Panoco<br>river basins in order to provide for<br>strong inter-linkages between<br>watershed management authorities<br>and coastal managers (Y3, Q4) | V Governance                        |
|           |   | Strategic Partnerships between GoM<br>LME programme and institutions<br>responsible for integrated<br>management of the major GoM river<br>basins, as well as the main coastal<br>cities, developed (Y3, Q4)  | V Governance                        |
|           |   | Strategies for harmonizing legislative,<br>policy and regulatory frameworks on<br>agricultural practices at LME wide<br>levels developed, building upon the<br>Gulf of Mexico Governors Alliance<br>(Y3, Q4)  | V Governance                        |
|           |   | Strategies and actions formulated for<br>sustainable management and use of<br>exploited living marine resources, and<br>for the recovery of depleted fish<br>stocks to within safe biological limits<br>formulated (Y4, Q4)   | II Fish & Fisheries                 |
|           |   | Bi-lateral initiatives for regional<br>surveying of productivity and<br>oceanography, stock assessment and<br>population assessments encouraged<br>and strengthened (Y4, Q4)  | II Fish & Fisheries                 |

# Part III

|           |   | Review effectiveness of compliance<br>measures with existing fisheries legal<br>and regulatory frameworks in both<br>countries, especially with regard to<br>IUU, excessive fishing capacity, and<br>enforcement and surveillance, and<br>propose appropriate reforms and<br>measures. (Y4, Q4) | II Fish & Fisheries  |
|-----------|---|---|--|
|           |   | Develop fisheries management plans<br>for selected key commercial fisheries<br>(Y4,Q4)  | II Fish & Fisheries  |
|           |   | Establishment of representative<br>marine protected areas (MPAs) as a<br>basis for meeting WSSD targets<br>(Y4,Q4)  | V Governance - MPAs  |
|           |   | Recovery plans for depleted priority<br>non-commercial species and<br>associated marine flora and fauna<br>developed for additional species not<br>currently addressed (Y4, Q4)   | II Fish & Fisheries  |
| Category  | Major Issues  | Interventions   | LME Module Code  |
|           |   | Management and capacity building<br>requirements to restore degraded<br>marine coastal wetlands defined (Y4,<br>Q4)   | II Fish & Fisheries - habitat<br>restoration                               |
|           |   | Marine and coastal spatial zoning<br>processes in individual countries<br>strengthened and implemented thus<br>enhancing sectoral links among<br>sectoral users in marine and coastal<br>zones (Y4, Q4)   | V Governance - multi-user<br>links & zoning                                |
|           |   | LME-wide strategies for conserving<br>biodiversity and habitats in the coastal<br>zones of GoM LME supported and<br>harmonized at a regional level  | V Governance - LME-wide<br>conservation                                    |
|           |   | The Strategic Action Programme<br>(SAP) and National Action<br>Programmes (NAPs) formulated and<br>endorsed (Y4, Q4)  | V Governance - SAP and<br>NAP Programmes endorsed                          |
|           |   | Commitments to SAP implementation<br>obtained and sustainable financing<br>arrangements formulated  | V Governance - SAP and<br>NAP Programmes funded                            |
| Outcome 3 | LME-wide ecosystem-<br>based management<br>approaches encouraged<br>and strengthened through<br>the successful<br>implementation of the Pilot<br>Projects | Pilot Project on Natural Habitat and<br>Ecosystem Conservation of Coastal<br>and Marine Zones of the Gulf of<br>Mexico: Wetlands, Mangroves, Sea<br>Grass Beds and Sand Dunes (Y4, Q4)  | II & III Fish & Fisheries AND<br>Ecosystem Health - habitat<br>restoration |
|           |   | Enhancing Shrimp Production through<br>Ecosystem Based Management (Y4,<br>Q4)   | II Fish & Fisheries  |
|           |   | Joint Assessment and Monitoring of<br>Coastal Conditions in the Gulf of<br>Mexico (Y3, Q4)  | all modules - Assessment<br>and monitoring coastal<br>conditions           |
| Outcome 4 | Monitoring and Evaluation<br>System for the Project and<br>the GoM LME established  | M&E mechanisms set up including an<br>M & E system for the project (Y4, Q4)   | V Governance -<br>performance evaluation<br>mechanisms                     |
|           |   | Suite of GEF M&E indicators<br>developed (process, stress,<br>environmental status) to monitor SAP<br>implementation (Y1, Q4)   | V Governance - post-SAP  |

# 9. Gulf of Mexico LME

|           |                                | GoM LME Environmental Information<br>System developed (Y2, Q4)  | V Governance - reporting<br>system, LME-wide                       |  |
|-----------|--------------------------------|---|--|--|
|           |                                | Bi-annual regional status report<br>developed on large scale ecosystem<br>impacts in the GoM LME (Y2, Q4)   | Governance - all modules,<br>reports large scale impacts<br>on LME |  |
| Category  | Major Issues                   | Interventions   | LME Module Code  |  |
| Outcome 5 | Effective project coordination | Regional Project Coordination Unit set<br>up (Y4, Q4)   | V Governance - regional<br>PCU                                     |  |
|           |                                | Steering Committee established and meeting (Y4, Q4)   | V Governance - Steering<br>Comm.                                   |  |
|           |                                | Intersectoral coordination established<br>through the development of<br>Intersectoral committees (ISCs) in<br>both countries, including with private<br>sector involvement (Y1, Q4) | V Governance - ISCs  |  |
|           |                                | An appropriate regional coordination<br>mechanism jointly defined (Y3, Q2)  | V Governance - regional<br>coordination mechanism                  |  |
|           |                                | Information needs within the relevant<br>sectors identified and addressed in<br>order to ensure active and informed<br>participation (Y3, Q2)                                       | V Governance - information transfer to multiple sectors            |  |
|           |                                | Robust public awareness strategies<br>targeted at the different stakeholder<br>levels and groups developed (Y4, Q4)   | V Governance - PR to<br>stakeholders                               |  |

# 10. GULF OF THAILAND LME AND SOUTH CHINA SEA LME

### 10.1 BACKGROUND

#### **Project Status**

**GEF Project ID 885** is in its completion stage (documents are available at <u>www.unepscs.org</u>) and listed as "under implementation" at the GEF Project data base. The Terminal Report of the UNEP/GEF South China Sea Project was submitted in February 2009.

**GEF Project ID 1128** includes four demonstration projects to protect globally significant marine and coastal biodiversity along China's sub-tropical and tropical southeast coast.

**GEF Project ID 3025** is a Regional – World Bank / GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia and is currently in the second Installment (of 3) of Tranche 1 funding. Sub-projects, e.g. for sewage treatment plants in Vietnam and in Manila and in other coastal cities of the LMEs of East Asia, are funded through this fund. The original twelve countries included Brunei Darussalam, Cambodia, China, Indonesia, Japan, DPR Korea, RO Korea, Malaysia, Philippines, Singapore, Thailand and Vietnam. Two additional countries joined in 2005 (Lao PDR and Timor-Leste) making a current total of 14.

# 10.2 GEF Project ID 885 DETAILS

# Table 10.1 Regional - Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand

| GEF Project ID              | 885  |
|-----------------------------|--|
| Funding Source              | GEF Trust Fund   |
| Project Name                | Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand   |
| Country                     | Regional (China, Indonesia, Cambodia, Malaysia, Philippines, Thailand, Vietnam)  |
| Region                      | Regional   |
| Focal Area                  | International Waters   |
| Operational<br>Program      | 8  |
| Pipeline Entry<br>Date      | December 19, 1996  |
| PDF-B Approval<br>Date      | December 19, 1996  |
| Approval Date               | November 01, 2000  |
| CEO Endorsement<br>Date     | December 12, 2001  |
| GEF Agency<br>Approval Date | January 22, 2002   |
| Project Status              | Under Implementation   |
| GEF Agency                  | UNEP - United Nations Environment Programme  |
| Executing Agency            | Secretariat for the action plan for Seas of East Asia (EAS/RCU); South China Sea Informal Working<br>Group FAO; IOC-WESTPAC; Wetlands International Asia Pacific SACRS; SWOL; Ministries of<br>Environment in each Country |

#### 10. Gulf of Thailand and South China Sea LMEs

- Description The overall goal of the Project is to foster and encourage, at a regional level, collaboration and partnership in addressing transboundary environmental problems of the South China Sea between all stakeholders and at all levels. The Project also seeks to enhance the capacity of the participating governments to integrate environmental considerations into national development planning. In the medium term, the objective of the project is to facilitate an agreement on specific targeted and costed actions for the longer term to address the priority transboundary issues and meet the targets which emerged from the diagnostic study, and the framework program of actions completed during the PDF-B phase. The priorities that will be addressed are wide ranging in both context and proposed areas of action: (i) habitat conversion and loss; (ii) over-exploitation of fisheries; (iii) land based pollution; (iv) regional co-operation. Stess is placed on co-ordination of actions by diverse organisations, agencies, NGOs, private sector, government entities both a the national and regional levels.
- Implementation Status Among other achievements during FY07 the revised SAP (draft 3) has been finalised by the PCU with additional inputs from the regional working groups and task forces between March to July 2007. The Regional Task Force on Economic Valuation finalised economic valuation of coastal habitats for inclusion in the revised SAP. A proposed framework for regional cooperation in marine environment in the South China Sea has developed by the Regional Task Force on Legal Matters. Two joint meetings of management teams of transboundary demonstration sites support bilateral cooperation between Cambodia-Vietnam and Cambodia-Thailand in environment management in the transboundary waters.

 
 PDF B Amount
 335,000 US\$

 GEF Project Grant
 16,414,001 US\$

 GEF Grant
 16,399,000 US\$

 Cofinancing Total
 16,399,000 US\$

 Project Cost
 33,148,000 US\$

 GEF Agency Fees
 587,000 US\$

 GEF Project Grant (CEO Endo.)
 16,414,001 US\$

 Project Cost (CEO Endo.)
 34,389,830 US\$

 GEF Agency Fees (CEO Endo.)
 34,389,830 US\$

#### Project Documents

Project Appraisal Document (CEO Endorsement - Rev)

Project Document for WP

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**NOTE** that Thailand is also included in **GEF Project ID 3025** listed in the World Bank – GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia. South China Sea LME, Yellow Sea LME and the PEMSEA project partnerships for Environmental Management of the Seas of East Asia are all assisted by funds from this Investment Fund.

Table 10.2 GEF Project ID 1128 Details

# China - Biodiversity Management in the Coastal Area of China's South Sea

| GEF Project ID              | 1128   |
|-----------------------------|--|
| UNDP PMIS ID                | 964  |
| Funding Source              | GEF Trust Fund   |
| Project Name                | Biodiversity Management in the Coastal Area of China's South Sea   |
| Country                     | China  |
| Region                      | Asia and the Pacific   |
| Focal Area                  | Biodiversity   |
| Operational<br>Program      | 2  |
| Pipeline Entry<br>Date      | April 11, 2000   |
| PDF-B Approval<br>Date      | April 25, 2000   |
| Approval Date               | October 15, 2002   |
| CEO Endorsement<br>Date     | December 21, 2004  |
| GEF Agency<br>Approval Date | February 02, 2005  |
| Project Status              | IA Approved  |
| GEF Agency                  | UNDP - United Nations Development Programme  |
| Executing Agency            | State Oceanic Administration   |
| Description                 | The objective of this project is to protect globally significant marine and coastal biodiversity along China's su-tropical and tropical southeast coast between its border with Vietnam and latitude 28 N, corresponding with the border of Fujian and Zhejiang provinces.   |
| Implementation<br>Status    | Stora Enso, a private enterprise based in Gguangxi, will contribute a total of \$230,000 to<br>the demonstration site of Shankou to carry out 1) biodiversity action plan for areas<br>adjacent to Stora Enso's eucalyptus plantation project; 2) activities to promote<br>community involvement in MPA management; 3) mangrove restoration in abandoned<br>shrimp farming ponds. Contribution agreement between UNDP and Stora Enso will be<br>signed in the forth quarter subject to completion of a work plan which is now under<br>preparation by Guangxi Land and Resources Bureau. First payments to seven sub-<br>contracts have been made and biological and social-economic baseline information is now<br>in the process of collection in four demonstration sites under the components of<br>strengthened MPA capacity and best practices. A marine biodiversity conservation and<br>ecosystem management training and education training course for all project staff was<br>undertaken focusing on UNDP project management, marine biodiversity policies and<br>legal frameworks. An MPA advisor and a conservation biology advisor are under the<br>process of recruitment to guide and advise the ongoing activities at the four<br>demonstration sites undertaken by the seven subcontractors. |
| PDF B Amount                | 320,000 US\$   |
| GEF Project Grant           | 3,195,000 US\$   |
| GEF Grant                   | 3,515,000 US\$   |
| Cofinancing Total           | 43,410,000 US\$  |
| Project Cost                | 46,925,000 US\$  |
| GEF Agency Fees             | 382,000 US\$   |

# 10. Gulf of Thailand and South China Sea LMEs

| GEF Project Grant<br>(CEO Endo.) | 3,195,000 US\$   |
|----------------------------------|--|
| Cofinancing Total<br>(CEO Endo.) | 9,234,000 US\$   |
| Project Cost (CEO<br>Endo.)      | 12,749,000 US\$  |
| GEF Agency Fees<br>(CEO Endo.)   |  |
|                                  | Project Documents  |
|                                  |  |
|                                  | Endorsement Letter from Government   |
|                                  | Endorsement Letter from Government<br>Project Appraisal Document-Project Brief   |
|                                  | Endorsement Letter from Government<br>Project Appraisal Document-Project Brief<br>Project Appraisal Document (for CEO Endorsement) |

Project Brief (Revised)

Project Review

PDF-B Document

# **10.3 CONTACT INFORMATION**

#### **10.3.1 Contact information for Project ID 885**

**IA Contact: Mr Ahmed Djoghlaf**, Executive Co-ordinator, UNEP/GEF Co-ordination Office, UNEP, Nairobi, Tel: 254-2-624166; Fax: 254-2-624041; Email: Ahmed.Djoghlaf@unep.org

**10.3.2 Contact information for Project ID 3025** (brief appears Part II, this document). GEF is the Implementing Agency for this project; World Bank is Executing Agency, with local East Asia governments, PEMSEA Regional Programme Office and other Financial Institutions.

Mr. Robin A. Broadfield Tel 202-473-4355 Email rbroadfield@worldbank.org

# **10.4 EXCERPTS FROM PROJECT DOCUMENTS**

# Table 10.3 Project Planning Matrix from Project ID 885

| PROJECT PLANNING MATRIX  |  |  |  |
|--|--|--|--|
| SUMMARY  | OBJECTIVELY VERIFIABLE<br>INDICATORS   | MEANS OF VERIFICATION  | CRITICAL ASSUMPTIONS AND RISKS   |
| Overall Objectives   |  |  |  |
| Improved regional co-ordination of<br>the management of the South China<br>Sea marine and coastal environment                  | Finalised Strategic Action Programme<br>(SAP)  | Adoption by an Intergovernmental meeting of COBSEA (Mtg. Rpt.).  | Elaborated SAP will be accepted by the participating Governments. This assumption seems likely to be met since agreement was reached on the framework during the XIIIth meeting of COBSEA.   |
| Improved national management of the marine and coastal habitats  | Development and Adoption of up to 7<br>National Action Plans in support of the<br>regional SAP   | Adoption of NAPs by National<br>Governments and integration into<br>sustainable development planning.  | That governments will develop and adopt NAPs. This assumption is likely to<br>be met since the approved framework SAP contains specified actions for<br>development of such plans.   |
| Improved integration of fisheries and<br>biodiversity management in the Gulf<br>of Thailand                                    | Agreement on joint priorities for regional<br>action between the government<br>representatives attending COBSEA.   | Adoption by Governments of goals and<br>objectives relating to fisheries and<br>environment (Mtg. Rpts.).  | That governments support more integrated approaches at national level to<br>management of fisheries and environmental issues in the Gulf of Thailand.<br>This assumption presents a higher risk than those outlined above due to<br>inherent sectorial approaches at the national level. The inter-ministry<br>committees will play a critical role in reducing this risk.   |
| Outcomes   |  |  |  |
| Adoption of improved mechanisms<br>for regional co-operation in the<br>management of the environment of<br>the South China Sea | Finalisation of agreements on<br>mechanisms for improving regional co-<br>operation at an intergovernmental level.<br>Increased support for regional co-<br>operative mechanisms.  | Adoption by a high level<br>intergovernmental meeting on<br>agreements for co-operation. Increased<br>government contributions to regional<br>trust funds.   | That unresolved territorial claims may distract from the primary target of<br>achieving improved regional co-operation. The extent of this risk cannot be<br>fully evaluated however it is considered to be low to medium and subject to<br>events outside the control of the project.   |
| Jointly agreed actions relating to<br>fisheries and environment in the Gulf<br>of Thailand                                     | Development of regional management<br>plans to establish a system of refugia to<br>maintain important transboundary fish<br>stocks.  | Adoption by appropriate<br>intergovernmental fora of a regional<br>management plan (Mtg Rpts of<br>EAS/RCU)  | That joint agreement can be reached between environment and fisheries<br>ministries at the national level. This assumption presents a higher risk than<br>the others given the sectorial approach to fisheries and environment at<br>national government level.  |
| Adoption of the SAP at a regional level  | Finalisation of the SAP through the work of regional task forces of experts  | Adoption of the SAP by a meeting of<br>COBSEA (Mtg. Rpt.)<br>Publication of the SAP by the EAS/RCU   | That the SAP can be finalised in a manner acceptable to the Governments.<br>This assumption seems likely to be met since the framework for the SAP has<br>already been approved by governments.  |
| Acceptance of the TDA and SAP at a National level  | Inclusion of transboundary and regional<br>considerations in the National Action<br>Plans  | Adoption of NAP's containing such<br>elements (Nationally Published NAPs)  | That governments will include regional considerations in their assessment of<br>National priorities for action. This assumption seems likely to be met given<br>existing national commitments to regional action under the East Asian Seas<br>Action Plan.   |
| Implementation of components of the SAP  | Development & adoption of regional<br>guidelines and standards for various<br>sources of pollution. Development of<br>criteria for selection and adoption of<br>priority areas for: habitat management;<br>protection as <i>refugia</i> for fish stocks; Hot<br>Spots of regional & transboundary<br>significance. | Endorsement by appropriate meetings of<br>COBSEA (Mtg. Rpt.)<br>Endorsement of the criteria by regional<br>expert meetings and adoption of the<br>priority listing at national and regional<br>level (Mtg Rpts.) | Governments will agree and adopt the priority listing of pollution hot spots at<br>national and regional level. This assumption will likely be met since the<br>TDA has identified the 36 regional hot spots through the national reports<br>prepared as part of the TDA preparation process.<br>Governments will agree and adopt the priority listing of habitat areas for<br>improved management at national and regional level. This assumption<br>presents a slightly higher risk in that discussion of specific areas for<br>protection and sustainable management has not yet commenced. |

| Regional database for planning and management   | Development of comparable national<br>data and information sets by each<br>participating country   | Publication of meta-data catalogues and<br>inclusion of plans for data management<br>as a component of national management<br>plans  | Limitations of capacity at a national level pose a significant risk in some countries. The project is designed to maximise inter-country exchange of expertise and to support the work at national level.  |
|---|--|--|--|
| Results   |  |  |  |
| 7 sets of national management plans<br>for 4 specific habitats  | Preparation and publication of 7 sets of national management plans.  | Adoption of the management plans by<br>national governments (Mtg. Rpts.<br>Publication by the EAS/RCU)   | That management plans can be drafted that are acceptable to national governments. This assumption is likely to be met since the development of such guidelines plans was agreed as a component of the SAP  |
| 7 national databases for 4 specific habitats  | Establishment of operational capacity for data management  | Adoption of the data management function by department of environment  | That insufficient support will be provided by governments. This risk is low since in a number of cases such capacity already exists  |
| Adopted portfolio of priority habitat<br>projects within the region   | Preparation of a draft portfolio by task<br>teams and expert groups  | Presentation to and adoption by a meeting of COBSEA  | That agreement can be reached between governments on the regional<br>priorities. This risk seems low since the framework SAP calls for<br>development and adoption of such regional priorities   |
| 4 national and one regional<br>management plans to establish a<br>system of refugia to maintain<br>important transboundary fish stocks      | Preparation and publication of 4 national<br>and 1 regional management plan  | Adoption of the regional plan by<br>appropriate expert group and<br>intergovernmental meetings of<br>environment and fisheries ministries<br>(Mtg. Rpts. plus publication by the<br>EAS/RCU)   | That a regional plan can be drafted that is acceptable to national governments. This assumption is likely to be met since the development of such a regional plan was agreed as a component of the SAP]  |
| Educational and Public awareness<br>materials on sustainable fisheries<br>practices and fish stock conservation<br>in the Gulf of Thailand. | Preparation and publication of materials<br>in local languages   | Use of the materials in workshops with local communities   | That such materials can be disseminated in the multiplicity of languages<br>involved. This assumption is dependent upon governments active<br>participation and past practice suggests that this presents a minimal risk.  |
| Evaluation of a blast fishing detection devise  | Published report of field test results of<br>the effectiveness of a prototype as a<br>deterrent  | Presentation of the results to a meeting of COBSEA   | That Fisheries officers will be reluctant to participate in field testing. This is a low risk since blast fishing is a regional problem, banned in all countries.  |
| Agreed regional priority listing of<br>transboundary pollution hot spots  | Preparation of criteria, analysis and<br>listing of priorities from among the 36<br>identified hotspots. Completion by<br>countries of national evaluations of water<br>quality objectives and standards. Priority<br>portfolio of projects for investment<br>studies or remedial action and<br>preliminary cost benefit analyses. | Adoption of the priority listing of hot-<br>spots at a regional expert and subsequent<br>COBSEA (Mtg. Rpts).<br>Adoption at national level of water<br>quality objectives and standards.<br>Presentation of preliminary evaluation of<br>costs and benefits of alternative actions<br>to a partnership conference. | That agreed criteria can be developed and the resulting priorities accepted at<br>a regional level. This assumption is likely to be met since the initial listing<br>has been presented to COBSEA in the TDA.<br>That countries will agree to adopt water quality objectives and standards.<br>This seems likely to be met since this is a target of the framework SAP<br>adopted by COBSEA. |
| Regionally adopted water quality<br>objectives, water quality and effluent<br>standards   | Review of water quality data for the SCS<br>sensitivity analysis of critical habitats<br>and regional overview of transboundary<br>movement of pollutants  | Adoption at the regional level of water<br>quality objectives and standards (Mtg<br>Rpts & publications)   | That countries can agree on common water quality standards for the South<br>China Sea. The extent of the risk of non-agreement cannot be evaluated<br>although agreement does exist to initiate such a process in the framework<br>SAP.  |
| Meta-database of national legislation<br>relating to the environment of the<br>South China Sea  | Preparation of national reviews and<br>presentation to relevant expert working<br>group meetings   | Publication of a metadatabase  | That translations of appropriate legislation can be compiled according to the workplan and timetable. The extent of this risk depends in part on the volume of legislation involved but seems low.   |

|   |   |  | T  |
|---|---|--|--|
| Regional review of countries                                  | Preparation of a draft review and         | Publication of the review                  | None   |
| obligations under global conventions                          | presentation to a relevant expert meeting | ·I   | <u> </u>   |
| Components/Activities   |   |  |  |
| Establishment of National working                             | National data and info. management        | Presentation of national reports to        | That governments will be slow to respond and that reviews and plans are not    |
| specific data and information reviews:                        | National reports                          | regional Task Force meetings               | the DDE R phase the timetable has been prepared to allow adequate time         |
| national reviews of restoration                               | Draft national management plans           | 1  | the FDF-B phase the uniciable has been prepared to anow adequate time.         |
| activities: and national management                           | Dian national management plans            | 1  |  |
| plans   | 1   | 1  |  |
| Establishment of regional task forces                         | Preparation of draft national guidelines  | Publication of regional outputs;           | None   |
| and preparation of regional                                   | regional plans and convening of expert    | Mtg Rpts & publications                    |  |
| management plans  | and COBSEA meetings.                      |  |  |
|   | ļ'  | <u> </u> '                                 |  |
| Determination of criteria, preparation                        | Preparation of drafts and convening of    | Publication of regional outputs;           | That countries will agree to select priority demonstration sites is an         |
| of priority actions and investment                            | regional expert and subsequent COBSEA     | Mtg Rpts & publications                    | assumption likely to be met since this is an action approved in the framework  |
| portfolios  | meetings according to the agreed          | 1  | SAP.   |
| Implementation of 0 demonstration                             | Workplan                                  | Adaption of the priority listing and       | As shows   |
| activities  | transboundary sites                       | and and argument of the management plans   | As above   |
| activities  | transboundary sites                       | for selected sites                         |  |
| Prioritisation of regional and                                | Development of criteria & impact          | Publication of criteria and listing of     | As above   |
| transboundary pollution Hot spots for                         | analysis                                  | selected priorities                        |  |
| management intervention                                       | Selection of priority hotspots &          |  |  |
|   | determination of management actions       | ļ'   |  |
| Fisheries and Environment:                                    | Detailed Analysis of issues relating to   | Publication of Analysis and priority areas | As above   |
| identification of areas for protection                        | transboundary stocks and joint resolution | for action                                 |  |
| and management for maintenance of                             | of priority areas for action              | 1  |  |
| stocks of transboundary importance in<br>the Culf of Theiland | 1   | 1  |  |
| Sustainability and implementation of                          | Development of economic evaluations:      | Adoption of a regional approach to         | An assumption is that national governments will take action at a national      |
| the SAP   | priority investment portfolios            | economic evaluation of environmental       | level to implement the recommendations. The risk associated with this          |
| ule SAI   | priority investment portionos             | goods and services and priority            | assumption cannot be evaluated since this will depend on other national        |
|   | 1 '                                       | investment portfolios.                     | development and investment priorities. However through careful integration     |
|   | 1   | r · · · · · · · · · · · · · · · · · · ·    | of the regional priorities into national action plans it is hoped that this    |
|   | 1 '                                       | 1  | assumption will be met.  |
| Establishment of the Management                               | Hiring of staff                           | Issuance of contracts                      | That staff can hired within three months of completion of the internal project |
| Framework   | Meetings of the Project Steering          | Publication of Meeting reports             | document.  |
|   | Committee                                 | Mtg reports and donor investment           |  |
|   | Donors Consultations                      | l'   |  |
| Drafting of National Action Plans for                         | Preparation of drafts according to an     | Adoption of National Action Plans by       | It is assumed that governments will be willing to adopt such national plans    |
| the 4 critical habitats                                       | agreed timetable.                         | governments                                | an assumption which is likely to be met since this is an action specified in   |
|   | 1 '                                       | 1  | the framework SAP  |

# **10.4.2 Excerpts from the Executive Summary for Project 3025**

The countries of East Asia, in collaboration with the GEF, the World Bank, and UNDP, have replicated the Danube model and established a Strategic Partnership to catalyze and scale up investment in land-based pollution reduction in coastal areas in East Asia. The Strategic Partnership comprises two parallel components, a *Financing Component* (i.e., the Investment Fund), and a *Regional Component*, both of which have achieved GEF pipeline entry 6 and, in the case of Fund, also Council approval of a \$25 million contribution to its first tranche.

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#### Objective of the Fund

The long-term goal of the Partnership Fund is to reduce pollution of the seas of East Asia. The contributing objective of the Fund is to leverage new, innovative and cost-effective investments in land-based pollution reduction through the removal of technical, institutional, and financial barriers. Expected outcomes of the Fund would be: new innovative investment in activities that reduce land-based pollution; removal of technical, institutional and financial barriers that currently limit investment in pollution reduction; and, replication of the cost-effective pollution reduction technologies and techniques demonstrated by the Fund.

#### Rationale for Bank and GEF involvement

The strategic impact of the Fund will be significant, because this collaboration between the GEF and the World Bank will catalyze a new partnership of global strength. The land-based pollution challenges facing the countries of East Asia to which it is directed are significant, and removing the barriers to them requires new political, technical, institutional and financial capacity. Similarly, innovation and the testing of new technologies and techniques involves a level of risk that the countries could not bear on their own. Without GEF support, the Fund's innovations will not be attempted with either conventional loans or budgetary resources. GEF grant financing therefore provides countries with a unique opportunity to tackle these difficult challenges. The involvement and leadership of the World Bank in the Fund brings its global and regional influence and technical capacity to fully support countries in this task. In essence, the Fund partnership between GEF and the World Bank provides a strong, supportive, lower-risk enabling environment within which the countries can finally begin to more actively address the challenges and barriers to achieving the pollution-related objectives of the SDS-SEA. Furthermore, with GEF support and the involvement of the World Bank's knowledge sharing capabilities, the Fund will facilitate global and regional capacity building and scaling up through policy dialogue and support for policy change, the replication of success stories, the promotion of learning, and the dissemination of information and lessons learned. The Bank's East Asia and Pacific (EAP) Region is well placed to manage and contribute to the Fund. Land-based pollution reduction is a key priority of the Bank in East Asia, so the policy and capacity building activities of the EAP Region and the objectives of the Fund are fully consistent with the Bank's corporate and regional environment strategies. Moreover, IBRD and IDA lending for environmental management in the EAP region is currently about \$1 billion per year, which provides a strong base for leveraging significant new investment through the Fund. Individual GEF sub-projects supported by the Fund will be implemented by selected agencies within the recipient countries. World Bank task teams would be responsible for appraising and supervising each sub-project and for coordinating with the Fund on sub-project results.

#### Co-financing and processing

The target co-financing rate for the Fund is a minimum 1:10 (GEF: IBRD/ IDA/ other). Lower targets may be accepted on individual sub-projects on an exceptional basis if the expected benefits of the activity warrant it. However, every activity must have a minimum leveraging ratio of 1:3. The sub-projects already under preparation indicate that a higher leveraging ratio than 1:10 will be achieved. Currently it is expected that the total co-financing for the full first tranche of \$35 million (\$25 million already approved, plus the additional \$10 million requested by this submission) would be at least US\$785 million from IBRD, IDA, international donor sources, private sector investment and other co-financing. It is hoped that total GEF financing over three

tranches of the Fund combined will be US\$80 million, with co-financing investment of between US\$800 million and US\$1.5 billion.

Sub-projects under the Fund are processed according to streamlined WB/GEF procedures, and are submitted first to Council for review, then to the GEF CEO for endorsement. The GEF CEO approves the individual sub-projects on a rolling basis, based on the Fund eligibility criteria previously approved by GEF Council, until the limit of each tranche had been reached.

#### Types of sub-projects

The types of sub-projects eligible for financing under the Fund are World Bank projects that demonstrate innovative, cost-effective solutions for reducing land-based pollution and/or remove significant barriers to investments in land-based pollution reduction of the marine environment. Each sub-project includes investments in one or more of the following types of activities:

\_ **Innovative financing mechanisms:** improving access to finance for rural and urban landbased pollution reduction projects through implementation of revolving funds, crosssectoral financing, and other financing innovations;

\_ Wastewater and sanitation management and treatment: demonstration and use of innovative technology and innovative methods for wastewater and sanitation management (e.g., construction of engineered wetlands, construction of combined wastewater/septage treatment plants, enhancements to existing infrastructure and systems to improve their efficiency; improvements in the efficiency of septage collection services; community-based wastewater collection and treatment);

\_ Water-borne pollution from solid waste: leachate control programs for landfills and dump closures;

\_ **Pollution control in rural and peri-urban areas**: treatment of livestock waste, costeffective approaches to agricultural and aquaculture pollution control, innovative management systems for collection and treatment of waste from agro-industries;

\_ Coastal ecosystem management: wetland creation, restoration, and preservation;

education and awareness projects; information exchange and sharing;

\_ *Institutional reform*: utility reform, institutional rationalization, establishing links and creating opportunities for collaboration between NGOs, government agencies, and private companies;

\_ Capacity building: consultancies, training programs, dissemination of best practices;

\_ **Policy and planning improvements:** improving the legal, regulatory, and policy climate for pollution reduction investment;

**Management reforms:** establishment of public-private partnerships and private sector management concessions for pollution control.

Cross-sectoral approaches are encouraged, especially integrated water resource management with environment protection, and particularly for land-based pollution hotspots.

#### Sub-project eligibility criteria

A set of eligibility criteria has been developed for the Fund which the GEF CEO uses to assess the eligibility of each sub-project proposed by the World Bank for financing under the Fund.

A proposed World Bank project is eligible to request GEF co-financing from the Fund for a specific proposed investment if all of the following seven conditions are met:

- located within the coastal watersheds of one of the six East Asian LMEs: East China Sea, South China Sea, Yellow Sea, Sulu-Celebes Sea, Gulf of Thailand, and the Indonesian Seas;
- demonstrates an innovative technical, institutional, or financial mechanism to combat land-based water pollution, and/or removes a significant technical, institutional, or financial barrier that reduces cost-effective investments in pollution control in that location;
- has high likelihood of replication and/or scalability in that country and/or more widely in East Asia coastal regions;
- is unlikely to proceed unless grant financing from GEF were allocated to it;
- the necessary co-financing is available;
- has been endorsed by the proposing country's GEF focal point
- meets all relevant World Bank appraisal criteria.

# 11. HUMBOLDT CURRENT LME

### 11.1 BACKGROUND

#### Present project status:

The Project document was approved by both countries in May 2009 and approved by the GEF CEO and the GEF Agency in May 2009. The current project website is **URL** <u>http://www.imarpe.gob.pe/imarpe</u>.

# 11.2 GEF PROJECT ID 3749 DETAILS

# Table 11.1. Regional - Towards Ecosystem Management of the Humboldt Current Large Marine Ecosystem

| GEF Project ID           | 3749  |
|--------------------------|---|
| UNDP PMIS ID             | 4147  |
| Funding Source           | GEF Trust Fund  |
| Project Name             | Towards Ecosystem Management of the Humboldt Current Large Marine Ecosystem   |
| Country                  | Regional (Chile, Peru)  |
| Region                   | Latin America and Caribbean   |
| Focal Area               | Multi Focal Area  |
| Operational<br>Program   |   |
| PIF Approval Date        | September 15, 2008  |
| PPG Approval<br>Date     | September 15, 2008  |
| Approval Date            | November 13, 2008   |
| Project Status           | Council Approved  |
| GEF Agency               | UNDP - United Nations Development Programme   |
| Executing Agency         | IFOP, IMARPE  |
| Description              | Ecosystem-based management (EBM) in the Humboldt Current Large Marine Ecosystem (HCLME) is advanced through a coordinated framework that provides for improved governance and the sustainable use of living marine resources and services |
| Implementation<br>Status |   |
| PPG Amount               | 75,000 US\$   |
| GEF Project Grant        | 6,925,000 US\$  |
| GEF Grant                | 7,000,000 US\$  |
| Cofinancing Total        | 25,190,001 US\$   |
| Project Cost             | 32,190,001 US\$   |
| GEF Agency Fees          | 700,000 US\$  |
|                          | Project Documents   |
|                          | PIF Document (Revised)  |
|                          | PPG Document  |

#### Table 11.2 Cover pages for PIF for GEFSEC Project ID 3749

# **PROJECT IDENTIFICATION FORM (PIF)**

**PROJECT TYPE: FULL SIZE THE GEF TRUST FUND** 

> Submission Date: August 25, 2008 Re-submission Date: September 10, 2008

| INDICATIVE CALENDAR          |                |  |  |
|------------------------------|----------------|--|--|
| Milestones                   | Expected Dates |  |  |
| Work Program (for FSP)       | November 2008  |  |  |
| CEO Endorsement/Approval     | April 2009     |  |  |
| GEF Agency Approval          | May 2009       |  |  |
| Implementation Start         | July 2009      |  |  |
| Mid-term Review (if planned) | July 2011      |  |  |
| Implementation Completion    | July 2013      |  |  |

#### PART I: PROJECT IDENTIFICATION

GEFSEC PROJECT ID: 3749 GEF AGENCY PROJECT ID: 4147 COUNTRYIES: Chile, Peru PROJECT TITLE: Towards ecosystem management of the Humboldt Current Large Marine Ecosystem GEF AGENCY: UNDP OTHER EXECUTING PARTNER(S): IFOP, IMARPE GEF FOCAL AREA (S): International Waters, Biodiversity GEF-4 STRATEGIC PROGRAMS: IW/SP1, BD SP2 & indirectly SP4 NAME OF PARENT PROGRAM/UMBRELLA PROJECT: NA

#### A. PROJECT FRAMEWORK

**Project Objective**: Ecosystem-based management in the HCLME is advanced through a coordinated framework that provides for improved governance and the sustainable use of living marine resources and services

| Project<br>Components                                      |    | Expected Outcomes  | Expected Outputs   | Indic<br>e G<br>Fina<br>nç | ativ<br>EF<br>Inci<br>9* | Indic:<br>Co<br>finan<br>* | ative<br>)-<br>cing | Total (\$) |
|--|----|--|--|----------------------------|--------------------------|----------------------------|---------------------|------------|
|  |    |  |  | (\$)                       | %                        | (\$)                       | %                   |            |
| 1. Planning and<br>policy<br>instruments for<br>ecosystem- | TA | <ul> <li>Regional agreement on priority<br/>trans-boundary and ecosystem<br/>issues enables development of<br/>policies &amp; plans for EBM</li> </ul> | <ul> <li>Critical knowledge gaps filled to<br/>develop EBM- HCLME, including<br/>biodiversity conservation targets,<br/>and taking into account the 5</li> </ul> | 1.20                       | 16.7<br>5                | 5.96                       | 83.2<br>5           | 7.16       |
| based<br>management  |    | <ul> <li>Regional agreement on<br/>governance reforms lays the</li> </ul>  | module approach to LME<br>management   |                            |                          |                            |                     |            |
| (EBM) of the HCLME are                                     |    | foundation to address priority TB/ecosystem issues and   | <ul> <li>Ecosystem Diagnostic Analysis<br/>(EDA) developed including the</li> </ul>  |                            |                          |                            |                     |            |
| agreed and in place at regional                            |    | facilitates the inter-sectoral coordination threat abatement   | definition of trans-boundary issues,<br>causes & MPA conservation targets  |                            |                          |                            |                     |            |
| and national   |    | <ul> <li>National Inter-ministerial</li> </ul>   | • Strategic Action Programme (SAP)   |                            |                          |                            |                     |            |
| levels   |    | Committees functioning   | formulated & endorsed at highest   |                            |                          |                            |                     |            |
| (SAP, NAPs,  |    | Strengthened National Protected  | levels (with threats abatement   |                            |                          |                            |                     |            |
| EDA and  |    | Areas Plans (NPAP) and   | measures & MPA expansion costs)  |                            |                          |                            |                     |            |

# 11. Humboldt Current LME

| NPAS)<br>(GEF IW US\$<br>900,000 / BD<br>US\$300,000 )  |    | <ul> <li>strategies enables the reduction<br/>of marine and coastal ecosystem<br/>conservation gaps in the mid to<br/>long term (Baseline Chile 1%,<br/>Peru &lt;1%; national policy<br/>targets 10% of relevant habitats)</li> <li>Increased national financial<br/>commitments for critical actions<br/>for EBM including MPA<br/>financing strategies and<br/>pollution abatement, enables<br/>long term compliance with<br/>biodiversity conservation targets<br/>and assures effective operations<br/>of 5 new MPA –see targets<br/>values in component 4)</li> </ul>  | •     | Permanent bi-national work forum<br>for SAP development and<br>implementation functioning and<br>coordinated with national agencies<br>Awareness programme on EBM for<br>decision-makers, sectors and<br>resource-user groups including<br>project web site consistent with<br>IW:LEARN guidance and tools<br>Participation in biennial GEF IW<br>Conferences as well as other IW<br>Learn type activities<br>Capacities strengthened for<br>negotiation of agreements in<br>relevant fora and for conflict<br>resolution<br>Suite of process, stress reduction<br>and environmental status indicators<br>for the SAP defined and agreed<br>System level plans with targets and<br>financial strategies defined for   |      |        |      |        |      |
|---|----|---|-------|---|------|--------|------|--------|------|
| 2. Institutions<br>and individual<br>have the skills<br>for SAP<br>implementation<br>and for up-<br>scaling the<br>results of pilot<br>interventions to<br>the systems<br>level<br>(GEF IW<br>US\$780,000/<br>BD US\$520,000<br>) | ТА | <ul> <li>Sectoral and investment<br/>decisions integrate guidance on<br/>MPA management &amp; responses<br/>to the HCLME's natural high<br/>variability</li> <li>Increased % of fisheries<br/>management decisions based on<br/>integrated information that<br/>includes multi-disciplinary<br/>parameters including natural and<br/>ENSO related variability</li> <li>Increased % artisanal sector<br/>representatives participating in<br/>fisheries fora with an enhanced<br/>understanding of ecosystem<br/>goods and services and their<br/>regulatory frameworks, enables<br/>future up scaling of MPA pilots</li> <li>Responsible institutions have<br/>capacities and internal processes<br/>for prioritizing the creation of<br/>new MPA and for effective<br/>management (measured by<br/>institutional assessment<br/>scorecards)</li> <li>Oversight by PA authorities<br/>assures compliance with<br/>national standards for MPAs.</li> </ul> | • • • | Effective LME Information System<br>developed with GIS components to<br>generate scenarios (variability,<br>management approaches, trade-offs)<br>Institutions strengthened for<br>effective use of information for<br>decision-making for HCMLE<br>governance including the creation<br>of new MPAs in line with NPAPs<br>(resources, skills & procedures)<br>Market place governance tools<br>developed for fisheries management<br>(e.g. ecosystem service valuation, ,<br>fishing-gear, transformation<br>processes, new market<br>opportunities)<br>Artisanal fisheries stakeholders<br>capacity strengthened for<br>information use, participation in<br>relevant fora, & informed decision<br>making<br>National authorities trained for<br>MPA management approaches<br>Fisheries management enforcement<br>strengthened for multi- species<br>approaches & by-catch monitoring<br>Enforcement capacities<br>strengthened for applying pollution<br>abatement regulations | 1.30 | 25.0   | 3.90 | 75.0   | 5.20 |
| 3. Implementation<br>of priority<br>measures for<br>MPA & fisheries<br>regulation<br>advances<br>knowledge of<br>options for<br>enhanced<br>protection of<br>HCLME and<br>guides SAP<br>implementation                            | ΤΑ | <ul> <li>Bi-nationally coordinated and<br/>analogous norms, operational<br/>standards and knowledge<br/>advances the application of the<br/>ecosystem approach to fisheries<br/>and MPA management.</li> <li>3 MPA operating to these<br/>standards and within a Guano<br/>Master Plan increases the % of<br/>marine/coastal interface under<br/>protection in Peru from: 3.4%<br/>baseline to 6.3%. In Chile 2<br/>MPAs increase off-shore</li> </ul>  | •     | Coordinated bi-national ecosystem<br>management approaches piloted for<br>shared anchovy stock e.g. multi-<br>species assessments, joint<br>monitoring<br>Strategies & norms for HCLME -<br>MPAs coordinated between<br>countries<br>Bi-national MPA knowledge<br>management programme<br>MPA management approaches<br>developed to address background<br>environmental variability, long-term  | 1.28 | 20.5 8 | 4.94 | 79.4 2 | 6.22 |

| (GEF IW US\$<br>585,000 / BD<br>US\$700,000 )   | <ul> <li>protection from 858km<sup>2</sup> to 4,358</li> <li>km<sup>2</sup>. This reduces biodiversity pressure and improves status as follows: (i) protection of key reproductive sites for flagship species, key habitats, (ii) compatibility of fishing pressures in adjacent sea with biodiversity management goals; (iii) management of threats such as fisheries ( by-catch, stress from reduced food availability, (iv) provides increased security for movements across seascapes</li> <li>climate change, and migratory and transzonal species (boundaries; no take zones; fishing catches)</li> <li>Guano Islands, Isles and Capes Master Management Plan developed with financing strategy &amp; management categories within the overall guidance of SERNANP</li> <li>Operational management procedures and categories for off-shore MPA integrated in Chiles PA policy Chile</li> <li>M&amp;E systems operational for the Project and at the ecosystem level including new impact indexes to improve predictive &amp; preventive capacity for the use of living marine resources and coastal-marine areas</li> </ul> |      |           |       |           |       |
|---|---|------|-----------|-------|-----------|-------|
| 4. Marine and<br>coastal<br>protected areas<br>piloted that<br>underpin<br>conservation<br>and sustained<br>ecosystem<br>productivity<br>(GEF IW<br>US\$600,000 / BD<br>US\$1,840,000 ) | <ul> <li>Increased protection of fish stocks and coastal &amp; marine habitats in BD pilots</li> <li>Interagency coordination mechanisms in pilots enable regulation and management of economic activities within multiple use areas of the pilot MPAs</li> <li>5 habitat types unprotected in the baseline are effectively managed representing 4,260 km<sup>2</sup> of <u>additional</u> seascape and coastal area. As follows (km<sup>2</sup>)</li> <li>&gt; Guano Capes (Peru) 212.5km<sup>2</sup></li> <li>&gt; Gayons (Chile &amp; Peru) 350 km<sup>2</sup></li> <li>&gt; Canyons (Chile &amp; Peru) 350 km<sup>2</sup></li> <li>&gt; Increased protection of fish stocks and coastal for the relevant Fisheries and PA authorities in pilot MPAs</li> </ul>  | 2.44 | 23.6 2    | 7.89  | 76.3<br>6 | 10.33 |
| 5. Project management   | (GEF IW US\$300,000 / BD US\$400,000 )  | 0.70 | 21.8<br>8 | 2.50  | 78.1<br>3 | 3.20  |
| Total project<br>costs  |   | 6.92 | 21.5<br>5 | 25.19 | 78.4<br>5 | 32.11 |

# **B.** INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

|              | Project<br>Preparation* | Project    | Agency Fee | Total      |
|--------------|-------------------------|------------|------------|------------|
| GEF          | 75,000                  | 6,925,000  | 700,000    | 7,700,000  |
| Co-financing | 75,000                  | 25,190,000 |            | 25,265,000 |
| Total        | 150,000                 | 32,115,000 | 700,000    | 32,965,000 |

# C. INDICATIVE CO-FINANCING FOR THE PROJECT (including project preparation amount)

| Sources of Co-financing         | Type of Co-financing | Amount     |
|---------------------------------|----------------------|------------|
| Project Government Contribution | Grant                | 10,310,000 |
| Project Government Contribution | In-kind              | 9,680,000  |
| GEF Agency                      | Grant                | 50,000     |
| Private Sector                  | Grant                | 510,000    |
| Private Sector                  | In-kind              | 800,000    |
| NGO                             | Cash                 | 500,000    |

# 11. Humboldt Current LME

| Universities       | In-kind  | 100,000    |
|--------------------|----------|------------|
| Others             | Grant    | 620,000    |
| Others             | sIn-kind | 2,620,000  |
| Total co-financing |          | 25,190,000 |
|                    |          |            |
|                    |          |            |

# **11.3 CONTACTS INFORMATION**

#### **Project Contacts**

#### Pablo Huidobro

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#### V. Adm. <u>Hector Soldi</u>

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#### Marcos Nilo

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#### Paula Caballero

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#### Godofredo Cañote

Economist Executive Director

#### Dew Basauri Chief of International Matters IMARPE

#### Rogelio Villanueva

Flowers National Consultant of the Project IMARPE

Briar Sanchez, Coordinator National of the Project IMARPE

# Letter from Paula Caballero to Kenneth Sherman, 17 May 2009

#### Dear Ken

As promised, I am sharing with you the HCLME Project Strategy which has been approved by both countries. You may notice differences from stand-alone IW projects. As you will recall, this is one of only two projects which combine IW funds with the Biodiversity RAF (GEF allocation). In fact, the BD allocation at \$4.2m is higher than that from IW (\$3.5) Therefore, it has been necessary to merge the usual requirements of each focal area as well as the decision of both countries to focus their BD funds on the establishment of Marine Protected Areas.

In Chile the Government decided to allocate its BD funds to the establishment of high seas MPAs in two sea mounts and to explore the possibility of an MPA in a marine canyon. In Peru the Government is focusing on the establishment of the "System of Guano Islands, Isles and Capes", essentially a network of coastal-marine protected areas along the entire coast of Peru. The result of the IW-BD merger is thus an initiative that is far-reaching, has very strong country buy-in, and ably lays the foundations for solid progress towards EBM approaches in the region. (One change in particular that you will notice is that the TDA is termed "Ecosystem Diagnostic Analysis (EDA)", but it is only a change in nomenclature as the process and the end result is the same). As noted before the 5 module approach to LME management will be applied.

In terms of timing, we are aiming to finalize the project document by early June in order to submit to GEF by end June. We are finalizing the first full draft of the project document in order to prepare for translation and dissemination. If all goes well, we would be starting up the project by end 2009.

This project has a long history and I know that you have been with it from the start. Both governments as well as UNDP are very keen to ensure that NOAA is a full partner in this project from the outset. We would all therefore look forward to discussing with you and other colleagues at NOAA ways in which the ongoing work that NOAA carries out in the region can support the GEF HCLME project. I am copying Admiral Soldi from Peru and Mr Nilo from Chile, the national focal points for the project.

I also take this opportunity to express my appreciation for your invitation to the 11th LME Consultative Meeting. Although I will not be able to attend I am pleased to report that Dr Martin Johnston, the new CTA for the Caribbean LME project, will be there.

Best regards, Paula

# 11.4 EXCERPTS FROM THE PROJECT DOCUMENTS

PART II: PROJECT JUSTIFICATION [from the PIF] THE ISSUE, HOW THE PROJECT SEEKS TO SOLVE IT, & EXPECTED GLOBAL ENVIRONMENTAL BENEFITS:

The Humboldt Current supports one of the world's most productive Large Marine Ecosystems, with an estimated primary productivity of 1500 gCm<sup>2</sup>/yr. Although primary productivity is similar to the other four major up-welling areas in the world, fisheries productivity is unmatched, representing approximately 18-20% of the global fish catch. Total fish catch averages over 10 million mt/yr with a record of 19.4 million mt/yr in 1994. Anchovy represents 60-80% of the total marine fish catch, 99% of which is converted to fish meal for consumption by cultured fish and

livestock. The high environmental variability in the HCLME associated with short, medium and long term climate changes (seasonal, inter-annual, decadal, and multi-decadal) including the El Niño-Southern Oscillation (ENSO) events, has recurrent and dramatic effects on ecosystem productivity, stock distribution, and trophic structure.

In addition to its famous fisheries, the Humboldt Current System has globally significant biodiversity and is recognised as a World Wildlife Fund (WWF) Global 200 Ecoregion. Biodiversity assessments recognise 4 marine ecoregions exclusively within the Humboldt Current, one of which is bi-national. However, when defining bio-geographical discontinuities of the HCLME with more complete oceanographic information such as wind forcing and associated upwelling patterns, three distinct spatial areas can be defined along the latitudinal axis. These have a clear correlation between differences in species composition and dominance. For example, each of the three discrete anchovy stocks is associated with a region and is genetically differentiated from the others. Historic fisheries catch records evidence general trends, but there are marked differences among the regions. Emerging research indicates that there may be an ecological barrier between the southernmost and northern zones leading to speciation processes in response to the high volatility of this environment. In addition to this, ENSO creates permanent bottlenecks which also drive these adaptation and speciation processes along the HCLME. Recent research indicates that the South American fur seal, considered a single population ranging from Uruguay to Peru, may in fact contain three distinct groups.

The heterogeneity of the physical features, unique characteristics of water circulation, and adaptation to natural variability gives rise to significant biodiversity in the HCLME. Over 25 different habitats are recognized as conservation targets including seamounts, river estuaries, and sea canyons. There are high levels of endemism, especially in some taxonomic groups; 52% of benthonic invertebrates in Chile are endemic. There are also many migratory and transzonal species ranging from the main commercial pelagic species—jack mackerel, anchoveta, Pacific mackerel, and bonito—to cetaceans for which upwelling regions between 18°S and 30°S are important feeding stations. It is estimated that more than 1000 fish species depend on the Humboldt Current within their life cycles. Diversity in other taxa is similarly high.

A range of anthropogenic activities exerts pressure on this unique ecosystem. In terms of biodiversity, in a recent analysis led by The Nature Conservancy with the participation of national experts, the top four threats that collectively account for 90% of frequency distribution are overfishing, pollution, coastal development, and resource exploration. In Chile the growing aquaculture sector generates increasing pressures while in Peru large-scale plans for oil and gas exploration off the coast and planned mega ports constitute emerging threats. In the case of fisheries, anthropogenic pressures are exacerbated by increasing frequencies of ENSO events. The main fisheries include anchovy, sardine, mackerel, large ocean pelagics (including swordfish and tuna), and demersal fisheries (including hake). The anchovy fishery, which predominates, has two main stocks: a transboundary one and one located in central Peru. There are two major stocks of southern mackerel: one in Peru and one in central-southern Chile. In cooler years the fishery can extend beyond the 200mm EEZ and it is a significant international fisheries account for only 3% of total catch in Peru and 28% in Chile but target a greater number of fish and invertebrates, and generate higher numbers of employment.

Intensive fishing effort has generated impacts along the trophic chain. Historically, 85.6% of anchovy available biomass was consumed by top predators and 14.4% by sea birds. Until 2006, industrial fisheries extracted 85% of available anchovy biomass, leaving just 15% for all other top predators. Reduced prey availability undermines these species' resilience to ENSO events, frequently resulting in population crashes. Before the onset of large scale industrial fisheries, these populations were able to bounce back after each ENSO event, but now take longer to recover to ever reducing numbers. Seabirds and marine mammals under threat include Humboldt penguin, Peruvian diving petrel and sea otter. The iconic guano birds, which include the Peruvian cormorant, Peruvian booby and Peruvian pelican, have experienced notable

population decreases over the past decades. Moreover, excessive fishing effort generates changes in the genetic composition in a population, leading individuals to breed at younger ages, and therefore when smaller in size, thereby decreasing stock productivity.

ENSO events led to sequential changes in the dominance of certain species inducing the main commercial ones, such as anchovies and sardines. This can have negative consequences for the fishing industry and, when coupled with high fish catch levels, has resulted in mass mortalities and migrations of fish, mammals, and sea-birds. For example, an El Niño event, combined with over-fishing, resulted in the dramatic collapse of the anchovy fisheries in 1972-1973 in Peru. Landings fell from a record high of 13 million tons in 1970 to under 2 million in 1972-1973, with partial recovery only a full decade later. In addition to increasingly frequent ENSO events, there are also long-term regime shifts, associated with climate variability. The diminished resilience of fish stocks and other species limits their ability to respond to existing and emerging threats.

In addition to the effects of high catch levels of some species, biodiversity is also being threatened by certain fishing practices which include bottom trawling scouring the sea bed, longlines, and use of dynamite by artisanal fisheries. Bycatch levels are undetermined as they are not monitored. However, anecdotal information and a few limited studies indicate that in some localities impacts can be high, affecting up to 20% of certain populations, such as the Humboldt penguin. Overall, projected increases in the frequency of ENSO events, together with growing anthropogenic pressures, signal an ecosystem under increasing stress.

In both Chile and Peru there are few refuges from these pressures, with few fish spawning and juvenile grow-out areas under protection. The Protected Area systems in both countries have been heavily skewed to terrestrial areas. In Chile, recent progress has been made with GEF support to set up coastal and near shore MPAs and strengthen links with artisanal fisheries.

Without a functional and effective regional management framework, countries will continue to manage their fisheries based on uni-species information, without an understanding of requirements for maintenance of ecosystem integrity and resilience such that trophic relations will be ignored, leading to the possible collapse of certain species. Given the high variability of the system, and the increasing anthropogenic multi-sectoral stresses that impact on it, there is a need to provide for decision-making processes based on integrated information that takes into account ecosystem dynamics and processes. Similarly, both countries require support in order to harmonize and coordinate management approaches for resource use and spatial planning and for building national capacities at the systemic level to achieve conservation targets over the longterm. The value of networks of marine protected areas is recognized globally, and in the case of HCLME common or harmonized management approaches and operational norms need to be defined in order to advance towards this goal. Without GEF support to overcome these and other barriers that impede the creation and operations of MPA, globally significant biodiversity will remain unprotected. Moreover, given the predominance of fisheries in both countries, multisectoral approaches are required that effectively mainstream BD considerations. Global benefits will be demonstrated through more stable fish stocks, increased regional co-operation, and enhanced protection for biodiversity of global significance. In addition, HCLME constitutes a natural laboratory that offers unique opportunities for understanding ENSO and climate change impacts at a global level and the project will strengthen understanding of system variability Project implementation will also enhance (temporal, spatial and biological production). understanding and strengthen tools for developing appropriate management responses to increasingly frequent ENSO events, their impacts on abundance and distribution of fish stocks, the resulting challenges for fisheries and biodiversity conservation management and the negative social, economic and human health consequences.

# 11.4 EXCERPT FROM PROJECT DOCUMENT 17 May 2009



# 12. INDONESIAN SEA LME

# 12.1 BACKGROUND

#### Project status

The UNEP/GEF Project Entitled "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand" is funded by the Global Environment Facility (GEF) and implemented by the United Nations Environment Programme (UNEP) in partnership with seven riparian states bordering the South China Sea (Cambodia, China, Indonesia, Malaysia, Philippines, Thailand, and Vietnam). Planning commenced in 1996 and the project became fully operational in February 2002 and the final report was given in February 2009.

#### Indonesian Sea Project, NOAA Action Statement.

In the Indonesian Sea Project, the present level of GEF support is limited to the Indonesian government. During two recent discussions with Indonesian officials, it was made clear that they are interested in a second phase of the South China Sea project supported by the GEF. This action should be corrected for GEF V replenishment in 2010.

# 12.2.1 GEF PROJECT ID 885 DETAILS

| South China                 | Sea and Gulf of Thailand   |
|-----------------------------|--|
| GEF Project ID              | 885  |
| Funding Source              | GEF Trust Fund   |
| Project Name                | Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand   |
| Country                     | Regional (China, Indonesia, Cambodia, Malaysia, Philippines, Thailand, Vietnam)  |
| Region                      | Regional   |
| Focal Area                  | International Waters   |
| Operational<br>Program      | 8  |
| Pipeline Entry<br>Date      | December 19, 1996  |
| PDF-B Approval<br>Date      | December 19, 1996  |
| Approval Date               | November 01, 2000  |
| CEO Endorsement<br>Date     | December 12, 2001  |
| GEF Agency<br>Approval Date | January 22, 2002   |
| Project Status              | Under Implementation   |
| GEF Agency                  | UNEP - United Nations Environment Programme  |
| Executing Agency            | Secretariat for the action plan for Seas of East Asia (EAS/RCU); South China Sea Informal Working Group FAO; IOC-WESTPAC; Wetlands International Asia Pacific SACRS; SWOL; Ministries of Environment in each Country |

# Table 12.1 Regional - Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand
# 12. Indonesian Sea LME

| Description | The overall goal of the Project is to foster and encourage, at a regional level, collaboration    |
|-------------|---|
|             | and partnership in addressing transboundary environmental problems of the South China             |
|             | Sea between all stakeholders and at all levels. The Project also seeks to enhance the             |
|             | capacity of the participating governments to integrate environmental considerations into          |
|             | national development planning. In the medium term, the objective of the project is to             |
|             | facilitate an agreement on specific targeted and costed actions for the longer term to            |
|             | address the priority transboundary issues and meet the targets which emerged from the             |
|             | diagnostic study, and the framework program of actions completed during the PDF-B                 |
|             | phase. The priorities that will be addressed are wide ranging in both context and proposed        |
|             | areas of action: (i) habitat conversion and loss: (ii) over-exploitation of fisheries: (iii) land |
|             | based pollution: (iv) regional co-operation. Stress is placed on co-ordination of actions by      |
|             | diverse organisations, agencies, NGOs, private sector, government entities both at the            |
|             | national and regional levels.   |

Implementation Status Among other achievements during FY07 the revised SAP (draft 3) has been finalised by the PCU with additional inputs from the regional working groups and task forces between March to July 2007. The Regional Task Force on Economic Valuation finalised economic valuation of coastal habitats for inclusion in the revised SAP. A proposed framework for regional cooperation in marine environment in the South China Sea has developed by the Regional Task Force on Legal Matters. Two joint meetings of management teams of transboundary demonstration sites support bilateral cooperation between Cambodia-Vietnam and Cambodia-Thailand in environment management in the transboundary waters.

PDF B Amount 335,000 US\$ GEF Project Grant 16,414,001 US\$ GEF Grant 16,749,001 US\$ Cofinancing Total 16,399,000 US\$ Project Cost 33,148,000 US\$ GEF Agency Fees 587,000 US\$ GEF Project Grant 16,414,001 US\$ Cofinancing Total 17,640,830 US\$ (CEO Endo.) Project Cost (CEO 34,389,830 US\$ Endo.) **GEF Agency Fees** (CEO Endo.) **Project Documents** Project Appraisal Document (CEO Endorsement - Rev) Project Document for WP

# 12.2.2 GEF PROJECT DETAILS, GEF PROJECT ID 3188

#### Table 12.2 Indonesian Sea Component of South China Sea (SCS) Project 885

Indonesia - Demonstration of Community-based Mgt of Seagrass Habitats in Trikora Beach East Bintan, Riau Archipelago Province, Indonesia

| GEF Project ID | 3188   |
|----------------|--|
| Funding Source | GEF Trust Fund   |
| Project Name   | Demonstration of Community-based Mgt of Seagrass Habitats in Trikora Beach East Bintan, Riau Archipelago Province, Indonesia |

Part I

| Country                  | Indonesia   |  |  |
|--------------------------|---|--|--|
| Region                   | Asia and the Pacific  |  |  |
| Focal Area               | International Waters  |  |  |
| Operational Program      | 8   |  |  |
| Strategic Program        | IW-2  |  |  |
| Pipeline Entry Date      | December 18, 2006   |  |  |
| Approval Date            | June 26, 2007   |  |  |
| GEF Agency Approval Date | October 04, 2007  |  |  |
| Project Status           | Under Implementation  |  |  |
| GEF Agency               | UNEP - United Nations Environment Programme   |  |  |
| Executing Agency         | Research Center for Oceanography (LIPI), Indoensian Institute of Sciences   |  |  |
| Description              | The proposed project is one of the demonstration projects developed under the framework of the UNEP/GEF project entitled: "Reversing Environmental Degradation in the South China Sea and Gulf of Thailand". More specifically this project aims to establish an integrated management system for a total of 1,500 ha of the coastal and marine environment including seagrass and associated habitats, through ensuring a cross-sectoral and participatory approach to addressing the threats, and the root-causes of current and future habitat degradation. Through such an approach, this demonstration project aims at achieving the following: Ecosystem benefits: protection of seagrass and associated ecosystems; Benefits for fishes of and other marine animals of transboundary significance: conservation of spawning and nursery ground function for fishes and other marine animals of transboundary importance; and local benefits such as improved livelihood of the local population. |  |  |
| Implementation Status    | Project in appraisal.   |  |  |
| GEF Project Grant        | 397,800 US\$  |  |  |
| GEF Grant                | 397,800 US\$  |  |  |
| Cofinancing Total        | 391,950 US\$  |  |  |
| Project Cost             | 789,750 US\$  |  |  |
| GEF Agency Fees          | 35,802 US\$   |  |  |
|                          | Project Documents   |  |  |
|                          | President Descurrent for QEO Announce (Descine of)  |  |  |

Project Document for CEO Approval (Revised)

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# 12.3 CONTACTS, SEAGRASS DEMONSTRATION INDONESIA

#### Site Name and Geographic Coordinates

### East Bintan Seagrass Demonstration Site—

The East Bintan Project Proposal is nearing completion. At UNEPSCS.org a complete overview of activities at the East Bintan Seagrass Habitat Demonstration Site is available. Contact the following demonstration site contacts in Indonesia for further information.

#### <u>Manager</u>

#### Mr. Supriyono, Head

Infrastructure and Natural Resources Division Regional Development Planning Agency of Bintan Bappeda Kabupaten Bintan JI. Ahmad Yari km 5, Tanjungpinang, Indonesia Mobile: (62) 812 7741693 Tel: (62 771) 29647 (updated 31 may 2006) Fax: (62 771) 29646 (updated 31 May 2006) E-mail: <u>mas\_prie@telkom.net</u> Local Government Official

#### Mr. Mastur Taher, Vice-Mayor Bintan District Gedung Mulang Linggi Jl. Mess Alumina, Kijang - Bintan Indonesia Tel: (62 771) 29647 Fax: (62 771) 29646 Mobile: (62) 811694222

#### Focal Point for the Seagrass Component in Indonesia

#### Mr. Tri Edi Kuriandewa

Puslit OSEANOGRAFI, LIPI Pasir Patih 1 Ancol Timur Jakarta, Indonesia Tel: (62 21) 64713 850 Mobile: (62) 8888125927 Home: (62 251) 378 817 Fax: (62 21) 6471 1948 E-mail: indo-seagrass@centrin.net.id **Fisheries Threats Contact** 

#### Ir. Parlin Tambunan

Director of Fishery Resources, DGF Capture Jln. Harsono RM No.3 Gd. B, Lt VI Ragunan - Pasar Minggu Jakarta Selatan, Indonesia Tel: (62 21) 781 1672 Mobile: (62) 81 698 1032 Fax: (62 21) 781 1672 **E-mail.** <u>dfrmdgf@indosat.net.id</u>

# **12.4 PROJECT DOCUMENT EXCERPTS**

# 12.4.1 Excerpt from the Terminal Report, UNEP-GEF SCS project, February 2009-- Achievements list, 2009, p.28-30.

#### Achievements of the Demonstration Sites and Pilot Activities

The Third MRT (2007) also discussed the key achievements of the demonstration sites and pilot activities, which were recognised as follows:

# Achievement 1: Establishment and operation of a regional network to ensure information and experience exchange in the region.

The importance of the Mayor's Round Tables and the regional Scientific Conferences in networking and exchange of experiences cannot be under-estimated, whilst it is possible to achieve a great deal through electronic means, face to face contact strengthens personal relationships ensuring more effective exchange through electronic fora. During each of the Mayor's Round Tables the outcomes and experiences of each site were shared and the lengthy periods of plenary discussion resulted in an in-depth evaluation of the successes and failures. By bringing the heads of the Management Boards (Mayor's, Deputy Mayor's and Provincial Governors) into contact with the operational site managers for an extended period of several days provided the opportunity for close interaction and provided the political decision makers with an opportunity to learn from each other and from the operational level individuals.

# Achievement 2: Establishment of Effective Mechanisms for Local Coordination of Planning and Management of the Environment and Natural Resources.

Each demonstration site was required to establish a cross-sectorial management board composed of representatives from all agencies concerned with maritime affairs in each location. For many local Governments this was a novel way of managing projects and it was widely agreed that the approach had been highly successful resulting in additional leveraging of funds and actions from individual departments and stakeholders that were not originally envisaged. This structure has been adopted by the Beihai Municipal Government amongst others as the standard management arrangement for future project related interventions in the coastal zone, in all cases the Management Board continues to oversee the implementation of the management plans developed through the project.

# Achievement 3: Capacity building for long term management of coastal resources and environment

A series of training courses funded by the demonstration site and pilot projects have supported strong improvement of human capacity in managing habitats and related resources at the site level. The topics of training have depended on demands from local people, and have included: project management (Peam Krasop), mangrove and silvofisheries management (Batu Ampar), and ecological monitoring (Hepu, Kampot, Phu Quoc).

A number of projects have supported local people in managing their resources by providing facilities and equipment for enforcement (Belitung, Masinloc, Bolinao) and coral restoration (Koh Chang, Phu Quoc). It is important to note that the activities under some demonstration site projects have enabled mobilization (leveraging) of additional funds from other sources for management (Koh Chang, Fangchengang, Phu Quoc, Hepu).

# Achievement 4: Provision of sound scientific information and data as baselines for habitat and resource management

Weak scientific information for development of management plans and sustainable management is a characteristic of many areas in the region. In the framework of the South China Sea project, most demonstration sites have conducted assessments to provide information and data required for management at the site level. Phu Quoc, Kampot, Batu Ampar, Peam Krasop projects conducted surveys on biodiversity, resources and resource uses. The Koh Chang project focussed on assessment of carrying capacity for tourism and the outcome from these studies is being used as the basis for tourism development on the island. Economic valuation has been done in Fangchengang, Hepu, Trat, East Bintan, Kampot, and Phu Quoc. GIS data bases have been developed based on available data and information at the sites as a tool for improvement of management (Batu Ampar, Trat, Phu Quoc). A number of projects (Ninh Hai, Kampot, Phu Quoc, Bolinao) have applied remote sensing techniques for habitat assessment.

# Achievement 5: Planning for long term, multi-sectorial coordination and management for multiple use of resources

Through the development of management plans at the site level, most demonstration sites have achieved outcomes related to long-term management of habitats and related resources. Wide involvement of related stakeholders and local communities in the process, and the mechanisms for implementing these management plans ensure multi-sectorial coordination during project execution and suggest that this will continue beyond the project life. Implementation of management plans with involvement of stakeholders and local communities have been applied at a number of sites (Mooring buoy setting in Koh Chang, volunteer groups for coral reef and turtle conservation in Ninh Hai, mangrove urban park with participation of private sector in Fangchengang). Recently, some plans have demonstrated effectiveness as in the case of Koh Chang and Phu Quoc where

authorities planning tourism development have incorporated outputs from the demonstration site activities to ensure sustainable development. Demonstration site activities have been integrated into managing production forest for sustainable use in Batu Ampar and for development of the Mangrove Urban Park in Fangchengang.

#### <u>Achievement 6: Promotion of knowledge and awareness for consensus and</u> support to sustainable management practices

The demonstration site and pilot projects have produced an enormous volume of materials for public awareness and education. Posters, leaflets, CD-ROMs, and newsletters have been distributed to local government agencies and local communities to enhance their awareness on habitat importance and sustainable development.

Some demonstration site projects have created initiatives for the promotion of knowledge and awareness, such as awareness programmes for school children (Trat, Belitung, Fangchenggang, Hepu); education campaign (Bolinao); and the development of primary school curricula on coral reef ecology (Belitung). In the latter case the education authority is planning to publish further copies of the materials developed and to introduce this into other schools outside the immediate area of the demonstration site. In addition, public information centres have been constructed in Fangchengang, Batu Ampar, and Hepu with co-financing provided from the provincial governments concerned. Monitoring of public awareness carried out in some localities has indicated that the knowledge and awareness related to habitat management and sustainable development of government officials and local communities has increased (Hepu has quantified this improvement).

# Achievement 7: Support for supplementary or alternative livelihoods of local communities

Given that poverty is a critical root cause of habitat degradation and over exploitation of living resources, support for the identification and development of supplementary or alternative livelihoods has been considered by some demonstration site projects. Initiatives include:

• training for charcoal production from coconut shells rather than mangrove timber, in Batu Ampar;

• Improvement in quality and marketing of traditional "danggit" (fermented small rabbitfish) to provide enhanced income to local people in Bolinao;

• Improvement in quality, packaging and marketing of "fish" crackers at Belitung;

• Support for aquaculture of "new" living resources: soft-shell crab in Batu Ampar; sea cucumber in Masinloc;

• Creation of opportunities for local people to be involved in tourism: home stay for 2000 – 3000 visitors in Trat; local guide centre in Koh Chang;

• Eco-farming trials in the Urban Mangrove Park in Fangchengang, which represents the first urban mangrove park, globally; and,

• Production of compost for sale, from domestic organic waste in Batam.

#### <u>Achievement 8: Encouraged transboundary management of resources and</u> environment between Kampot – Phu Quoc and Trat – Peam Krasop

The management teams of the two transboundary demonstration sites have developed institutional arrangements for long term cooperation between local governments and communities across the provincial and national boundaries. Joint policies for management of habitats and resources in the transboundary waters have been developed and will be adopted by provincial leaders. A Joint GIS database has been established between Phu Quoc and Kampot to support managers of both sites in managing their habitats and related resources. Capacity building have been emphasised in joint activities of partners between Cambodia – Thailand and Cambodia – Vietnam. Training courses on assessment and monitoring and training by working together assist to improve human capacity of local people in long-term environmental management. In March 2008 a formal agreement was signed between the Deputy Governor of Kampot Province, Cambodia and the Vice-Chair of the Provincial People's Committee of Kien Giang Province in Viet Nam involving a long-term programme of joint action in managing the marine resources of the area.

Achievement 9: Rehabilitation and initial improvement of habitat state

Mangrove rehabilitation has been conducted at all mangrove demonstration sites, including Trat, Peam Krasop, Batu Ampar, and Fangchengang. Nursery gardens built under the project at Fangchenggang will be maintained for long term rehabilitation inside and outside the demonstration sites. The endangered species *Heritiera litoralis* population is being rehabilitated in Fangchengang where non-mangrove beach vegetation is also being propagated. Transplantation of corals has been practiced in Koh Chang and Phu Quoc with positive results. Rehabilitation and efforts in management during the 3 years could contribute to an initial improvement in habitat state at a number of demonstration sites bordering the South China Sea and Gulf of Thailand.

Achievement 10: Promotion of linkages between fisheries and habitat management It should be noted that sectorial approaches to management are the dominant mode of operation in the region. Recognising the ecological inter-connectivity between fish life cycle and habitats, and the need for linkages between fisheries and habitat management, the Regional Working Group on Fisheries has developed regional fisheries *refugia*, using *inter alia* inputs from the demonstration sites. A pilot fisheries *refugia* has been established in Phu Quoc with collaboration between the demonstration site management team, Vietnam Focal Point for Fisheries, and local government, with the assistance of the staff of the PCU.

# Achievement 11: Pilot activities to reduce waste discharge to the marine environment

The Batam pilot activity has tested approaches in which the industrial sector has participated actively in managing heavy metals and local communities have been involved in managing domestic waste (both sewage and solid wastes). Composting of organic wastes in the coastal village has resulted in a marketable product that has increased local incomes. The Shantou demonstration site has conducted trials of three species of mangroves for the treatment of effluent from intensive aquaculture.

The lessons learned and examples of best practice in habitat management presented during the Third MRT were synthesised by the PCU and subsequently presented by the Mayor of Bolinao, Mr. Alfonso del Fierro Celeste as important lessons learned and worthy of replication at other sites in the South China Sea and Gulf of Thailand. The outcomes of the demonstration site activities have been summarised in a series of regional brochures covering the lessons learned from 8 demonstration sites and the pilot activity in Land-based Pollution at Batam (UNEP, 2008e; 2008h; 2008i; 2008i; 2008n; 2008o).

A number of the innovative activities have involved the development of supporting mechanisms thus the development of charcoal from coconut shell in Batu Ampar to serve as a fuel source for cooking and as a source of cash income hence reducing the use of mangrove wood for these purposes involved the introduction of appropriate small scale kilns, and the introduction of fuel efficient stoves.

The direct involvement of Provincial, Municipal and local government units at the site level was beneficial not only in leveraging co-financing for demonstration site activities and fostering sustainability in the long term but, more critically, in establishing working relationships with local communities. In Beihai for example the project encouraged the formation of a Management Board with participation of local community leaders that was successful in addressing illegal aquaculture activities through direct action and in fostering additional in-kind support for specific activities not originally envisaged in the operational project document. As noted above the success of this management model has resulted in the Beihai Municipal Government adopting it as a model for the management of other development projects in the area.

12.4.2 Outputs listed in the Terminal Report of February 2009 (p.19) for the Habitat Component of the SCS project

# 12. Indonesian Sea LME

The original outcome of the preparatory phase of this component was anticipated as being nine regional priority demonstration sites, three each focusing on mangroves, seagrass and coral reefs. The following were actual outputs and outcomes:

- Regionally prioritised listings of sites for management intervention as follows
- 26 mangrove sites
- 43 coral reef sites
- 26 seagrass sites, and
- 40 wetlands sites (15 estuaries, 12 inter-tidal mudflats, 7 coastal lagoons, and 6 swamp forest sites)
- Draft proposals for intervention in 23 sites across all habitats types
- A regional GIS database having an extensive number of sites characterised in geographical and environmental, including biological, terms
- 11 Operational demonstration sites funded from the project grant (Cambodia, Peam Krasop & Kampot; China, Hepu and Fangchenggang; Indonesia, Belitung & Batu Ampar; Philippines, Masinloc and Bolinau; Thailand, Mu Koh Chang & Trat; Viet Nam, Phu Quoc);
- 7 medium sized project proposals of which three were operational by the time of project closure
- An inter-governmentally agreed procedure for determining regional priority which can be used to rank sites either nationally or regionally in the future (note: the regional Priority is not based solely on national priorities but includes national priority as one indicator of significance).
- Application of the approach at the national level in two countries to determine national priorities for intervention;
- Decisions taken in an amicable manner through consensus among all participating countries; and,
- A procedure and process that serves as a potential model for replication elsewhere when choices between alternative sites for intervention must be made based on financial limitations;

Additional outputs under this component during the preparatory phase included:

- National reports on the status of the habitats in each country
- National reviews of past and on-going projects of relevance to the project;
- National reviews of the relevant national legislation
- Creation of national meta-databases and a regional internet accessible metadatabase
- National compilations of data concerning the economic values of goods and services provided by coastal habitats.

# 12.4.3 Excerpt from the new Project, GEFSEC ID 3522 [UNDP 3879] entitled "Arafura and Timor Seas Ecosystem Action Program (ATSEA)"

The project involves Indonesia and Timor Leste (plus Papua New Guinea to be invited) with support from Australia. UNDP is the Implementing Agency for the project which is under the **Coral Triangle Initiative (CTI)**. The project has Agency approval as of September 2009 and is expected to begin implementation in October 2009. The following brief description of the project is taken from the UNDP Project Document.

The tropical and semi-enclosed Arafura and Timor Seas (ATS) are shared by Australia, Indonesia, Timor-Leste and Papua New Guinea (PNG). The ATS region is extremely rich in living and non-living marine resources, including major fisheries and oil and gas reserves. The ATS region is located at the intersection of the two major Large Marine Ecosystems (LMEs), the Indonesian Seas to the north and northern Australian waters to the south, and is also an

integral part of the Coral Triangle zone considered to have the highest marine biodiversity in the world. The ATS region exhibits high productivity that sustains both small- and large-scale fisheries that provide livelihoods for millions of people in the region.

The gross-annual production from commercial, artisanal and subsistence fisheries in the ATS region is very difficult to estimate, given existing gaps in data collection and analysis and the extremely high level of illegal, unregulated and unreported (IUU) fishing in the region, involving small and large fleets from several countries to the north of Indonesia. While a major threat is foreign fishing there is also a substantial amount of Indonesian unregulated activity in Indonesian and Australian waters. In addition to unsustainable and IUU fishing, Arafura and Timor Seas face significant threats from a number of other pressures including the potential for increased incidence of natural threats associated with climate change as well as rapidly expanding coastal populations, increasing urbanization, high levels of poverty and limited economic opportunities which can increase exploitative pressures on natural resources, degradation of coastal habitats, marine pollution from both land- and sea-based sources, and aquatic invasive species.

The threats facing the ATS region are transboundary in nature and can only be effectively addressed through multi-lateral cooperation between all four littoral nations. The rationale for the GEF Full Scale Project (FSP) is therefore the need for the littoral nations to work cooperatively to sustain the ATS shared living resources, conserve the biota of the seas and coasts, and improve sustainable socio-economic conditions and opportunities for coastal peoples. It is also based on the need for international assistance and catalytic financing, recognizing the significant development challenges and resource limitations facing Timor Leste, which is classified as both a Least Developed Country (LDC) and a Small Island Developing State (SIDS), as well as those facing Indonesia and additionally PNG, which is also designated as a SIDS.

Through the GEF intervention, including the undertaking of a Trans-Boundary Diagnostic Analysis (TDA), development of a Strategic Action Programme (SAP), and implementation of innovative demonstration projects, the littoral nations will be greatly assisted to collaboratively understand and address the shared waters problems that cannot be solved by any one country on its own.

# **13. MEDITERRANEAN SEA LME**

### 13.1 BACKGROUND

www.unepmap.org/medsp )

### **Project status**

www.medsp.org/

The Regional Component of the GEF Project "Strategic Partnership for the Mediterranean Large Marine Ecosystem" has been approved by the GEF Council in June 2007. Note that the Investment Fund/Partnership funding details appear in Part II, of this document, while three 'MED' projects are here.

## 13.2 PROJECT DETAILS, MEDITERRANEAN SEA LME

#### Table 13.1 GEF Project 3974 Details

# Tunisia - MED Greater Tunis Treated Wastewater Discharge in the Mediterranean Sea.

| GEF Project ID         | 3974   |
|------------------------|--|
| Funding Source         | GEF Trust Fund   |
| Project Name           | MED Greater Tunis Treated Wastewater Discharge in the Mediterranean Sea.   |
| Country                | Tunisia  |
| Region                 | Africa   |
| Focal Area             | International Waters   |
| Operational<br>Program |  |
| Strategic Program      | IW-2   |
| PIF Approval Date      | May 06, 2009   |
| Approval Date          | June 24, 2009  |
| Project Status         | Council Approved   |
| GEF Agency             | IBRD - The World Bank  |
| Executing Agency       | Ministère de l'Environnement et du Développement Durable (MEDD); Office National de<br>l'Assainissement (ONAS); Direction Générale de l'Environnement et de la Qualité de la Vie<br>(MEDD/DGEQV); Agence Nationale de Protection de l'Environnement (ANPE); Ministère de<br>l'Agriculture et des Ressources Hydrauliques (MARH); Ministère du Domaine de l'Etat et des<br>Affaires Foncières   |
| Description            | Project Objective: The overall objective of the project is to support the implementation of the Strategic Action Program against the Pollution of the Mediterranean Sea through pollution reduction from greater Tunis in the Bay of Tunis, an environmentally sensitive area, and improved treated wastewater discharge mechanism in the Mediterranean Sea. The projet will also contribute to optimise the use of water resources and raise awareness on Climate Change adaptation by promoting wastewater reuse, building on the investments made through the proposed project, in a second phase. The Project specific objectives include: + Reduction of wastewater discharges in the El Khalij channel and later in the Bay of Tunis; + Improvement of water quality in the Bay of Tunis; + Contribute to biodiversity conservation though the protection of the ecosystem of the Bay of Tunis, ; + Promotion of wastewater reuse in agriculture and other uses. |

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| Implementation<br>Status           |                      |  |
|------------------------------------|----------------------|--|
| GEF Project Grant                  | 8,000,000 US\$       |  |
| GEF Grant                          | 8,000,000 US\$       |  |
| Cofinancing Total                  | 547,000,000 US\$     |  |
| Project Cost                       | 555,000,000 US\$     |  |
| GEF Agency Fees                    | 3 800,000 US\$       |  |
|                                    | Project Documents    |  |
| Endorsement Letter from Government |                      |  |
| Endorsement Letter from Government |                      |  |
| PIF Document for WPI (Revised)     |                      |  |
|                                    | STAP Review 05-20-09 |  |

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### Table 13.2 GEF Project 3977 Details

# Regional - MED Mediterranean Environmental Sustainable Development Program "Sustainable MED"

| GEF Project ID        | 3977   |
|-----------------------|--|
| Funding Source        | GEF Trust Fund   |
| Project Name          | MED Mediterranean Environmental Sustainable Development Program "Sustainable MED"  |
| Country               | Regional (Albania, Bosnia-Herzegovina, Bulgaria, Algeria, Egypt, Lebanon, Libya, Morocco,<br>Macedonia, Serbia and Montenegro) |
| Region                | Regional   |
| Focal Area            | International Waters   |
| Operational Program   |  |
| Strategic Program     | IW-1; IW-2; IW-3   |
| PIF Approval Date     | May 06, 2009   |
| Approval Date         | June 24, 2009  |
| Project Status        | Council Endorsed   |
| GEF Agency            | IBRD - The World Bank  |
| Executing Agency      | UNEP   |
| Description           |  |
| Implementation Status |  |
| Cofinancing Total     | 0 US\$   |
| Project Cost          | 0 US\$   |
| GEF Agency Fees       |  |

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# Table 13.3 GEF Project 3990 Details

# Regional - MED Integration of Climatic Variability and Change into National Strategies to implement the ICZM Protocol in the Mediterranean

| GEF Project ID           | 3990  |  |
|--------------------------|---|--|
| Funding Source           | GEF Trust Fund  |  |
| Project Name             | MED Integration of Climatic Variability and Change into National Strategies to implement the ICZM Protocol in the Mediterranean   |  |
| Country                  | Regional (Albania, Bosnia-Herzegovina, Algeria, Egypt, Lebanon, Libya, Morocco, Montenegro, Syria, Tunisia)   |  |
| Region                   | Regional  |  |
| Focal Area               | International Waters  |  |
| Operational<br>Program   |   |  |
| Strategic<br>Program     | IW-1; IW-3  |  |
| PIF Approval<br>Date     | September 14, 2009  |  |
| PPG Approval<br>Date     | February 03, 2010   |  |
| Approval Date            | November 12, 2009   |  |
| Project Status           | Council Approved  |  |
| GEF Agency               | UNEP - United Nations Environment Programme   |  |
| Executing<br>Agency      | UNEP Coordinating Unit For The Mediterranean Action Plan (UNEP/MAP), MAP's Programme For The Assessment And Control Of Pollution In The Mediterranean Region (MEDPOL), MAP's Regional Activity Centers (Racs): Priority Actions Programme (PAP/RAC) And Blue Plan (BP/RAC); And Global Water Partnership - Mediterranean (GWP-Med). |  |
| Description              | Project Objective: Support to the implementation of the Barcelona Convention ICZM Protocol through the development of region wide coordination mechanisms and tools to address climate variability in the Mediterranean Region.   |  |
| Implementation<br>Status |   |  |
| PPG Amount               | 156,000 US\$  |  |
| GEF Project<br>Grant     | 2,298,545 US\$  |  |
| GEF Grant                | 2,454,545 US\$  |  |
| Cofinancing Total        | 7,000,000 US\$  |  |
| Project Cost             | 9,454,545 US\$  |  |
| GEF Agency Fees          | Fees 229,855 US\$   |  |
|                          | Project Documents   |  |
|                          | Endorsement Letter from Government  |  |
|                          |   |  |

PIF Document for WPI (Revised)

PPG Document (Revised)

# Part I

Endorsement Letter from Government

STAP Review

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## 13.3 Contacts

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# 13.4 EXCERPT FROM PROJECT DOCUMENT 3977

### Table 13.4 Expected cost benefits (from the PIF of project 3977)

The project costs are expected to generate the following benefits :

+ Keeping 100 million cubic meters in the fresh water cycle, thereby avoiding the loss associated to discharging it in the Sea;

+ Reuse of this amount of water by farmers in southern arid areas of the country, generating positive benefits through increased security of agricultural production, increase yields and reduced use of fertilizers for irrigating farmers;

+ Reduce the pressure on Mornag and Grombalia aquifers;

+ Reduce the principal source of point pollution of the Gulf of Tunis, therefore improving the water quality and reducing occurences of eutrophic alguae blooms, with positive impacts on tourism and associated economic development;

+ Reduce the threat on the coastal ecosystem in the Gulf of Tunis, caused by accumulated fresh water and limited mixing with sea water, with positive benefits in terms of biodiversity and ecosystem conservation in the sensitive ecosystem in the Gulf of Tunis;

+ The proposed Project will provide required infrastructure and generate knowledge to help Tunisia and its agriculture sector adapt against the impacts of climate change. These benefits are expected to outweigh the costs associated to the Project. A cost benefit analysis will be carried out during Project preparation.

# 14. PATAGONIAN SHELF LME

## 14.1 BACKGROUND

There are several projects underway in Argentina and in Uruguay that are focused on coastal zone management, watershed land pollution or on biodiversity. The two projects listed involve both countries, are International Waters focal area projects, and are currently under implementation. The Scientific and Technical screening of the PIF for GEF project ID 3519, dated 11 March 2008, 'Consented' "because it is well founded on the TDA and is clearly needed since the bilateral and cross-sectoral dimensions for implementing the SAP and NAPs are not assured without further support." The STAP review also mentioned that "experience in other large estuaries shows that once point source pollution is more strongly controlled, the large and more difficult to control nonpoint sources (agriculture, urban run-off, atmospheric) are revealed. Concerned that the project appeared to focus on information in the estuary itself, the reviewers counseled that "more upstream monitoring of all sources may be required to ensure that at-source measures are more effectively targeted."

#### Table 14.1 GEF Project ID 613 Details

# Regional - Environmental Protection of the Rio de la Plata and Its Maritime Front: Pollution Prevention and Control and Habitat Restoration

| GEF Project ID           | 613  |
|--------------------------|--|
| UNDP PMIS ID             | 585  |
| Funding Source           | GEF Trust Fund   |
| Project Name             | Environmental Protection of the Rio de la Plata and Its Maritime Front: Pollution Prevention and Control and Habitat Restoration |
| Country                  | Regional (Argentina, Uruguay)  |
| Region                   | Latin America and Caribbean  |
| Focal Area               | International Waters   |
| Operational Program      | 8  |
| PDF-B Approval Date      | January 01, 1999   |
| Approval Date            | January 01, 1999   |
| CEO Endorsement Date     | October 26, 1999   |
| GEF Agency Approval Date | November 22, 1999  |

Part I



Project Document

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# Table 14.2 GEF Project ID 3519 Details

# Regional - Reducing and Preventing Land-based Pollution in the Rio de la Plata/Maritime Front through Implementation of the FrePlata Strategic Action Programme

| GEF Project ID              | 3519  |
|-----------------------------|---|
| UNDP PMIS ID                | 4055  |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Reducing and Preventing Land-based Pollution in the Rio de la Plata/Maritime Front through<br>Implementation of the FrePlata Strategic Action Programme   |
| Country                     | Regional (Argentina, Uruguay)   |
| Region                      | Latin America and Caribbean   |
| Focal Area                  | International Waters  |
| Operational Program         |   |
| Strategic Program           | IW-3  |
| PIF Approval Date           | December 17, 2007   |
| PPG Approval Date           | December 17, 2007   |
| Approval Date               | April 24, 2008  |
| CEO Endorsement<br>Date     | August 25, 2009   |
| GEF Agency Approval<br>Date | August 25, 2009   |
| Project Status              | IA Approved   |
| GEF Agency                  | UNDP - United Nations Development Programme   |
| Executing Agency            | CARP and CTMFM in coordination with other agencies involved with the SAP  |
| Description                 | To advance towards sustainability of the uses and resources of the Rio de la<br>Plata/Maritime Front through the implementation of the Strategic Action Program (SAP)<br>with regards to reduction and prevention of land-based pollution |
| Implementation<br>Status    |   |
| PPG Amount                  | 150,000 US\$  |
| GEF Project Grant           | 2,850,000 US\$  |
| GEF Grant                   | 3,000,000 US\$  |
| Cofinancing Total           | 15,020,000 US\$   |
| Project Cost                | 18,020,000 US\$   |
| GEF Agency Fees             | 300,000 US\$  |

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 GEF Project Grant (CEO Endo.)
 2,850,000 US\$

 Cofinancing Total (CEO Endo.)
 14,590,000 US\$

 Project Cost (CEO Endo.)
 17,590,000 US\$

 GEF Agency Fees (CEO Endo.)
 300,000 US\$

 Project Documents
 Project Documents

 PIE Document (Revised).
 PPG Document (Revised).

 STAP Review
 STAP Review.

# 14.3 CONTACTS

# A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

| Miguel Enrique Pellerano                              | Date: 11 October 2007 |
|---|-----------------------|
| Sub-secretariat for Environmental Planning and Policy |                       |
| Argentina   |                       |

| Roberto Elissalde                             | Date: 11 October 2007 |
|---|-----------------------|
| Counselor to the Minister                     |                       |
| Ministry of Housing, Land Use and Environment |                       |
| Uruguay                                       |                       |

### **B. GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

| J- Hough  | Paula Caballero<br>UNDP-GEF Regional Technical Advisor<br>Project Contact Person |
|---|--|
| John Hough<br>UNDP-GEF Deputy Executive Coordinator, a.i. |  |
| Date: 19 December 2007                                    | Tel. and Email:507 302 4571 paula.caballero@undp.org                             |

# 14.4 EXCERPT FROM PROJECT 3519 PIF DOCUMENT

## 14.4.1. Project justification

### PART II: PROJECT JUSTIFICATION

#### A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, EXPECTED GLOBAL ENVIRONMENTAL BENEFITS:

The Río de la Plata and its Maritime Front (RPMF) constitute a transitional water system whose resources are shared between the Argentine Republic and the Oriental Republic of Uruguay. At a global level it is a unique system, as one of the leading fluvial and river-marine systems in the world, connecting the Río de la Plata Basin (the second largest basin in South America and fourth largest worldwide) to the Atlantic Ocean. It is an integral part of the Patagonian Shelf Large Marine Ecosystem (LME) of the south-western continental shelf of South America, and contains globally significant biodiversity. The Río de la Plata is among the richest, most singular and endangered natural areas in the planet.

The RPMF faces considerable threats due to the extensive economic activities located in the coastal areas of both countries. In Argentina the coastal area concentrates 45% of all industrial activity and 35% of its population, while in Uruguay it contains approximately 70% of its total population and most of its economic, industrial and port activities. The waterbody is therefore a sink for substantial urban, agricultural and industrial pollution, and suffers from habitat degradation due to dredging, sedimentation and physical alteration. Despite an average flow of 22,000 mt<sup>3</sup>/sec, pollution hot spots, increasing incidents of Harmful Algal Blooms (HABs), and the emergence of potential "dead zones" signal the considerable stress that the system is under. The FREPLATA GEF project, which prepared a comprehensive Transboundary Diagnostic Analysis  $(TDA)^{1}$ , concluded that coastal land -based pollution (point and non-point) by nutrients, heavy metals, POPs and other PTS, and destruction of natural habitats are priority transboundary issues that need to be addressed as soon as possible in order to achieve human and ecosystem health objectives agreed in the SAP. The system is very dynamic and pollutants are transported by currents, vertical advection, winds, sediments and living organisms. As the TDA concluded, dynamics can rapidly transport contaminants introduced in the coastal zone to distant parts of the system.<sup>2</sup> FREPLATA confirmed that cross-sectoral, integrated approaches and commitments, based on an informed understanding of shared ecosystem management approaches, are required to address these identified priority transboundary issues. Unless addressed, the magnitude of these problems will increase over time.

The current proposal builds upon the GEF-sponsored FREPLATA program which is now nearing completion. The FREPLATA program is a bi-national initiative that has culminated in the endorsement of a Strategic Action Program (SAP) by a comprehensive range of 37 key stakeholders including 9 ministries, the navy, coast guards, provincial and local authorities, and private sector representatives. This constitutes the broadest SAP endorsement in UNDP's IW history and is a significant achievement for the GEF IW portfolio. FREPLATA is a pioneering initiative in the region and has generated a huge body of integrated information suitable for an ecosystem approach to sustainable management. It has built capacities across a range of sectors, and enhanced regional cooperation both in public and private spheres to unprecedented levels. It is noteworthy that despite current bi-national tensions, both countries overwhelmingly endorsed the SAP as evidence of their commitment to working jointly to address shared concerns.

#### HOW THE PROJECT SEEKS TO ADDRESS THE ISSUE

Currently there are calls from both governments to consolidate the considerable achievements of FREPLATA, which include a firm foundation of policy and legal reforms, detailed biogeophysical assessments, and comprehensive project portfolios including both baseline contributions and additional initiatives in support of the SAP and associated NAPs, and build upon them in order to capitalize on the

<sup>&</sup>lt;sup>1</sup> 206 technical reports were elaborated, which were integrated and summarized in the TDA Technical Document and the TDA for Decision-Makers

<sup>&</sup>lt;sup>2</sup> TDA for Decision-Makers, 4.1. Why are the problems transboundary?, p. 28

extensive political and technical bi-national and intra-national networks that have been established - as well as the significant commitment and will of both countries.

The SAP and two associated NAPs identified an impressive portfolio of projects required to effectively achieve the Common Vision of "*improvement in the standard of living of the population of the RPMF by restoring and preserving its water quality, biodiversity, and the sustainability of its uses and resources*". As evidenced in the NAPs, both are committed to providing long-term funding and multi-sectoral support, with Argentina contributing over \$1.3 billion and Uruguay \$125 million. Countries are requesting funding from the GEF to catalyze implementation of the RPMF SAP and NAPs through 5 key components:

# 14.4.2 Table of Project Framework

| Project Objec  | Project Objective: To facilitate restoration of the Rio de la Plata/Maritime Front ecosystem |   |   |                                 |    |                   |      |               |
|--|--|---|---|---------------------------------|----|-------------------|------|---------------|
|  | through regional and national governance reforms and demonstrations which                    |   |   |                                 |    |                   |      |               |
|  |  | target reduction of land  | -based pollution  |                                 |    | Indiaa            | tivo |               |
| Project<br>Components  |  | Expected Outcomes Expected Outputs F  |   | Indicative<br>GEF<br>Financing* |    | Co-<br>financing* |      | Total<br>(\$) |
|  |  |   |   | (\$)                            | %  | (\$)              | %    |               |
| 1.Implementationof agreed regionaland nationalinstitutionalreforms toaddress prioritytransboundaryland -basedpollution bynutrients, heavymetals, POPs andother PTS2. Policy andlegal frameworksstrengthened andharmonized toachieve SAPobjectives forprevention andreduction ofpollutant loadsfrom point(industrial andsewage effluents)and non-pointsources | TA   | <ul> <li>Nat'l Intersectoral Units (NIUs )<br/>for SAP implementation<br/>formalized</li> <li>Bi-national commissions<br/>strengthened</li> <li>Coordination<br/>mechanisms/partnerships with<br/>other Plata Basin Commissions<br/>established</li> <li>Municipal/provincial<br/>governments enabled to develop<br/>multi-sectoral PPP</li> <li>Strategies for adoption of<br/>harmonized bi-national<br/>environmental management<br/>tools for reduction of nutrients<br/>and PTS agreed</li> <li>Bi-national agreement on<br/>development of policy<br/>frameworks in support of<br/>Cleaner Production</li> <li>Policy frameworks in support of<br/>PPP developed</li> <li>Strategies and policies to<br/>improve treatment of urban &amp;<br/>industrial discharges<br/>strengthened</li> </ul> | <ul> <li>NIUs actively supporting resource mobilization for NAP implementation</li> <li>CARP<sup>3</sup> mandate revised</li> <li>Sustainable financial mechanisms in place to support Commissions' work</li> <li>CARP &amp; CTMFM jointly providing for enhanced ecosystembased management of project area</li> <li>Number of innovative PPP schemes negotiated by municipal/provincial governments</li> <li>Bi-national agreement and adoption of the technical protocols for EIA and SEA already developed</li> <li>Joint application of WQO methodology already developed</li> <li>C+P schemes under implementation in critical basins</li> <li>PPP supported through established policy framework</li> <li>Improved strategies and policies for discharges reflected in more targeted and effective interventions and investments in project area</li> </ul> | 0.45                            | 25 | 0.9               | 86   | 3.25          |
| 3. On-the-ground<br>demonstration<br>pilots that reduce<br>agreed priority   | TA   | - Generation of targeted<br>information related to the on-<br>the-ground activities and<br>exchange of experiences on C+P   | <ul> <li>Further characterization of main<br/>polluters characterized, update of<br/>pollution loads discharged to<br/>coastal zones and C+P</li> </ul>   | 1.05                            | 25 | 6.9               | 75   | 7.95          |

#### Table 14.3 Table of Project Framework from PIF for GEF Project ID 3519

<sup>&</sup>lt;sup>3</sup> Rio de la Plata Administrative Commission (CARP) - Bi-national Technical Commission for the Maritime Front (CTMFM)

# 14. Patagonian Shelf LME

| pollutants<br>(nutrients and/or<br>PTS)<br>implemented that<br>measurably<br>contribute to<br>improved<br>ecosystem health<br>and thereby<br>deliver global<br>benefits       |    | <ul> <li>Information Exchange Network<br/>of Rio de la Plata Governments<br/>expanded (RIIGLO)</li> <li>Capacities within the Coastal-<br/>Marine Network strengthened</li> <li>Montevideo Effluent Unit pilot<br/>replicated</li> <li>Nutrient loads in Carrasco<br/>Wetland reduced significantly in<br/>relation to defined baseline<br/>values</li> <li>Nutrient loads in Samborombón<br/>Bay Wetland reduced<br/>significantly in relation to<br/>defined baseline values</li> </ul> | disseminated to critical industrial<br>sectors<br>- Consolidation and upscaling of<br>RIIGLO including the<br>development and implementation<br>of an "early response" network for<br>HABs<br>- Capacity of the Coastal-Marine<br>Network enhanced to enable<br>application of ICZM<br>- Montevideo Effluent Unit<br>replicated by participating<br>industries in both countries<br>- Pilot projects in Carrasco and<br>Samborombón Wetlands<br>demonstrate cost-effective, multi-<br>use options for addressing<br>urban/industrial discharges such as<br>of nutrients and other PTS  |      |    |       |    |       |
|---|----|---|--|------|----|-------|----|-------|
| 4. Compelling<br>public<br>involvement in<br>SAP<br>implementation<br>through<br>communication<br>strategy and<br>improved<br>FREPLATA<br>Integrated<br>Information<br>System | TA | <ul> <li>Strengthen GIS systems as a management tool to support decision-making by stakeholder groups strengthened</li> <li>Data and info needs identified and integrated to update the TDA</li> <li>Analysis of potential climate change impacts on the RPMF and on SAP investments and objectives</li> <li>Robust Communication and Education Strategy developed that enables engaged participation by stakeholders and supports PPP and Cleaner Production (C+P) objectives</li> </ul> | <ul> <li>Broad range of stakeholders access<br/>GIS System to inform decision<br/>making and provide for informed<br/>participation.</li> <li>Updated TDA, coordinated with<br/>Patagonia Shelf LME TDA is<br/>effective policy tool widely used<br/>by decision makers in broad range<br/>of sectors</li> <li>Climate change analysis provides<br/>basis for forecasting impacts and<br/>adjusting policy decisions and<br/>proposed investments</li> <li>Fully engaged participation of<br/>stakeholders provides for robust<br/>SAP and NAPs implementation</li> <li>Updated SAP with new<br/>information, emerging issues and<br/>country commitments</li> </ul> | 0.55 | 25 | 1.68  | 75 | 2.23  |
| 5. M&E system<br>and indicators<br>developed  |    | <ul> <li>M&amp;E mechanisms, including an<br/>M&amp;E system for project, set up</li> <li>Continued development of a<br/>suite of M&amp;E P, SR and ES<br/>indicators to monitor SAP<br/>implementation</li> </ul>  | <ul> <li>M&amp;E mechanisms set up including<br/>an M&amp;E system for the project</li> <li>Suite of GEF M&amp;E indicators<br/>developed</li> </ul>   | 0.2  | 18 | 0.9   | 82 | 1.1   |
| 6. Effective<br>project<br>coordination<br>achieved   |    | -Regional Project Coordination<br>Unit established  | <ul> <li>Regional PCU effectively<br/>implements project</li> <li>SAP Coordination Committee<br/>formalized to support long-term<br/>SAP Implementation</li> <li>Portfolio-wide knowledge sharing<br/>through IW:LEARN</li> <li>Effective linkages and coordination<br/>with other relevant initiatives in<br/>adjacent LMEs and coastal areas*</li> </ul>   | 0.3  | 17 | 1.44  | 83 | 1.74  |
| Total project<br>costs  |    |   |  | 2.85 | 16 | 14.62 | 84 | 17.47 |

# 15. RED SEA LME

# **15.1 BACKGROUND**

## **Project status**

The first two of the projects presented here are now closed. The third project presented here, GEF ID 3809, is awaiting approval in 2010.

# **15.2 GEF PROJECT ID DETAILS**

#### Table 15.1 GEF Project ID 394 Details

| Yemen -                     | Protection of Marine Ecosystems of the Red Sea Coast   |
|-----------------------------|--|
| GEF Project ID              | 394  |
| UNDP PMIS ID                | 72   |
| Funding Source              | GEF Trust Fund   |
| Project Name                | Protection of Marine Ecosystems of the Red Sea Coast   |
| Country                     | Yemen  |
| Region                      | Asia and the Pacific   |
| Focal Area                  | International Waters   |
| Operational<br>Program      | 9; 9   |
| Approval Date               | May 01, 1992   |
| GEF Agency<br>Approval Date | July 02, 1997  |
| Project<br>Completion Date  | May 26, 1999   |
| Project Status              | Project Closure  |
| GEF Agency                  | UNDP - United Nations Development Programme  |
| Executing Agency            | Ministry of Fishwealth MSRC  |
| Description                 | This project aims to protect ecosystems important to fisheries and biodiversity through<br>improving knowledge and monitoring of Yemen's Red Sea resources and their use. The project<br>also incorporates a regional component which is implemented by UNEP. This component will<br>provide capacity building for PERSGA (Regional Environment Programme for the Red Sea and<br>the Gulf of Aden), based in Jeddah, Saudi Arabia. |
| Implementation<br>Status    | Received from UNDP/Yemen budget revision F.  |
| GEF Project Grant           | 2,800,000 US\$   |
| GEF Grant                   | 2,800,000 US\$   |
| Cofinancing Total           | 0 US\$   |
| Project Cost                | 2,800,000 US\$   |
| GEF Agency Fees             |  |
|                             | Project Documents  |

#### Project document

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#### Table 15.2 GEF Project ID # 340 Details

# Regional - Implementation of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden

| GEF Project ID              | 340   |
|-----------------------------|---|
| UNDP PMIS ID                | 810   |
| IBRD PO ID                  | 63717   |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Implementation of the Strategic Action Programme(SAP) for the Red Sea and Gulf of Aden  |
| Country                     | Regional (Djibouti, Egypt, Jordan, Sudan, Yemen)  |
| Region                      | Regional  |
| Focal Area                  | International Waters  |
| Operational<br>Program      | 9   |
| PDF-B Approval<br>Date      | November 01, 1997   |
| Approval Date               | November 01, 1997   |
| CEO Endorsement<br>Date     | December 10, 1998   |
| GEF Agency<br>Approval Date | February 23, 1999   |
| Project<br>Completion Date  | June 30, 2005   |
| Project Status              | Project Closure   |
| GEF Agency                  | UNDP/UNEP/IBRD  |
| Executing Agency            | Reg. Org. for Conserv. of the Env. of Red Sea/Gulf of Aden  |
| Description                 | With PDF "B" funding, the three GEF Implementing Agencies have together assisted the countries of the Red Sea and PERSGA (Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden) in the drafting of a Strategic Action Programme (SAP). The SAP, under the present full project, aims to develop and implement a regional framework for protection of the environmental and sustainable development of coastal and marine resources. This project is jointly implemented with the World Bank and UNEP. Associated projects amount to \$271 million. |

| Implementation | Navigation Risk & Maritime Pollution Component Regional Advisory Group Workshop:             |
|----------------|--|
| Status         | Contingency Planning (Jeddah, June). Action Plan agreed upon by member states. ICZM          |
|                | Component concept paper of the Regional Shared Vision and trust Building Programme;          |
|                | ·PERSGA Focal Point Retreat (Aqaba) ; ·regional workshop: 'Towards ICZM: Actions for         |
|                | balancing standards of life for coastal communities'- Amman; . Training of Trainers workshop |
|                | in Sudan on ICZM and Conflict Resolution and training kit prepared; Workshop:                |
|                | "Communication for sustainability" in Port-Sudan Produce the ICZM Regional Synthesis         |
|                | Report; ·ICZM Hand Book for the Red Sea and Gulf of Aden produced ·EELS translated into      |
|                | French; teacher training on the EELS in Djibouti; PERSGA Integrated Information              |
|                | Management System (IIMS) completed . Produce and publish: ICZM plan and profile for          |
|                | Djibouti, ICZM Plan for Yemen and ICZM Final report Regional Environmental Monitoring        |
|                | Programme (REMP) All PERSGA countries received the necessary equipment; PERSGA began         |
|                | to receive data on sea water analysis from some countries (Egypt and Jordan). PERSGA EIA     |
|                | Workshop PERSGA/ALECSO/ROWA-UNEP/ISESCO organized a regional advanced training               |
|                | course for coastal development projects (Jeddah: 7-11 May 2005)                              |

PDF B Amount 340,000 US\$

| GEF Project Grant                | 19,000,000 US\$         |                   |
|----------------------------------|-------------------------|-------------------|
| GEF Grant                        | 19,340,000 US\$         |                   |
| Cofinancing Total                | 25,650,000 US\$         |                   |
| Project Cost                     | 44,990,000 US\$         |                   |
| GEF Agency Fees                  |                         |                   |
| GEF Project Grant<br>(CEO Endo.) | 19,000,000 US\$         |                   |
| Cofinancing Total<br>(CEO Endo.) | 17,650,000 US\$         |                   |
| Project Cost (CEO<br>Endo.)      | 36,990,000 US\$         |                   |
| GEF Agency Fees<br>(CEO Endo.)   |                         |                   |
|                                  |                         | Project Documents |
|                                  | Project Document for WP |                   |
|                                  | Project Document        |                   |
|                                  | <u>PDF B</u>            |                   |

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#### Table 15.3 GEF Project Details 3809

# Regional - Red Sea and Gulf of Aden Strategic Ecosystem Management

| GEF Project ID           | 3809   |
|--------------------------|--|
| IBRD PO ID               | 113794   |
| Funding Source           | GEF Trust Fund   |
| Project Name             | Red Sea and Gulf of Aden Strategic Ecosystem Management  |
| Country                  | Regional (Djibouti, Egypt, Jordan, Saudi Arabia, Sudan, Yemen)   |
| Region                   | Regional   |
| Focal Area               | International Waters   |
| Operational<br>Program   |  |
| Strategic Program        | IW-1; IW-2   |
| PIF Approval Date        | April 26, 2010   |
| Approval Date            | Not Yet Approved   |
| Project Status           | CEO PIF Clearance  |
| GEF Agency               | IBRD - The World Bank  |
| Executing Agency         | PERSGA - The Regional Organization for the Conservation of Environment of the Red Sea and Gulf of Aden   |
| Description              | The overall objective is to conserve and promote the sustainable exploitation of the marine resources of the Red Sea and Gulf of Aden and improve the socioeconomic benefits, especially of coastal communities in the region. |
| Implementation<br>Status |  |
| GEF Project Grant        | 3,000,000 US\$   |
| GEF Grant                | 3,000,000 US\$   |
| Cofinancing Total        | 35,000,000 US\$  |
| Project Cost             | 38,000,000 US\$  |
| GEF Agency Fees          | 300,000 US\$   |
|                          | Project Documents  |
|                          | PIF Document for WPI (Revised)   |
|                          | STAP Review (PDF)  |

## 15.3 Contacts

#### Prof. Ziad Hamzah Abu-Gharrah

PERSGA – Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden PO Box 53662, Jeddah 21583 Kingdom of Saudi Arabia <u>ziad@persga.org</u> Tel: + 966 (02) 6573224 **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: See para. 24. below

Sudan: Mr. Amin Salih Yasin, Ministry of Finance and National Economy

Yemen: Mr. Mohsin Al-Hamdani, Chairman of Environment Protection Council

## 15.4 Project 340 Excerpt: Issues, Actions And Risks

1. 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.

2. While it is not feasible at present to obtain Government endorsement for the proposed activities in Somalia, 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. With respect to the GEF Instrument, Somalia is eligible under paragraph 9 b of the Instrument.

25. 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.

26. In view of the active UNDP 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

27. 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.

28. 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.

29. 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:

- (1) Institutional strengthening to facilitate regional co-operation (UNEP).
- (2) Reduction of navigation risks and maritime pollution (World Bank).
- (3) Sustainable use and management of living marine resources (UNDP).
- (4) Development of a Regional Network of Marine Protected Areas (UNDP).
- (5) Support for integrated coastal zone management (ICZM) (World Bank).
- (6) Enhancement of public awareness and participation (UNDP).
- (7) Monitoring and evaluation of programme impacts (UNDP).

#### Regional Institutions

З. Based in Jeddah, PERSGA is responsible for the development, implementation, coordination, 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

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

# 16. SULU-CELEBES LME PROJECT

# 16.1 BACKGROUND

## Present Status of the Project

under the Coral Triangle Initiative

The Request for a Project Preparation Grant (PPG) was revised and resubmitted in March 2008 with an estimated completion date of December 2008. The Scientific and Technical screening of the Project Identification Form (PIF) on 13 March 2008 consented to the project, considering it an important step towards improving the condition of fisheries and their habitats in the Sulu-Celebes Sea. The STAP encouraged UNDP to specify "how the results from the "growth" mechanism and the "control" mechanisms will be measured and monitored." More specifically, the STAP recommends "considering data collection for the adequate management monitoring of ecosystem based fisheries, and control efforts to reduce fishing in the project area." The PIF for the GEF project #3524 was Council-approved on April 24, 2008, with a projected implementation completion date of April 2013 for the Sulu-Celebes Sustainable Fisheries Management Project.

#### GEF Project ID 3524 UNDP PMIS ID 4063 **Funding Source** GEF Trust Fund Project Name CTI Sulu-Celebes Sea Sustainable Fisheries Management Project (SCS) - under the Coral Triangle Initiative Country Regional (Indonesia, Malaysia, Philippines) Region Asia and the Pacific Focal Area International Waters **Operational Program** PIF Approval Date November 16, 2007 **PPG Approval Date** March 28, 2008 April 24, 2008 Approval Date **Project Status Council Approved GEF Agency UNDP** - United Nations Development Programme UNOPS **Executing Agency** Description Implementation Status

Table 16.1 Regional - CTI Sulu-Celebes Sea Sustainable Fisheries Management Project (SCS) -

# 16.2 GEF PROJECT ID 3524 DETAILS - SULU-CELEBES SEA

# 16. Sulu Celebes LME

| PPG Amount        | 85,000 US\$            |
|-------------------|------------------------|
| GEF Project Grant | 2,890,000 US\$         |
| GEF Grant         | 2,975,000 US\$         |
| Cofinancing Total | 3,420,000 US\$         |
| Project Cost      | 6,395,000 US\$         |
| GEF Agency Fees   | 297,500 US\$           |
|                   | Project Documents      |
|                   | PIF Document           |
|                   | STAP Review            |
|                   | PPG Document (Revised) |

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# **16.3 CONTACTS INFORMATION**

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# **16.4 EXCERPTS FROM PROJECT DOCUMENTS**

# Table 16.2 Sulu Celebes LME Project GEF 3524, Sulu-Celebes Sea Sustainable Fisheries Management Project (SCS)

#### A. **PROJECT FRAMEWORK** (Expand table as necessary)

**Project Objective**: To improve the condition of fisheries and their habitats in the Sulu-Celebes Sea to a sustainable level through an integrated, collaborative and sustainable tri-national management

| Project<br>Components  | Indicate<br>whether<br>Investment, | Expected<br>Outcomes   | Expected<br>Outputs   | Indicati<br>GEF<br>Financir | ve<br>1g* | Indicat<br>finan | ive Co-<br>cing* | Total<br>(\$) |
|--|------------------------------------|--|---|-----------------------------|-----------|------------------|------------------|---------------|
| _  | TA, or STA**                       |  |   | (\$)                        | %         | (\$)             | %                |               |
| 1. Demonstration of<br>best fisheries<br>management<br>practices in critical<br>sites of the SCS | ТА                                 | Increased fish<br>stocks at pilot sites<br>(5-10% increase)                                    | Establishment of<br>two pilot sites<br>per country;<br>Per capita<br>income at demo<br>sites increased by<br>5% | 0.61 M                      | 46        | 0.71M            | 54               | 1.32M         |
| 2. Transboundary<br>Diagnostic Analysis<br>(TDA) for SC LME                                      |                                    | Regional<br>agreement on<br>transboundary<br>priorities, their<br>immediate and<br>root causes | Agreed<br>Transboundary<br>Diagnostic<br>Analysis (TDA)<br>for the SCS  | 0.75 M                      | 62        | 0.45M            | 38               | 1.20M         |

# Part I

| 3. Regional<br>agreement on<br>governance reforms<br>for sustainable<br>fisheries<br>management | ТА | Agreement on<br>regional and<br>national legal,<br>policy and<br>institutional<br>reforms for<br>improved fisheries<br>management  | Strategic Action<br>Program (SAP);<br>local integrated<br>coastal<br>management<br>(ICM) plans;<br>collaborative<br>agreements with<br>relevant regional<br>and sub-regional<br>organizations   | 0.75 M | 43 | 0.99M | 57 | 1.74M |
|---|----|--|---|--------|----|-------|----|-------|
| 4. Institutional<br>Strengthening   | ТА | Introduction of<br>institutions and<br>reforms to catalyze<br>implementation of<br>policies on<br>reducing over-<br>fishing and<br>improving<br>fisheries<br>management in the<br>SCS that will<br>benefit the SCS<br>coastal<br>communities;<br>Strengthened<br>national fisheries<br>laws and policies | Strengthened<br>Tri-National<br>Committee (Tri-<br>Com) for SCS<br>and its Sub-<br>Committee on<br>Sustainable<br>Fisheries;<br>Establishment of<br>National and<br>Local Inter-<br>ministerial and<br>inter-sectoral<br>committees for<br>effective<br>implementation<br>of the agreed<br>action programs<br>and ICM models<br>for Sulu-Celebes<br>Sea | 0.50 M | 50 | 0.50M | 50 | 1.00M |
| 4. Project<br>management  |    |  |   | 0.28 M | 27 | 0.77M | 73 | 1.05M |
| Total project costs   |    |  |   | 2.89 M | 46 | 3.42M | 54 | 6.31M |

# **17. YELLOW SEA LME**

# 17.1 BACKGROUND

#### **Present status**

In 2008, the YSLME project launched a cooperative scientific cruise (see website). A series of meetings has taken place for each of the 5 components of the project (ecosystem, fisheries, pollution, biodiversity, and investment). The First Phase of the Yellow Sea LME Project is in its final year (2009). The Second Phase Program of the YSLME (2010-2015) is beginning, with new opportunities. The Democratic People's Republic of Korea (DPRK) is planning to join the 2nd Phase Program.

# 17.2 GEF PROJECT ID 790 DETAILS

| Table 17.1 | Regional - | Reducing | Environmental | Stress i | n the | Yellow | Sea | Large | Marine |
|------------|------------|----------|---------------|----------|-------|--------|-----|-------|--------|
| Ecoystem   |            |          |               |          |       |        |     |       |        |

| GEF Project ID           | 790   |
|--------------------------|---|
| UNDP PMIS ID             | 994   |
| Funding Source           | GEF Trust Fund  |
| Project Name             | Reducing Environmental Stress in the Yellow Sea Large Marine Ecoystem   |
| Country                  | Regional (China, Republic Of Korea)   |
| Region                   | Asia and the Pacific  |
| Focal Area               | International Waters  |
| Operational Program      | 8   |
| PDF-B Approval Date      | May 01, 2000  |
| Approval Date            | May 01, 2000  |
| CEO Endorsement Date     | November 27, 2002   |
| GEF Agency Approval Date | April 12, 2004  |
| Project Status           | Under Implementation  |
| GEF Agency               | UNDP - United Nations Development Programme   |
| Executing Agency         | UNOPS   |
| Description              | The Yellow Sea is one of the most intensely exploited areas in the world. Approximately 10% of the world population lives in the area that drains to the Yellow Sea. This Sea is a semi-enclosed basin, shallow but reach in resources, and its waters are a highway for international shipping. Large cities, among them Shanghai, Dalian, Tianjin and Seoul, depend on the Yellow Sea as a source of marine resources for human nutrition, economic development, recreation and tourism. The analysis conducted during PDF-B works indicated the following major transboundary environmental problems: (i) Decline/collapse of transboundary fish stocks; (ii) degradation of Biodiversity and of critical habitats; (iii) water quality deterioration; (iv) unsanitary conditions due to dispersion of pathogens and contaminants threatening human health and mariculture. The objective of the proposed project is to promote multi-country ecosystem based management practices with the aim of reducing stresses to the environment due to population and industrialization pressures. The project will enhance consultations among littoral countries building on existing partial agreements (APEC etc.) and operationalizing elements of UNEP's Regional Seas Programme (NOWPAP). The project will complement activities of the East Asian Seas |

### Part III

|                                  | GEF project and of the Tumen River GEF projects.  |
|----------------------------------|---|
| Implementation Status            | The full project brief was approved by the May GEF Council. The project document is being finalised. UNDP is working with the countries to finalise the implementation arrangements. In December the countries agreed the Project Coordination Unit would be based in ROK. The Government of ROK is now finalizing the location of the PCU. |
| PDF B Amount                     | 349,650 US\$  |
| GEF Project Grant                | 14,394,183 US\$   |
| GEF Grant                        | 14,743,833 US\$   |
| Cofinancing Total                | 10,302,065 US\$   |
| Project Cost                     | 25,045,898 US\$   |
| GEF Agency Fees                  | 695,000 US\$  |
| GEF Project Grant (CEO<br>Endo.) | 14,394,183 US\$   |
| Cofinancing Total (CEO<br>Endo.) | 10,214,066 US\$   |
| Project Cost (CEO Endo.)         | 24,957,898 US\$   |
| GEF Agency Fees (CEO<br>Endo.)   |   |
|                                  | Project Documents   |
|                                  | Endorsement Letter from Government  |
|                                  | Endorsement Letter from Government  |
|                                  | Project Appraisal Document (for CEO Endorsement)  |
|                                  | Cover Letter from IA  |
|                                  | Project Document for WP (Part 1)  |
|                                  | Project Document for WP (Part 2)  |
|                                  | Project Document for WP (Part 3)  |
|                                  | Project Document for WP (Part 4)  |
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17.3 CONTACTS INFORMATION

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### 17.4 EXCERPTS FROM GEF PROJECT 790 DOCUMENTS

#### Table 17.2 Outline of Objectives, Components, Outputs and Activities

- Objective 1 Develop Regional Strategies for Sustainable Management of Fisheries, and Mariculture
  - A. Stock Assessment
  - B. Carrying Capacity in Fisheries and Mariculture
  - C. Mariculture Production
  - D. Disease in Mariculture
  - E. Regional Fisheries Agreements and National Laws
  - F. Fisheries Management Plan

#### Objective 2 Propose and Implement Effective Regional Initiatives for Biodiversity Protection

- A. Habitat Conservation
- B. Vulnerable Species
- C. Genetic Diversity
- D. Introduced Species
- E. Biodiversity Regulations
- Regional Biodiversity Assessment & Regional Biodiversity Action Plan
- Objective 3 Propose and Implement Actions to Reduce Stress to the Ecosystem, Improve Water
- Quality, and Protect Human Health
  - A. Stressors to Ecosystem
  - B. Carrying Capacity of Ecosystem
  - C. Contaminant Inputs
  - D. Contaminant Levels
  - E. Harmful Algal Blooms and Emerging Disease
  - F. Hot Spot Analysis
  - G. Emergency Planning and Preparedness
  - H. Legal and Regulatory
  - I. Fate and Transport Analysis to Facilitate SAP Analysis
- **Objective 4** Develop and Pilot Regional Institutional and Capacity Building Initiatives
  - A. Stakeholder Involvement
  - B. Regional Coordination
  - C. National Institutions
  - D. Financial Instruments
  - E. Data and Information Management
  - F. Public Awareness and Participation

Note: Expanded YSLME project outline in Table 15.3

# 17.4 EXCERPTS FROM THE YSLME PROJECT DOCUMENT ACTIVITIES SUMMARY, 2002

# Table 17.3 YSLME - GEF Project Document 790, Objectives, Components, Outputs and Activities

**OBJECTIVE I.** Regional Strategies for Sustainable Management of Fisheries, and Mariculture

This component will summarize knowledge of the status of fisheries stocks, including legislation and regulatory mechanisms; create common regional methodologies and database for fisheries, including pilot projects; develop regional agreements, national laws and regulations, and fisheries management plans; develop and demonstrate sustainable mechanisms for effective fisheries management. Particular attention will be given both in the analysis phase as well as in

proposals for remedial actions (legal, policy, etc.) to reflect impacts on and perspectives from both gender groups, respectively, using gender disaggregated data and statistics.

#### Outputs:

#### TDA

Summary of existing state of knowledge Identification of legislative gaps **SAP** Draft fisheries management plans Draft regional agreement for fisheries management Drafts of strengthened national fisheries laws Fisheries database Pilot projects SAP Implementation Regional agreement

#### Component IA. Stock assessment

Success Criteria: Increased baseline information and strengthened national capacity for sustainable fisheries management. Regional Stock Assessment. Sustainable use of transboundary stocks, building on sound stock assessment and region-wide monitoring. Effective mechanism for regional annual stock assessment.

| Activities:   | Responsible Parties | Associated Partners |
|---|---------------------|---------------------|
| Activity 1. Review of existing data and diagnosis of condition of stocks.   | Fisheries WG        | FAO                 |
| Activity 2. Perform demonstration of a Regional Survey.   | Fisheries WG        | FAO                 |
| Activity 3. Develop common methodology for joint regional stock assessment and perform initial joint regional stock assessment.                           | Fisheries WG        | FAO                 |
| Activity 4. Perform initial joint regional stock assessment   | Fisheries WG        | FAO                 |
| Activity 5. Create mechanism for regional annual multi-species stock<br>assessment, by introducing legal/policy changes to overcome<br>existing barriers. | Fisheries WG        | FAO                 |

Note: The regional survey should cover environment, ecosystem and biodiversity aspects besides fishery.

#### Component IB. Carrying capacity

Success Criteria: Increased baseline information on carrying capacity. State-of-the-art-knowledge on carrying capacity analysis. Performed re-iterative series of regional analysis of carrying capacity. Mechanism for annual regional carrying capacity determination.

| Activities:  | Responsible<br>Parties | Associated Partners   |
|--|------------------------|---|
| Activity 1. Review of existing state-of-knowledge and preliminary carrying capacity analysis (retrospective) and define gaps | Fisheries WG           | FAO<br>Contaminant Control WG<br>Ecosystem Management<br>WG |
| Activity 2. Fill the knowledge gaps for carrying capacity analysis.  | Fisheries WG           | FAO<br>Contaminant Control WG<br>Ecosystem Management<br>WG |
| Activity 3. Perform iterative series of analysis of carrying capacity  | Fisheries WG           | FAO<br>Contaminant Control WG<br>Ecosystem Management<br>WG |
| Activity 4. Annual carrying capacity determination   | Fisheries WG           | FAO<br>Contaminant Control WG<br>Ecosystem Management<br>WG |

#### Component IC. Mariculture Production

Success Criteria: The activities will increase baseline information on status and trends in mariculture. New mariculture techniques will be developed. Pilot demonstration projects in place. Joint applied research programme for mariculture adopted.

| Activities:   | Responsible<br>Parties | Associated Partners |
|---|------------------------|---------------------|
| Activity 1. Review existing status and trends of mariculture. | Fisheries WG           | FAO                 |

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| Activity 2. Develop joint applied research program for sustainable mariculture. | Fisheries WG | FAO |
|---|--------------|-----|
| Activity 3. Pilot demonstration projects in mariculture                         | Fisheries WG | FAO |
| Activity 4. Assist region to implement mariculture techniques.                  | Fisheries WG | FAO |

#### Component ID. Disease in Mariculture

Success Criteria: Increased baseline information of disease in mariculture, particularly on emerging diseases. Regional early-warning system about new diseases to reduce transboundary implications will be established.

| Activities:   | Responsible<br>Parties | Associated Partners  |
|---|------------------------|--|
| Activity 1. Review existing state of knowledge of disease in mariculture, particularly emphasizing emergent diseases. | Fisheries WG           | FAO<br>Contaminant Control<br>WG<br>Ecosystem Management<br>WG |
| Activity 2. Joint development and demonstration of new methods for diagnosis, prevention, and control.                | Fisheries WG           | FAO<br>Contaminant Control<br>WG<br>Ecosystem Management<br>WG |
| Activity 3. Facilitate communication about new diseases, diagnoses, and control techniques.                           | Fisheries WG           | FAO<br>Ecosystem Management<br>WG                              |

#### **Component IE. Regional Agreements and National Laws**

Success Criteria: National fisheries laws and regulations strengthened and enforced. Developed and endorsed bilateral or regional agreement for sustainable use of fisheries resources.

| Activities:   | Responsible<br>Parties | Associated Partners |
|---|------------------------|---------------------|
| Activity 1. Review existing national laws and regulations on fisheries<br>and mariculture, and pertinent international agreements | Fisheries WG           | FAO                 |
| Activity 2. Develop regional agreement for sustainable use of fisheries resources.  | Fisheries WG           | FAO                 |
| Activity 3. Propose measures for strengthening laws and regulations,  | Fisheries WG           | FAO                 |

#### **Component IF. Management Plan**

Success Criteria: Strengthened national capacity for effective fisheries management. Improved fisheries management in the YSLME. Sustainable use of transboundary stocks building on management plans.

| Activities:  | Responsible<br>Parties | Associated Partners               |
|--|------------------------|-----------------------------------|
| Activity 1. Development of Regional fisheries<br>management/implementation plans, including regional recovery<br>programme.                  | Fisheries WG and PCU   | FAO<br>Ecosystem Management<br>WG |
| Activity 2. Implementation of Regional Fisheries and ecosystem<br>Management/Implementation Plans, including regional recovery<br>programme. | Fisheries WG and PCU   | FAO<br>Ecosystem Management<br>WG |

#### **OBJECTIVE II Effective Regional Initiatives for Biodiversity Protection**

This objective will summarize status of biodiversity in the YSLME, and laws and regulation addressing biodiversity; develop regional strategy for Protection of Biodiversity in the YSLME; prepare and implement regional Biodiversity Plan and investment strategy.

#### Outputs:

#### TDA

2.1 Regional biodiversity assessment.

2.1 List of existing legal and regulatory frameworks for biodiversity in the YSLME.

#### SAP

2.2 Regional Biodiversity Action Plan, including Regional Strategy for Conservation Areas, regional strategies for protection of vulnerable species, and regional consensus on the conservation of gene pool.

2.2 Investment strategy.

2.2 Proposals for regulation and control of exotic species.

SAP Implementation

2.2 New laws for regulation and control of exotic species identified.

2.3 Funded biodiversity projects responding to the priority actions of the Regional Biodiversity Action Plan.

#### Component IIA. Habitat Conservation

Success Criteria: Increased baseline information on existing national status and practices of coastal habitat use, conservation, and restoration. National biodiversity conservation programmes in accordance with NEAPs. Institutional strengthening through training. Implemented Regional Strategy for Conservation Areas, including identification of priority locations for the creation of new protected areas. Conservation of habitats of global significance. Regional network of protected areas as a part of global scenario.

| Activities:   | Responsible<br>Parties | Associated Partners |
|---|------------------------|---------------------|
| Activity 1. Review existing national practices of coastal habitat use, conservation, and restoration. | Biodiversity WG        |                     |
| Activity 2. Develop regionally coordinated strategies of<br>conservation and restoration of habitats. | Biodiversity WG        |                     |
| Activity 3. Implement Regional Strategy for Conservation Areas.                                       | Biodiversity WG        |                     |

#### Component IIB. Vulnerable Species

Success Criteria: Increased baseline information on existing status of vulnerable species and vulnerable tropic linkages. National biodiversity conservation programmes in accordance with NEAPs. Institutional strengthening through training. Implemented regionally coordinated strategies for protection of vulnerable species. Conservation of species of global significance.

| Activities:   | Responsible     | Associated Partners |
|---|-----------------|---------------------|
|   | Parties         |                     |
| Activity 1. Conduct national review of status of vulnerable     | Biodiversity WG | CBD, IUCN           |
| species and vulnerable trophic linkages.                        |                 |                     |
| Activity 2. Develop regionally-coordinated strategies for       | Biodiversity WG | CBD, IUCN           |
| protection of vulnerable species.                               |                 |                     |
| Activity 3. Implementation of regionally coordinated strategies | Biodiversity WG | CBD, IUCN           |
| for protection of vulnerable species.                           |                 |                     |

#### Component IIC. Genetic Diversity

Success Criteria: Increased baseline information of genetic degradation of important bio-resources. Implemented recommendations for conservation of specific gene pool.

| Activities:   | Responsible<br>Parties | Associated Partners |
|---|------------------------|---------------------|
| Activity 1. Determine situations of genetic degradation of important bio-resources. | Biodiversity WG        |                     |
| Activity 2. Develop regional consensus on the requirements for conservation of gene | Biodiversity WG        | CBD                 |
| Activity 3. Prepare recommendations for conservation measures                       | Biodiversity WG        | CBD                 |

#### Component IID. Introduced Species

Success Criteria: Increased baseline information on introduced exotic species and their pathways, assessment of impacts and risks. National rules for regulations and control of exotic species. Identified actions to mitigate threats from possible introduction of exotic species to the YSLME transboundary biodiversity.

| Activities: | Responsible<br>Parties | Associated Partners |
|-------------|------------------------|---------------------|
|             |                        |                     |

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| Activity 1. Document introduced exotic species and their pathways, assess impacts and risks.   | Biodiversity WG | IMO, CBD |
|--|-----------------|----------|
| Activity 2. Develop proposals for regulation and control of exotic species.  | Biodiversity WG | IMO, CBD |
| Activity 3. Implement strategies for regulation and control of introduction of exotic species, including necessary legal, policy, and institutional reforms at national and regional levels. | Biodiversity WG | IMO, CBD |

#### Component IIE. Regulations

Success Criteria: Reviewed national regulations and effectiveness of protected measures. Strengthen existing laws and regulations. Adoption of new laws. Regionally coordinated strategies for biodiversity protection developed and implemented. Regional agreements in place. Special attention will be given to ensure a holistic approach taking into account sustainable livelihoods of the local communities and impact on both genders.

| Activities   | Responsible Parties | Associated Partners |
|--|---------------------|---------------------|
|  | Responsible ranges  | Associated Farmers  |
|  |                     |                     |
| Activity 1. Review national regulations and effectiveness of | Biodiversity WG     | CBD                 |
| protection measures.   | -                   |                     |
|  |                     |                     |
| Activity 2. Develop regionally coordinated strategies        | Biodiversity WG     | CBD                 |
|  | -                   |                     |

#### Component IIF. Regional Assessment and Regional Biodiversity Plan

Success Criteria: Clarified national YSLME biodiversity protection priorities. Improve, through training, national institutions for implementation of national YSLME action plans. Regional Biodiversity Action Plan, including investment strategy, implemented.

| Activities:  | Responsible<br>Parties | Associated Partners |
|--|------------------------|---------------------|
| Activity 1. Coordinate above activities into biodiversity assessment, regional Action Plan, and investment strategy. | Biodiversity WG        | CBD                 |

#### OBJECTIVE III Actions to Reduce Stress to the Ecosystem, Improve Water Quality & Protect Human Health

This component is designed to collect data through special investigations to fill in the gaps for the regional assessment and to set priorities for transboundary environmental issues in the region during the TDA process; identify corrective measures and long term strategies including investment strategies for remediation; establish a contaminant and ecological monitoring system for the long-term success of SAP and NAP implementation. **Outputs:** 

TDA

3.1 Data on identified stresses
SAP
3.2 Proposals for upgrading the regional monitoring network
SAP implementation
Regional planning and preparedness strategies

#### Component IIIA. Stressors to Ecosystem

Success Criteria: Natural and human-induced stresses on the ecosystem identified and ranked. Identified data and information gaps. Corrective measures to minimize the human-induced stress identified and implemented. Regional policies and legal measures identified and implemented.

| Activities:   | Responsible Parties                                     | Associated<br>Partners |
|---|---|------------------------|
| Activity 1. Identify and rank stresses on the ecosystem; identify data and information gaps | Contaminant Control<br>WG<br>Ecosystem<br>Management WG |                        |
| Activity 2. Identify corrective measures to minimize the human-induced stress.              | Contaminant Control<br>WG<br>Ecosystem<br>Management WG |                        |
| Activity 3. Identify policies and legal measures to reduce the stress.                      | Contaminant Control<br>WG<br>Ecosystem                  |                        |

|  | Management WG       |  |
|--|---------------------|--|
| Activity 4. Develop strategy to identify long-term sustainable   | Contaminant Control |  |
| investments to improve the YSLME.                                | WG                  |  |
|  | Ecosystem           |  |
|  | Management WG       |  |
| Activity 5. Implement corrective measures to minimize the human- | Contaminant Control |  |
| induced stress.  | WG                  |  |
|  | Ecosystem           |  |
|  | Management WG       |  |

#### Component IIIB. Carrying Capacity of Ecosystem

Success Criteria: Assessment of carrying capacities of the ecosystem. Identification of root causes of environmental degradation on the YSLME and possible mitigation actions. Establishment of regional scientific and technical framework for monitoring the changing status of YSLME and its transboundary impacts.

| Activities:  | Responsible Parties        | Associated<br>Partners    |
|--|----------------------------|---------------------------|
| Activity 1. Assess the carrying capacities of the ecosystem under<br>changing human-induced and natural variability; identify data and<br>information gaps: including demonstration of new and innovative<br>technologies. | Ecosystem<br>Management WG | Contaminant<br>Control WG |
| Activity 2. Identify information gaps  | Ecosystem<br>Management WG | Contaminant<br>Control WG |
| Activity 3. Develop strategies for monitoring changing status of<br>ecosystem and its transboundary impacts.   | Ecosystem<br>Management WG | Contaminant<br>Control WG |
| Activity 4. Prepare state-of-ecosystem reviews and reports.  | Ecosystem<br>Management WG | Contaminant<br>Control WG |
| Activity 5. Facilitate implementation of strategies for improving the ecosystem status.  | Ecosystem<br>Management WG | Contaminant<br>Control WG |

#### **Component IIIC. Contaminant Inputs**

Success Criteria: Strengthen national capacities for effective marine contaminant reduction and mitigation. Regional system of effective marine contaminant reduction and mitigation. Regional quality and assurance system established.

| Activities:   | Responsible Parties       | Associated<br>Partners     |
|---|---------------------------|----------------------------|
| Activity 1. Assess and monitor the contaminant and nutrient levels.   | Contaminant Control WG    |                            |
| Activity 2. Develop regional priorities and strategies to reduce contaminant and nutrients levels   | Contaminant Control WG    | Ecosystem<br>Management WG |
| Activity 3. Facilitate implementation of these strategies; investment promotion activities including transfer/development new technologies. | Contaminant Control<br>WG | Investment WG              |

#### Component IIID. Contaminant Levels

Success Criteria: Fully operational, upgraded, and strengthened national monitoring system in each country. Highly qualified trained staff. Ratification and implementation of international conventions by each country. Network of monitoring centres throughout the region. Reliable data to catalyze reduction of existing and prevention of new types of contamination.

| Activities:  | Responsible Parties       | Associated<br>Partners                      |
|--|---------------------------|---|
| Activity 1. Develop baseline data and summarize contaminant and<br>nutrient levels in the YSLME. | Contaminant Control<br>WG |   |
| Activity 2. Develop regional monitoring network strategy.  | Contaminant Control<br>WG |   |
| Activity 3. Develop funding mechanism to implement the monitoring strategy.                      | Contaminant Control<br>WG | Ecosystem<br>Management WG<br>Investment WG |

#### Component IIIE. HABs and Emerging Diseases

Success Criteria: Increased baseline information on HABs and emerging diseases. Comparative analysis of cause patterns and impacts on bio-resources and human health. Strengthened institutions through training. Established, well-functioning monitoring network for HABs and emerging diseases. Regional management and mitigation strategies developed and implemented.
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| Activities:   | Responsible Parties | Associated<br>Partners |
|---|---------------------|------------------------|
| Activity 1. Undertake comparative analysis of causes and impacts of | Ecosystem           | Contaminant            |
| HABs and Emerging Diseases on bio-resources and human health.       | Management WG       | Control WG             |
| Activity 2. Monitor HABs  | Ecosystem           | Contaminant            |
|   | Management WG       | Control WG             |
| Activity 3. Develop management and mitigation strategies            | Ecosystem           | Contaminant            |
|   | Management WG       | Control WG             |
| Activity 4. Facilitate regional management and mitigation           | Ecosystem           | Contaminant            |
| implementation.   | Management WG       | Control WG             |

### Component IIIF. Critical Spot Analysis

Success Criteria: Strengthen national capabilities to determine and rank critical spot sources of water quality degradation, and impact on health and livelihoods of local communities. Regional procedures for remediation and prevention adopted. Financial resources secured.

| Activities:  | Responsible Parties       | Associated<br>Partners |
|--|---------------------------|------------------------|
| Activity 1. Determine and rank critical spot sources of water quality degradation.   | Contaminant Control WG    |                        |
| Activity 2. Develop procedures for remediation                                       | Contaminant Control WG    |                        |
| Activity 3. Develop investment strategies  | Contaminant Control<br>WG |                        |
| Activity 4. Facilitate implementation of procedures for re-mediation and prevention. | Contaminant Control<br>WG |                        |

### Component IIIG. Emergency Planning and Preparedness

Success Criteria: National marine pollution preparedness, response, and contingency plans enforced. Major reduction in risks of regional environmental degradation. YSLME Regional contingency plan. Strong regional network of responsible authorities.

| Activities:  | Responsible Parties       | Associated<br>Partners |
|--|---------------------------|------------------------|
| Activity 1. Assess national emergency and contingency capabilities for transboundary contaminants.             | Contaminant Control<br>WG |                        |
| Activity 2. Develop strategies for rapid and long-term regional responses to catastrophic causes of pollution; | Contaminant Control WG    |                        |
| Activity 3. Facilitate regional actions to enable contingency planning.  | Contaminant Control<br>WG |                        |
| Activity 4. Harmonize customs, training.   | Contaminant Control<br>WG |                        |

### Component IIIH. Legal and Regulatory

Success Criteria: Legal framework for addressing transboundary problems established. Institutions strengthened through training in environmental planning and management. Existing national and international laws and conventions surveyed. Coordinated proposals drafted for improved water quality legislation and regulation.

| Activities:   | Responsible Parties                                     | Associated<br>Partners |
|---|---|------------------------|
| Activity 1. Review and compare national regulations and laws on water quality and pollution control, develop proposals. | Ecosystem<br>Management WG<br>Contaminant Control<br>WG |                        |
| Activity 2. Facilitate coordinated actions to improve regional water<br>quality legislation and regulation              | Ecosystem<br>Management WG<br>Contaminant Control<br>WG |                        |

### Component III i. Analysis of the Fate and Transport of Contaminants to Facilitate SAP Analysis

Success Criteria: Increased baseline information of fate and transport of contaminants and nutrients. Strengthened national capabilities through training. Performed fate and transport analyses for management and policy development, including EIA process and ICZM. Regional training activities for environmental risk assessment implemented.

| Activities:  | Responsible Parties | Associated<br>Partners |
|--|---------------------|------------------------|
| Activity 1. Review existing understanding of fate and transport of | Ecosystem           |                        |

| contaminants,  | Management WG<br>Contaminant Control<br>WG              |
|--|---|
| Activity 2. Develop regional assessment strategies   | Ecosystem<br>Management WG<br>Contaminant Control<br>WG |
| Activity 3. Perform fate and transport analyses for management and policy development, including EIA process, ICZM.                            | Ecosystem<br>Management WG<br>Contaminant Control<br>WG |
| Activity 4. Develop regional training activities for environmental risk assessment; facilitate use of risk assessment in investment decisions. | Ecosystem<br>Management WG<br>Contaminant Control<br>WG |

### **OBJECTIVE IV Development of Regional Institutions and Capacities**

This component will create a functioning network of institutions and individuals to address the YSLME environmental issues and root causes; identify the process for evolving institutional arrangements from the support of the GEF to ownership by Region; and develop strategies to sustain the effective network of institutions and individuals to address the YSLME environmental issues and root causes.

#### Outputs:

### TDA

4.1 Stakeholder and institutional participation strategy

4.1 Final TDA

SAP

4.2 Network of local, national and regional stakeholders

- 4.2 National Yellow Sea Action Plans
- 4.2 Strategic Action Programme, including assigning M&E indicators to each intervention/activity

### SAP implementation

- 4.3 Programme of regional and national intersectoral cooperation
- 4.3 Financial mechanism to sustain public awareness

### Component IVA. Stakeholders

| Success Criteria: Identified and strengthened capacities for<br>stakeholders' involvement in the YSLME. Effective involvement of<br>stakeholders, with the emphasis on women, in environmental and<br>resource management, as well as the decision-making process, to<br>address the YSLME environmental issues and root<br>causes.Activities: | Responsible Parties | Associated Partners |
|--|---------------------|---------------------|
| Activity 1. Identify stakeholders and asses their capacities for   | PCU                 | NPC                 |
| contributing to environmental management and decision-making.  |                     | All WGs             |
| Activity 2. Strengthen stakeholder capacities  | PCU                 | NPC, All WGs        |
| Activity 3. Encourage stakeholder involvement in environmental   | PCU                 | NPC                 |
| and resource management and decision-making.   |                     | All WGs             |

### Component IVB. Regional Coordination

Success Criteria: Effective co-ordination and implementation of national activities, as well as 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 TDA and SAP preparation. Effective regional coordination mechanism for the YSLME sustained through regional agreements

| Activities:   | Responsible Parties | Associated Partners |
|---|---------------------|---------------------|
| Activity 1. Create a functioning regional coordination mechanism to | PCU                 | SMAG, NFPs          |
| carry out the YSLME Project   |                     |                     |
| Activity 2. Identify modes to sustain the regional coordination     | PCU                 | SMAG, NFPs,         |
| mechanism.  |                     |                     |
| Activity 3. Assist the Region in maintaining an effective regional  | PCU                 | SMAG, NFPs          |
| coordination mechanism for the YSLME.                               |                     |                     |

### Component IVC. National Institutions

Success Criteria: Strengthened national institutions, as well as enhanced ability to contribute to environmental management and decision-making. Effective regional network of institutions to address the YSLME environmental issues and root causes.

| Activities:  | Responsible Parties | Associated Partners |
|--|---------------------|---------------------|
| Activity 1. Strengthen capacity to contribute to environmental | NFPs                | SMAG, PCU           |

# 17. Yellow Sea LME

| management and decision-making             |      |           |
|--|------|-----------|
| Activity 2. Facilitate ongoing management. | NFPs | SMAG, PCU |

### Component IVD. Financial Instruments

Success Criteria: Improved national capacities and training in environmental project identification and preparation. Small environmental grants programme developed, with priority investment projects developed for each country. Implemented pre-feasibility studies of promising technologies and industries to help achieve the goals of the YSLME, to create an investment portfolio (Priority Investment Portfolio). Long term environmental investment to implement the SAP and NYSAPs established.

| Activities:  | Responsible Parties | Associated Partners |
|--|---------------------|---------------------|
| Activity 1. Develop a regional matched small grants program              | Investment WG       |                     |
| Activity 2. Provide training in environmental project identification and | Investment WG       |                     |
| preparation.   |                     |                     |
| Activity 3. Provide funding for pre-feasibility studies of promising     | Investment WG       |                     |
| technologies and industries to help achieve the goals of the YSLME,      |                     |                     |
| to create an investment portfolio (Priority Investment Portfolio).       |                     |                     |
| Activity 4. Identify a mechanism for participation by international      | Investment WG       |                     |
| development banks to learn of investment opportunities in the            |                     |                     |
| YSLME.   |                     |                     |

### Component IVE. Data and Information Management

Success Criteria: Strengthening or creation of national environmental data centres and institutions through provision of equipment, training, and networking. Easy and reliable access to electronic means of communication, data, and information exchange. Stakeholders trained and willing to use GIS and information systems. Regional YSLME Networking Information System including data on institutional capacities, scientists, environmental projects, environmental data sets in the region, and GIS, accessible via Internet to the world community. High quality, reliable data on YSLME environmental issues. Sustainable regional mechanism for DIM for effective management of the YSLME.

| Activities:  | Responsible Parties | Associated<br>Partners |
|--|---------------------|------------------------|
| Activity 1. Determine regional data and information management capabilities.                         | PCU                 | GRID                   |
| Activity 2. Develop an effective regional DIM strategy to help achieve the goals of the YSLME.       | PCU                 | GRID                   |
| Activity 3. Implement the regional DIM strategy, including equipment, facilities, and communications | PCU                 | GRID                   |

### Component IVF. Public Awareness and Participation

Success Criteria: Increased environmental awareness at the national and community levels. Local environmental NGOs and community groups obtain grants to carry out projects. Increased public awareness and support for regional environmental issues. Enhanced overall effectiveness of environmental awareness programmes through the organization of concerted region-wide activities, as well as exchange of lessons learned through an active regional network of NGOs and community groups.

| Activities:   | Responsible Parties | Associated<br>Partners |
|---|---------------------|------------------------|
| Activity 1. Develop a public awareness campaign   | PCU, Investment WG  | NPC, All WGs           |
| Activity 2. Demonstrate regional public awareness/ participation campaign.  | PCU, Investment WG  | NPC, All WGs           |
| Activity 3. Encourage ongoing public awareness and participation activities to help achieve the goals of the YSLME. | PCU, Investment WG  | NPC, All WGs           |

# Part III

# PART II LME BASED GEF – WORLD BANK STRATEGIC PARTNERSHIP AND INVESTMENT PROJECTS

During the 2010 to 2015 period, special effort is to be directed by NOAA's LME program in partnership with the five UN agencies and two NGOs engaged in assisting developing countries in accelerating the integration of the regional World Bank financed projects to support the LME approach. Included are projects to reduce pollution in the LMEs of East Asia, sustain the fisheries of LMEs of sub-Saharan Africa, reduce nutrient over enrichment of the Danube Basin and Black Sea LME, and strengthen the integration of the LME modular ecosystem approach to the assessment and management of the goods and services of the Mediterranean Sea LME.

# Part II LME Based GEF – World Bank Strategic Partnership and Investment Projects

Accessed February 2010, GEF Project Database

| Regional - World Bank – Global Environment Facility Partnership                  |       |
|--|-------|
| Investment Fund for Pollution Reduction in the LMEs of East Asia                 | 145   |
| 2454 Tranche 1 of 3 tranches   |       |
| 3025 Tranche 1, 2 <sup>nd</sup> Installment                                      |       |
| 2138 Regional – Livestock Waste Management in East Asia                          |       |
| 2700 Regional – Implementation of Sustainable Development Strategy               |       |
| for the Seas of East Asia (SDS-SEA)  |       |
| Regional - Strategic Partnership for a Sustainable Fisheries Investment          |       |
| Fund in the Large Marine Ecosystems of Sub-Saharan Africa                        | 151   |
| 3271 Tranche 1   |       |
| 2093 Tranche 1, Installment 1  |       |
| 3559 Tranche 1, Installment 2  |       |
| Regional - World Bank – Global Environment Facility Strategic Partnership        |       |
| for Nutrient Reduction in the Danube River and Black Sea                         | 155   |
| 1014 Tranche 1   |       |
| 1661 Tranche 2   |       |
| 2044 Tranche 3   |       |
| Regional – Strengthening the Implementation Capacities for Nutrient              | . = - |
| Reduction and Transboundary Cooperation in the Danube River Basin                | 158   |
| 1460 Phase 1   |       |
| 2042 Tranche 2   |       |
| Regional – World Bank GEF Investment Fund for the Mediterranean Sea              |       |
| Large Marine Ecosystem Partnership   | 161   |
| 2601 Tranche 1, 1 <sup>st</sup> Allocation                                       |       |
| 3229 Tranche 1, 2 <sup>th</sup> Installment                                      |       |
| 2600 Regional – Strategic Partnership for the Mediterranean Large Marine         |       |
| Ecosystem – Regional <b>Component</b> : Implementation of Agreed Actions for the | ie    |
| Protection of the Environmental Resources of the Mediterranean Sea and Its       | 5     |
| Coastal Areas  |       |

# World Bank-Global Environment Facility Partnership Investment Fund for Pollution Reduction in the LMEs of East Asia

# Regional - World Bank/GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia (Tranche 1 of 3 tranches)

| GEF Project ID             | 2454  |  |
|----------------------------|---|--|
| Funding Source             | GEF Trust Fund  |  |
| Project Name               | World Bank/GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia (Tranche 1 of 3 tranches)  |  |
| Country                    | Regional (Asia/Pacific)   |  |
| Region                     | Asia and the Pacific  |  |
| Focal Area                 | International Waters  |  |
| <b>Operational Program</b> | 10  |  |
| Pipeline Entry Date        | March 18, 2004  |  |
| PDF-B Approval Date        | January 24, 2005  |  |
| Approval Date              | November 10, 2005   |  |
| Project Status             | Council Approved  |  |
| GEF Agency                 | IBRD - The World Bank   |  |
| Executing Agency           | Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)   |  |
| Description                | The objective of this proposed World Bank/GEF East Asia Land-Based Pollution Reduction<br>Investment Fund Project (the Partnership Fund) is to reduce local, national and trans-boundary<br>degradation of East Asia's marine ecosystems due to land-based pollution. It would help<br>implement the action plans that are emerging from the GEF-supported planning efforts for the<br>South China Sea and the Yellow Sea Large Marine Ecosystems, and the national and local<br>commitments facilitated by the GEF/UNDP/IMO PEMSEA Project (Partnerships for<br>Environmental Management of the Seas of East Asia). Its strategic objective would be to help<br>address the three major gaps in ongoing regional land-based pollution control efforts, which<br>are concentrated in a few large cities and in publicly-owned and managed waste-water<br>treatment facilities. These gaps are: (i) pollution from secondary cities and their industrial<br>complexes, (ii) agricultural pollution, and (iii) private investment and public/private<br>partnerships for pollution reduction The project's development goal would be to promote<br>sustainable development of the coastal areas of the East Asia region by reducing land-based<br>pollution of its rivers and seas. Its global environment goal would be to promote the<br>environmental sustainability of several of East Asia's large marine ecosystems by reducing<br>land-based pollution of them. The Partnership would establish a World Bank-implemented,<br>GEF-financed Investment Fund to Address Land-Based Pollution of the Large Marine<br>Ecosystems of East Asia, the first five-year phase of which would be capitalized with \$70-80<br>million of GEF resources. The Fund would co-finance: (a) a series of large-scale publicly-<br>managed, World Bank co-financed pollution-reduction investment projects or programs in<br>regional land-based pollution "hot-spots"; and (b) a revolving fund or funds to stimulate and<br>co-finance site-specific private and/or public-private land-based pollution investments,<br>particularly in the manufacturing and agro-industrial sectors, also in regional land- |  |
| Implementation             |   |  |

Status

| PDF B Amount      | 700,000 US\$     |
|-------------------|------------------|
| GEF Project Grant | 4,438,000 US\$   |
| GEF Grant         | 5,138,000 US\$   |
| Cofinancing Total | 459,930,000 US\$ |
| Project Cost      | 465,068,000 US\$ |
| GEF Agency Fees   | 2,313,000 US\$   |

### **Project Documents**

Endorsement Letter from Government-Cambodia

Endorsement Letter from Government-Philippines

Endorsement Letter from Government-Indonesia

PDF-B Document (Revised)

Project Concept (Revised)

Executive Summary (Revised)

Project Document for WP (Revised)

Annexes (1)

Annexes (2)

Annexes (3)

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## Regional - World Bank/GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia (Tranche 1, 2nd Installment)

| GEF Project ID      | 3025   |  |
|---------------------|--|--|
| Funding Source      | GEF Trust Fund   |  |
| Project Name        | World Bank/GEF Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia (Tranche 1, 2nd Installment)  |  |
| Country             | Regional (China, Indonesia, Cambodia, Lao PDR, Malaysia, Philippines, Thailand, Vietnam)   |  |
| Region              | Asia and the Pacific   |  |
| Focal Area          | International Waters   |  |
| Operational Program | 10   |  |
| Strategic Program   | IW-2   |  |
| Pipeline Entry Date | e March 18, 2004   |  |
| Approval Date       | June 14, 2007  |  |
| Project Status      | Council Approved   |  |
| GEF Agency          | IBRD - The World Bank  |  |
| Executing Agency    | World Bank   |  |
| Description         | This 10 mio \$ project is the 2nd installment of the first Tranche, of which 1st installment of 25 mio \$ was approved in November 2005 by the GEF council. The installment was divided due to GEF funding constraints. The objective of this proposed World Bank/GEF East Asia Land-Based Pollution Reduction Investment Fund Project (the Partnership Fund) is to reduce local, national and trans-boundary degradation of East Asia's marine ecosystems due to land-based pollution. It would help implement the action plans that are emerging from the GEF-supported planning |  |

efforts for the South China Sea and the Yellow Sea Large Marine Ecosystems, and the national and local commitments facilitated by the GEF/UNDP/IMO PEMSEA Project (Partnerships for Environmental Management of the Seas of East Asia). Its strategic objective would be to help address the three major gaps in ongoing regional land-based pollution control efforts, which are concentrated in a few large cities and in publicly-owned and managed waste-water treatment facilities. These gaps are: (i) pollution from secondary cities and their industrial complexes, (ii) agricultural pollution, and (iii) private investment and public/private partnerships for pollution reduction The project's development goal would be to promote sustainable development of the coastal areas of the East Asia region by reducing land-based pollution of its rivers and seas. Its global environment goal would be to promote the environmental sustainability of several of East Asia's large marine ecosystems by reducing land-based pollution of them. The Partnership would establish a World Bank-implemented, GEF-financed Investment Fund to Address Land-Based Pollution of the Large Marine Ecosystems of East Asia, the first five-year phase of which would be capitalized with \$70-80 million of GEF resources. The Fund would co-finance: (a) a series of large-scale publicly-managed, World Bank co-financed pollution-reduction investment projects or programs in regional land-based pollution "hot-spots"; and (b) a revolving fund or funds to stimulate and co-finance site-specific private and/or public-private land-based pollution investments, particularly in the manufacturing and agro-industrial sectors, also in regional landbased pollution hot spots. It would be loosely modeled on the World Bank/GEF Nutrient Reduction Investment Fund for the Danube/Black Sea Basin, which was established in 2002 and has catalyzed over \$400 million worth of anti-pollution measures.

#### **Implementation Status**

GEF Project Grant5,000,000 US\$GEF Grant5,000,000 US\$Cofinancing Total80,870,000 US\$Project Cost85,870,000 US\$GEF Agency Fees900,000 US\$

### **Project Documents**

Executive Summary (Revised)

Project Document for WP (Revised)

**Annexes** 

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### **Regional - Livestock Waste Management in East Asia**

| GEF Project ID           | 2138                                    |
|--------------------------|---|
| IBRD PO ID               | 79610                                   |
| Funding Source           | GEF Trust Fund                          |
| Project Name             | Livestock Waste Management in East Asia |
| Country                  | Regional (China, Thailand, Vietnam)     |
| Region                   | Asia and the Pacific                    |
| Focal Area               | International Waters                    |
| Operational Program      | 10                                      |
| Pipeline Entry Date      | June 13, 2003                           |
| PDF-B Approval Date      | June 13, 2003                           |
| Approval Date            | April 06, 2005                          |
| CEO Endorsement Date     | February 22, 2006                       |
| GEF Agency Approval Date | March 21, 2006                          |
| Project Status           | IA Approved                             |

| GEF Agency IBRD - The World Bank   |  |
|--|--|
| Executing Agency   | Ministry of Finance, China; Guangdong Provincial Government, China; Ministry of Agriculture and Cooperatives, Thailand; Ministry of Natural Resources and Environment, Vietnam; UN Food and Agriculture Organization       |
| Description The project would finance the incremental costs of moving from the busines<br>approach of ineffectively addressing the environmental problems that are be<br>by the rapidly increasing large-scale livestock production units to a strategic<br>for a livestock production development which is not only economically, but a<br>environmentally sustainable. The scenario would comprise capacity and inst<br>building in the countries concerned; the demonstration and introduction of a<br>spatial distribution of intensive livestock production to bring the nutrient em<br>in line with the adsorptive capacity of the surrounding land; and the use of i<br>manure management technologies to reduce the environmental damage tha<br>livestock activities currently cause. The GEF Alternative would leverage a su<br>volume of private sector investment in waste management strategies. Prelir<br>estimates suggest that the private sector would invest approximately US\$ 5<br>as a direct consequence of the project. Finally, the project's impact on pollu<br>international waters of the East Asian Seas would be substantial, being lives<br>the recognized major sources of water pollution in the coastal areas. |  |
| Implementation Status  | GEF Pipeline Entry and PDF-B grant were approved in June 2003. The Project has been approved for the GEF Council for Work Program inclusion in early April 2005. Bank Board's approval is currently set for November 2005. |
| PDF B Amount   | 700,000 US\$   |
| GEF Project Grant  | 7,000,000 US\$   |
| GEF Grant  | 7,700,000 US\$   |
| Cofinancing Total  | 17,010,000 US\$  |
| Project Cost   | 24,710,000 US\$  |
| GEF Agency Fees  | 693,000 US\$   |
| GEF Project Grant (CEO Endo.)  | 7,000,000 US\$   |
| Cofinancing Total (CEO Endo.)  | 17,006,300 US\$  |
| Project Cost (CEO Endo.)   | 24,706,300 US\$  |
| GEF Agency Fees (CEO Endo.)  |  |

# **Project Documents**

PDF-B Document (Revised)

Executive Summary (Revised)

Project Document for WP (Revised)

Project Appraisal Document (for CEO Endorsement)

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# Regional - Implementation of Sustainable Development Strategy for the Seas of East Asia (SDS-SEA)

| GEF Project ID | 2700  |
|----------------|---|
| UNDP PMIS ID   | 3469  |
| Funding Source | GEF Trust Fund  |
| Project Name   | Implementation of Sustainable Development Strategy for the Seas of East Asia (SDS-SEA)      |
| Country        | Regional (China, Indonesia, Cambodia, Lao PDR, Philippines, Thailand, Timor Leste, Vietnam) |
| Region         | Asia and the Pacific  |

| Focal Area                  | International Waters  |  |
|-----------------------------|---|--|
| Operational<br>Program      | 9   |  |
| Strategic<br>Program        | IW-2  |  |
| Pipeline Entry<br>Date      | May 17, 2005  |  |
| PDF-B Approval<br>Date      | March 14, 2006  |  |
| Approval Date               | June 14, 2007   |  |
| CEO<br>Endorsement<br>Date  | November 07, 2007   |  |
| GEF Agency<br>Approval Date | December 28, 2007   |  |
| Project Status              | IA Approved   |  |
| GEF Agency                  | UNDP - United Nations Development Programme   |  |
| Executing<br>Agency         | IMO, UNOPS  |  |
| Description                 | The proposed project is an essential component of the early implementation of the Sustainable<br>Development Strategy for the Seas of East Asia (SDS-SEA). The objectives of the project are to<br>support country and stakeholder momentum towards full implementation of the SDS-SEA in the<br>priority areas of: •Operationalizing a country-owned regional mechanism, consisting of a PEMSEA<br>Partnership Council, a PEMSEA Resource Facility, a regional Partnership Fund, and a tri-annual East<br>Asian Seas Congress to oversee, guide, coordinate and monitor the full implementation of the SDS-<br>SEA: •Developing and implementing patients and action plans for suctainable coastal and |  |

SEA; •Developing and implementing national policies and action plans for sustainable coastal and ocean development in at least 70% of PEMSEA countries by 2015; •Scaling up ICM programmes at the national and sub-national levels, targeting coverage of at least 20% of the region's coastlines by 2015, including reduction of vulnerability from natural hazards and improved health of human beings, ecosystems and the natural resource base; .Forging twinning and networking arrangements involving South-South and North-South collaboration to share knowledge and experience in innovative approaches to ecosystem-based management of watersheds, estuaries and the adjacent coastal seas, such as Chesapeake Bay, Seto Inland Sea, Bohai Sea, Manila Bay, Masan-Chinhae Bay and Jakarta Bay, as well as the effective management of marine protected areas, such as the Great Barrier Reef and Sulu-Sulawesi Sea; •Building up and making the best use of regional intellectual capital and resources for integrated management and sustainable use of the environment and resources, through stakeholder participation and networking, as well as scientific, technical and information support; and •Establishing innovative financing mechanisms to help countries achieve time-bound wastewater emission targets, including a revolving fund to leverage private sector investment and public-private partnerships for pollution control in secondary cities and in industrial and agricultural enterprises in regional pollution hotspots, in collaboration with World Bank, participating national governments and the private sector. Summary Recommendation: The program manager having reviewed the submitted documentation, would recommend CEO approval of WP entry upon review of a revised proposal addressing the following: (i) provide a section describing how the proposal responds to the recommendations made at the time of PDF-B approval (see Program and Policy Conformity section of the Review Sheet). (ii) Provide in the Executive Summary a section describing the co-financing sources (type, and source). (iii) Provide in the Exec. Summary a detailed budget, by activity and subcomponent, in addition to the one by type of expenditure presented in the ProDoc. (iv) Specify the resources allocated for all the activities related to Replication, as described at pages 10,11, 12 of the Exec. Summary. (v) Management budget. The total GEF exceeds the 10% standard. It includes \$320k for travels and office facilities. These costs should be reduced and/or covered through co-financing, or well justified in the text. (vi) Provide in the Exec.Summary explanatory text referring to the Revolving Fund alluded to in the Logframe (G.1.3.). (vii) Ensure that project will have a website according to IW LEARN criteria, and that it will participate to IW LEARN initiatives, including biannual conferences.

| Status               |                 |
|----------------------|-----------------|
| PDF B Amount         | 700,000 US\$    |
| GEF Project<br>Grant | 10,876,336 US\$ |
| GEF Grant            | 11,576,336 US\$ |
| Cofinancing<br>Total | 33,374,400 US\$ |

Project Cost44,950,736 US\$GEF Agency<br/>Fees1,041,870 US\$GEF Project<br/>Grant (CEO<br/>Endo.)10,876,336 US\$Cofinancing<br/>Total (CEO<br/>Endo.)33,374,400 US\$Project Cost<br/>(CEO Endo.)44,950,736 US\$GEF Agency<br/>Fees (CEO<br/>Endo.)1,041,870 US\$

### **Project Documents**

Project Concept (Revised)

PDF-B Document

Project Document for WP (Revised)

Executive Summary (Revised)

**PDF Evaluation Report** 

Project Appraisal Document (for CEO Endorsement)

Request for CEO Endorsement

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# Strategic Partnership for a Sustainable Fisheries Investment Fund in the LMEs of Sub-Saharan Africa

# Regional - Regional Activities of the Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub Saharan Africa, Tranche 1

| GEF Project ID           | 3271   |  |
|--------------------------|--|--|
| Funding Source           | GEF Trust Fund   |  |
| Project Name             | Regional Activities of the Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub Saharan Africa, Tranche 1   |  |
| Country                  | Regional ()  |  |
| Region                   | Regional   |  |
| Focal Area               | International Waters   |  |
| Operational<br>Program   | 8  |  |
| Strategic<br>Program     | IW-2   |  |
| Pipeline Entry<br>Date   | December 18, 2006  |  |
| PIF Approval<br>Date     | November 01, 2006  |  |
| Approval Date            | May 16, 2007   |  |
| Project Status           | CEO Approved   |  |
| GEF Agency               | IBRD - The World Bank  |  |
| Executing<br>Agency      | African Union, United Nations Food & Agriculture Organization (FAO), World Wildlife Fund (WWF)   |  |
| Description              | The objectives of this Grant to support the Regional Activities of the Strategic Partnership are to:<br>-Strengthen regional coordination in order to ensure complementarity among country-level and<br>regional projects, in particular in respect to management of trans-boundary resources; -Promote<br>learning and information exchange at the regional level to ensure that the lessons from successes<br>and failures of country and LME level investments are adequately disseminated; and -Encourage<br>direct financial support in the SSA countries for the necessary governance (i.e. policy, legal, and<br>institutional) reforms and sector adjustments to manage their fisheries sustainably in a way that<br>ensures a distribution of benefits that will contribute to poverty reduction and food security; -<br>Assist individual coastal countries to build the capacity to participate in the ongoing GEF-led<br>Large Marine Ecosystem (LME) projects and regional fisheries bodies (RFBs) as well as<br>collaborate through these initiatives to implement management measures for the marine<br>ecosystems and the trans-boundary fisheries resources and/or fishing fleets that would be more<br>appropriate at the sub-regional scale (e.g. sub-regional monitoring, control and surveillance<br>systems, management of fishing capacity, sub-regional research initiatives, networks of marine<br>protected areas (MPAs), etc.). |  |
| Implementation<br>Status |  |  |
| GEF Project<br>Grant     | 1,000,000 US\$   |  |
| GEF Grant                | 1,000,000 US\$   |  |
| Cofinancing              | 330,000 US\$   |  |

| Total        |                |
|--------------|----------------|
| Project Cost | 1,330,000 US\$ |
| GEF Agency   |                |

### **Project Documents**

**PIF Document** 

Project Document for CEO Approval (Revised)

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## Regional - Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa (Tranche 1, Installment 1)

| GEF Project ID         | 2093  |
|------------------------|---|
| IBRD PO ID             | 87411   |
| Funding Source         | GEF Trust Fund  |
| Project Name           | Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa (Tranche 1, Installment 1)   |
| Country                | Regional (Africa)   |
| Region                 | Africa  |
| Focal Area             | International Waters  |
| Operational<br>Program | 8; 2  |
| Pipeline Entry<br>Date | June 12, 2003   |
| PDF-B Approval<br>Date | June 07, 2004   |
| Approval Date          | November 15, 2005   |
| Project Status         | Council Approved  |
| GEF Agency             | IBRD - The World Bank   |
| Executing<br>Agency    | TBD for Individual projects   |
| Description            | The 5 Large Marine Ecosystems(LMEs) of Sub-Saharan Africa are beginning to feel the cumulative effects of growing populations and overfishing. As such, these LMEs, and the living resources they support, are being threatened on two fronts: from the destruction of critical habitat that provides spawning and nursery grounds for many species of fish in the early stages of their life cycle, to over-harvesting of target fish stocks based on inadequate management of fishing effort (both local and distant fleets). For the protection of globally significant marine biodiversity and for the livelihoods for millions of people that depend on this biodiversity in the LMEs of Sub-Saharan Africa, there is an urgent need for improved fisheries resource management based on an ecosystem approach, which takes into account both the pressures on individual fish stocks as well as the threats to the habitat critical to their survival. In order to reverse the depletion of fisheries in the LMEs of Sub-Saharan Africa, and to assist the individual coastal countries bordering these LMEs to meet the fisheries targets set by the WSSD, a ten-year Strategic Partnership for a Sustainable Fisheries Investment Fund is being proposed. The rationale for a partnership is that the fisheries resources supported by the large marine ecosystems of Sub-Saharan Africa are both poorly governed and often transboundary in nature. For this reason, the WSSD has recommended partnerships of donors, technical agencies and NGOs as the best vehicle to assist developing |

countries to change both policies and practices in fisheries management and the governance of large marine ecosystems. Thus, a Strategic Partnership for a Sustainable Fisheries Investment Fund, focused on the LMEs of Sub-Saharan Africa (with a coalition consisting of WWF, FAO, and the World Bank Group), is being proposed in order to assist the coastal countries in the region to meet the targets for sustainable fisheries set by the WSSD, to complement the existing regional LME projects funded by GEF, and to ensure the health of the fisheries resource base upon which so many lives and livelihoods depend. This would be analgous to the Danube/Black Sea Basin Partnership for nutrient reduction except it would focus on single country interventions for policy reforms and investments for conserving living resources and their habitat in the 5 LMEs of SSA. The World Bank would be responsible for the preparation of the country-level investments for sustainable management of marine fisheries and their habitat by use of the World Bank's ongoing country dialogue for development of regional and country programs and by use of the most applicable IBRD or IDA financing instrument, which would be combined with GEF co-financing. Once potential projects have been identified in a country, the World Bank and other donors would cofinance the project with the GEF (which would use the Sustainable Fisheries Investment Fund) at a ratio of 3 to 1. For example, the World Bank might finance country-level investments in institutional strengthening and restructuring (using technical assistance loans), alternative income opportunities and community development in rural fishing communities (based on a community-driven development model) and monitoring, control and surveillance activities (through specific investment loans), while the GEF-led Sustainable Investment Fund financed the implementation of small-scale fisheries management systems and networks of effectively managed marine/coastal protected areas. The World Bank would also be responsible for the establishment of a multi-donor Global Forum and Trust Fund for Sustainable Fisheries, which would evolve from the current Trust Fund for Sustainable Fisheries funded by the Government of Japan. The Global Forum would be the vehicle for coordination of different donors at the LME and regional level. The Global Trust Fund would be a separate fund from the GEF Sustainable Fisheries Investment Fund, receive its funding from interested bilateral and multilateral donors, but not from the GEF. It would undertake the upstream analytical work to guide the investments under GEF and other bi-lateral and multi-lateral sources (including the Bank) such as preparation of fisheries sector notes and adjustment and investment operations at the national level complementing the ecosystems management focus supported by the GEF. FAO would provide the technical expertise in the preparation of the policy sector notes and the country-level adjustment or investment operations. In these it would be guided by the agreed upon principles for sustainable fisheries management as provided in the Code of Conduct and in UNCLOS. WWF would provide the technical and operational expertise to prepare and implement the proposal preparation process; to foster the development of coastal and marine protected area networks; to utilize its existing network with stakeholders in countries throughout the region, including the governments, non-governmental organizations, research institutions, and others to ensure effective stakeholder participation and implement country-level activities, within the possibilities of the Bank's procurement rules; and partner with the Global Forum and Trust Fund for Sustainable Fisheries to ensure that the ecosystem approach to living resources and habitat management is followed. Consistent with the Council-approved Danube/Black Sea Basin Partnership, a "Partnership" brief will be produced for Council approval containing the criteria for national subprojects, participation activities, and M & E requirements. Examples of several possible subprojects will be appended to the Council document. The proposal is for \$60 mil from GEF over a ten year period to be combined with at least \$205 million in cofinance. Only the first tranche of \$20 mil GEF is being sought in the Partnership brief in a first tranche to last 4 years with a minimum of \$70 mil in cofinance being mobilized.

#### Implementation Status

| PDF B Amount         | 670,000 US\$    |
|----------------------|-----------------|
| GEF Project<br>Grant | 5,073,260 US\$  |
| GEF Grant            | 5,743,260 US\$  |
| Cofinancing<br>Total | 75,000,000 US\$ |
| Project Cost         | 80,743,260 US\$ |
| GEF Agency           | 1,230,300 US\$  |

### **Project Documents**

Project Concept (Revised)

PDF-B Document

Executive Summary (Revised)

Project Document for WP (Revised)

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# Regional - Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa (Tranche 1, Installment 2)

| GEF Project ID              | 3559  |
|-----------------------------|---|
| IBRD PO ID                  | 104225  |
| Funding Source              | GEF Trust Fund  |
| Project Name                | Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa (Tranche 1, Installment 2) |
| Country                     | Regional (Africa)   |
| Region                      | Africa  |
| Focal Area                  | International Waters  |
| Operational<br>Program      |   |
| PIF Approval<br>Date        | February 13, 2008   |
| Approval Date               | April 24, 2008  |
| GEF Agency<br>Approval Date | July 19, 2007   |
| Project Status              | IA Approved   |
| GEF Agency                  | IBRD - The World Bank   |
| Executing<br>Agency         | African Union, United Nations Food & Agriculture Organization (FAO), World Wildlife Fund (WWF)  |
| Description                 |   |
| Implementation<br>Status    |   |
| GEF Project<br>Grant        | 5,600,000 US\$  |
| GEF Grant                   | 5,600,000 US\$  |
| Cofinancing<br>Total        | 121,640,000 US\$  |
| Project Cost                | 127,240,000 US\$  |
| GEF Agency<br>Fees          | 1,000,000 US\$  |
|                             | Project Documents   |
|                             | PIF Document (Revised)  |
|                             |   |

STAP Review

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# World Bank – Global Environment Facility Strategic Partnership for Nutrient Reduction in the Danube River and Black Sea

## Regional - Danube/Black Sea Basin Strategic Partnership on Nutrient Reduction, Tranche I

| GEF Project ID        | 1014  |
|-----------------------|---|
| IBRD PO ID            | 69053   |
| Funding Source        | GEF Trust Fund  |
| Project Name          | Danube/Black Sea Basin Strategic Partnership on Nutrient Reduction, Tranche I   |
| Country               | Regional (Bulgaria, Romania, Georgia, Turkey, Russian Federation, Ukraine, Czech<br>Republic, Slovak Republic, Hungary, Slovenia, Croatia, Moldova, Bosnia-Herzegovina,<br>Serbia)  |
| Region                | Europe and Central Asia   |
| Focal Area            | International Waters  |
| Operational Program   | 8; 10   |
| Approval Date         | May 11, 2001  |
| Project Status        | Council Approved  |
| GEF Agency            | IBRD - The World Bank   |
| Executing Agency      |   |
| Description           | This is Strategic Partnership consisting of capital investments, economic instruments, development and enforcement of environmental law and policy, strengthening of public participation, and monitoring of trends and compliance over the period of 2001-2007 for the countries of the Danube/Black Sea basin. The Partnership consists of three elements as follows: 1) a GEF Black Sea Regional capacity building and technical assistance element implemented (in cooperation with the Black Sea Commission under the leadership of UNDP and with the assistance of UNEP for defined components - two tranches; 2) a GEF Danube River basin regional capacity building and technical assistance element (in cooperation with the ICPDR) under the leadership of UNDP -two tranches; and 3) a GEF / World Bank Partnership Investment Fund for Nutrient Reduction focused on single country nutrient reduction investments - multiple tranches. |
| Implementation Status |   |
| Cofinancing Total     | 29,555,000 US\$   |
| Project Cost          | 29,555,000 US\$   |
| GEF Agency Fees       | 2,535,000 US\$  |
|                       | Project Documents   |
|                       | Project Document for WP   |
|                       | Project Appraisal Document (CEO Endorsement - Rev)  |
|                       | Project Document for WP (Annex 1, Part 1)   |
|                       | Project Document for WP (Annex 1, Part 2)   |
|                       | Project Document for WP (Annex 2, Part 1))  |
|                       |   |

Project Document for WP (Annex 2, Part 2) Project Document for WP (Annex 2, Part 3) Project Document for WP (Annex 3)

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# Regional - Danube/Black Sea Strategic Partnership - Nutrient Reduction Investment Fund: Tranche 2

| GEF Project ID           | 1661  |
|--------------------------|---|
| IBRD PO ID               | 69053   |
| Funding Source           | GEF Trust Fund  |
| Project Name             | Danube/Black Sea Strategic Partnership - Nutrient Reduction Investment Fund: Tranche 2  |
| Country                  | Regional (Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary,<br>Moldova, Russian Federation, Slovak Republic, Slovenia, Turkey, Ukraine, Romania)  |
| Region                   | Europe and Central Asia   |
| Focal Area               | International Waters  |
| Operational<br>Program   | 8   |
| Approval Date            | May 17, 2002  |
| Project Status           | Council Approved  |
| GEF Agency               | IBRD - The World Bank   |
| Executing<br>Agency      | Various   |
| Description              | 1. The GEF World Bank Investment Fund (IF) is the investment arm of the GEF Strategic Partnership<br>on the Black Sea/Danube Basin which also funds two regional projects, one in Black Sea littoral<br>countries and one in the Danube Basin, focusing on capacity building activities. The Fund<br>constitutes a proposed envelope of US\$70 million, to be approved by the GEF Council in several<br>tranches, to grant-finance investment projects in the Black Sea/Danube Basin that aim at nutrient<br>reduction. In May 2001, the GEF Council approved the first tranche of the Investment Fund, US\$20<br>million. Eligible sectors for investment under the Fund include advanced municipal and industrial<br>wastewater treatment, agricultural nutrient pollution control and wetland restoration. The<br>Investment Fund provides a focused regional framework for country level investments aimed at a<br>common goal of combating eutrophication in the Black Sea and allows for a streamlined approached<br>to project processing by the GEF. 2. This progress report on the Investment Fund accompanies the<br>application to the May 2002 GEF Council for a second tranche in the amount of US\$ 25 million.<br>Following the instructions in paragraph 20 of the Investment Fund Paper submitted to the GEF<br>Council in 2001, the report describes the project pipeline and the stage of development of each<br>project proposal, discusses progress to date on program leveraging targets, and addresses<br>cooperation and coordination of the Fund with the regional projects under the Partnership and other<br>key partners. The report also presents information on knowledge sharing activities, a website and<br>the Distance Learning Program for the Black Sea/Danube Basin initiated under the Investment<br>Fund. |
| Implementation<br>Status | Due to GEF funding constraint, the amount requested for the 2nd tranche has been reduced to \$16.0 million, which GEF Council approved on 5/15/2002.  |
| GEF Project<br>Grant     | 1,750,000 US\$  |
| GEF Grant                | 1,750,000 US\$  |
| Cofinancing<br>Total     | 74,800,000 US\$   |

Project Cost 76,550,000 US\$

GEF Agency Fees 2,000,000 US\$

# **Project Documents**

Project Document for WP (Revised)

Cover Letter from IA

Project Document for WP

PDF B

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# Regional - Strategic Partnership for Nutrient Reduction in the Danube River and Black Sea - World Bank-GEF Nutrient Reduction Investment Fund: Tranche 3

| GEF Project ID      | 2044  |
|---------------------|---|
| IBRD PO ID          | 69053   |
| Funding Source      | GEF Trust Fund  |
| Project Name        | Strategic Partnership for Nutrient Reduction in the Danube River and Black Sea - World Bank-GEF Nutrient Reduction Investment Fund: Tranche 3   |
| Country             | Regional (Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia,<br>Hungary, Moldova, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia,<br>Turkey, Ukraine) |
| Region              | Europe and Central Asia   |
| Focal Area          | International Waters  |
| Operational Program | 8   |
| Approval Date       | May 16, 2003  |
| Project Status      | Council Approved  |
| GEF Agency          | IBRD - The World Bank   |
| Executing Agency    |   |

| Description              | 1. The World Bank-GEF Investment Fund (IF) is the investment arm of the GEF Strategic Partnership on the Black Sea/Danube Basin which also funds two regional projects, the Black Sea Ecosystem Recovery Project for the Black Sea littoral countries and the Danube Regional Project in the Danube Basin, both focusing mainly on capacity building activities. The Fund constitutes a proposed envelope of US\$70 million, to be approved by the GEF Council in three tranches, to partially grant-finance investment projects in the Black Sea/Danube Basin that aim at nutrient reduction. In May 2001, the GEF Council approved the first tranche of the IF, US\$20 million. The second tranche of US\$16 million was approved by the Council in May 2002. Eligible areas of intervention for support under the Fund include investments to remediate and mitigate nutrient pollution in municipalities, industry and agriculture, as well as policy and legal reform and capacity building for enhanced monitoring and enforcement. The Investment Fund provides a focused regional framework for country level investments aimed at a common goal of combating eutrophication in the Black Sea and allows for a streamlined approach to project processing by the GEF. 2.This progress report has been prepared to request tranche 3 of the |
|--------------------------|--|
|                          | Investment Fund in the amount of US\$ 34 million. Following the instructions in paragraph 20 of the IF Project Brief endorsed by the GEF Council in 2001, the report describes the project pipeline and the stage of development of each project proposal, discusses progress to date on program leveraging targets, and addresses cooperation and coordination of the Fund with the regional projects under the Partnership and other key partners.   |
| Implementation<br>Status | Tranche 3 in the amount of US\$34.0 million was approved on May Council 2003.  |
| GEF Project Grant        | 2,918,000 US\$   |
| GEF Grant                | 2,918,000 US\$   |
| Cofinancing Total        | 222,182,000 US\$   |
| Project Cost             | 225,100,000 US\$   |
| GEF Agency Fees          | 3,400,000 US\$   |
|                          | Project Documents  |
|                          | Executive Summary  |
|                          | Project Document for WP  |

# Regional - Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin-Phase I Project Short Title:Danube Regional Project Phase 1

| GEF Project ID      | 1460  |
|---------------------|---|
| UNDP PMIS ID        | 2184  |
| Funding Source      | GEF Trust Fund  |
| Project Name        | Strengthening the Implementation Capacities for Nutrient Reduction and<br>Transboundary Cooperation in the Danube River Basin-Phase I Project Short<br>Title: Danube Regional Project Phase 1 |
| Country             | Regional (Bosnia-Herzegovina, Bulgaria, Czech Republic, Croatia, Hungary, Moldova, Romania, Slovenia, Slovak Republic, Ukraine, Serbia)   |
| Region              | Europe and Central Asia   |
| Focal Area          | International Waters  |
| Operational Program | 8   |

| PDF-B Approval Date              | January 07, 2000  |
|----------------------------------|---|
| Approval Date                    | May 09, 2001  |
| CEO Endorsement Date             | September 26, 2001  |
| GEF Agency Approval Date         | November 26, 2001   |
| Project Status                   | IA Approved   |
| GEF Agency                       | UNDP - United Nations Development Programme   |
| Executing Agency                 | UNOPS in cooperation with ICPDR   |
| Description                      | The overall objective of this project is to complement and support the activities of the Danube Commission (ICPDR) required to provide a regioanl approach to the development of national policies and legislation and to define priority actions for nutrient reduction and pollution control, with particular attention to transboundary effects within the Danube Basin and the Black Sea. The full project would address the following immediate objectives: (i) development of policies, legal instruments and measures for nutrient reduction as well as for exacting compliance; (ii) institutional strengthening and capacity building; (iii) awareness raising and reinforcement of NGO participation; (iv) development of transboundary strategies and concepts related to nutrient reduction and pollution control; (v) provide the framework for the dissemination and replication of successful demonstration activities in the region. Preparatory work will be needed in order to set up national inter-ministerial coordination mechanisms, assess existing national policies, develop a preliminary system of ecosystem indicators(IW M & E indicators), as well as for other complementary activities. Project was submitted for consideration to the Fall, 2000 Council meeting, but funding limitations prevented inclusion in work program. It was restructured into a phased project, for which Phase I is submitted for Spring 2001 as part of the Danube/Black Sea Strategic Partnership. |
| Implementation Status            | In the period April – June 2005 the last project component on Recommendations for the reduction of phosphorus in detergents was under implementation. The operational close of the whole project (phase 1) is expected in the last quarter 2005.  |
| PDF B Amount                     | 350,000 US\$  |
| GEF Project Grant                | 5,000,000 US\$  |
| GEF Grant                        | 5,350,000 US\$  |
| Cofinancing Total                | 6,600,000 US\$  |
| Project Cost                     | 11,950,000 US\$   |
| GEF Agency Fees                  |   |
| GEF Project Grant (CEO<br>Endo.) | 5,000,000 US\$  |
| Cofinancing Total (CEO Endo.)    | 6,600,000 US\$  |
| Project Cost (CEO Endo.)         | 11,950,000 US\$   |
| GEF Agency Fees (CEO Endo.)      |   |
|                                  | Project Documents   |
|                                  | Project Appraisal Document (for CEO Endorsement)  |

Project Brief

PDF B

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# Regional - Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin (Tranche 2)

| GEF Project ID                   | 2042  |
|----------------------------------|---|
| UNDP PMIS ID                     | 3123  |
| Funding Source                   | GEF Trust Fund  |
| Project Name                     | Strengthening the Implementation Capacities for Nutrient Reduction and<br>Transboundary Cooperation in the Danube River Basin (Tranche 2)   |
| Country                          | Regional (Bosnia-Herzegovina, Bulgaria, Czech Republic, Croatia, Hungary, Moldova, Romania, Slovenia, Slovak Republic, Ukraine, Serbia)   |
| Region                           | Europe and Central Asia   |
| Focal Area                       | International Waters  |
| Operational Program              | 8   |
| Approval Date                    | May 16, 2003  |
| CEO Endorsement Date             | March 22, 2004  |
| GEF Agency Approval Date         | May 21, 2004  |
| Project Status                   | IA Approved   |
| GEF Agency                       | UNDP - United Nations Development Programme   |
| Executing Agency                 | UNOPS (in cooperation with ICPDR)   |
| Description                      | The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the DRB and the Black Sea area. Taking into account the basic orientations of the Danube/Black Sea Basin Programmatic Approach, the Danube Regional Project, in its Phases 1 and 2, shall facilitate implementation of the Danube River Protection Convention in providing a framework for coordination, dissemination and replication of successful demonstration that will be developed through investment projects (World Bank-GEF Strategic Partnership, EBRD, EU programmes for accession countries etc.). Specific objective of Phase 2 of the Project, December 2003 - November 2006, is to set up institutional and legal instruments at the national and regional level to assure nutrient reduction and sustainable management of water bodies and ecological resources, involving all stakeholders and building up adequate monitoring and information systems. |
| Implementation Status            |   |
| GEF Project Grant                | 12,000,000 US\$   |
| GEF Grant                        | 12,000,000 US\$   |
| Cofinancing Total                | 12,878,000 US\$   |
| Project Cost                     | 24,878,000 US\$   |
| GEF Agency Fees                  | 506,510 US\$  |
| GEF Project Grant (CEO<br>Endo.) | 12,240,000 US\$   |
| Cofinancing Total (CEO Endo.)    | 12,878,000 US\$   |
| Project Cost (CEO Endo.)         | 25,118,000 US\$   |
| GEF Agency Fees (CEO Endo.)      |   |
|                                  | Project Documents   |

Executive Summary Final

Project Document for WP

| Annexes 1-5 Final  |
|--|
| Annexes 6-10 Final                                       |
| Annex 11a Final  |
| Annex 11b Final  |
| Annex 12a Final  |
| Annex 12b Final  |
| Annex 12c Final  |
| Annex 14-15 Final  |
| Endorsement Letters fr Governments                       |
| Project Appraisal Document (CEO Endorsement - Rev)       |
| PAD for CEO Endorsement-Annx 1-5                         |
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# World Bank – Global Environment Facility Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership

Regional - World Bank-GEF Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership, Tranche 1, 1st Allocation

| GEF Project ID         | 2601   |
|------------------------|--|
| IBRD PO ID             | 97216  |
| Funding Source         | GEF Trust Fund   |
| Project Name           | World Bank-GEF Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership, Tranche 1, 1st Allocation                           |
| Country                | Regional (Albania, Bosnia-Herzegovina, Bulgaria, Algeria, Egypt, Croatia, Lebanon, Libya, Morocco,<br>Macedonia, Syria, Tunisia, Turkey, Serbia) |
| Region                 | Regional   |
| Focal Area             | Multi Focal Area   |
| Operational<br>Program | 9; 2   |
| Pipeline Entry<br>Date | December 21, 2004  |
| Approval Date          | August 28, 2006  |
| Project Status         | Council Approved   |
| GEF Agency             | IBRD - The World Bank  |
| Executing<br>Agency    | UNEP/MAP   |

Description The main objective of the proposed World Bank-GEF Investment Fund for Pollution Reduction in the Mediterranean Sea is to facilitate the recipient countries of the Mediterranean Sea basin in implementing their top transboundary priority pollution reduction and habitat protection measures and contribute to reversing the degradation of this large marine ecosystem and its freshwater basins. The Investment Fund – supported by the GEF with US\$ 60-70 million grant financing over multiple tranches and open to other donors' contributions – is proposed as a vehicle for catalyzing investments and accelerate urgent actions that are necessary for reducing pollution of the Mediterranean Sea, and the Adriatic Sea in particular. Through the Investment Fund, basin countries can pursue investments aimed at common transboundary pollution reduction and ecosystem conservation goals, and help jump start and further accelerate investments in sectors that are key for environmental improvement as well as social and economic development. The Investment Fund, through a combination of capital investments, economic instruments, policy and regulatory frameworks and public participation will provide a critical mass of financial resources and technical knowledge readily available to countries that embrace the goal of improving the environmental conditions of the Mediterranean Sea. It will also develop a strategic regional approach to investments for greater benefit to the basin countries.

#### Implementation Status

| orarao               |                 |
|----------------------|-----------------|
| GEF Project<br>Grant | 6,055,000 US\$  |
| GEF Grant            | 6,055,000 US\$  |
| Cofinancing<br>Total | 90,000,000 US\$ |
| Project Cost         | 96,055,000 US\$ |
| GEF Agency<br>Fees   | 900,000 US\$    |

### **Project Documents**

Project Concept (Revised)

Endorsement Letter from Government

Executive Summary (Revised)

Project Document for WP (Revised)

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### Regional - World Bank-GEF Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership, Tranche 1, 2nd Installment

| GEF Project ID         | 3229  |
|------------------------|---|
| IBRD PO ID             | 97216   |
| Funding Source         | GEF Trust Fund  |
| Project Name           | World Bank-GEF Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership,<br>Tranche 1, 2nd Installment                    |
| Country                | Regional (Albania, Algeria, Bosnia-Herzegovina, Bulgaria, Croatia, Egypt, Macedonia, Lebanon, Libya, Morocco, Serbia, Syria, Tunisia, Turkey) |
| Region                 | Regional  |
| Focal Area             | International Waters  |
| Operational<br>Program | 9; 2  |
| Strategic<br>Program   | IW-2  |

| Pipeline Entry<br>Date   | December 21, 2004   |
|--------------------------|---|
| Approval Date            | June 14, 2007   |
| Project Status           | Council Approved  |
| GEF Agency               | IBRD - The World Bank   |
| Executing<br>Agency      |   |
| Description              | The main objective of the proposed World Bank-GEF Investment Fund for Pollution Reduction in the Mediterranean Sea is to facilitate the recipient countries of the Mediterranean Sea basin in implementing their top transboundary priority pollution reduction and habitat protection measures and contribute to reversing the degradation of this large marine ecosystem and its freshwater basins. The Investment Fund – supported by the GEF with US\$ 60-70 million grant financing over multiple tranches and open to other donors' contributions – is proposed as a vehicle for catalyzing investments and accelerate urgent actions that are necessary for reducing pollution of the Mediterranean Sea, and the Adriatic Sea in particular. Through the Investment Fund, basin countries can pursue investments aimed at common transboundary pollution reduction and ecosystem conservation goals, and help jump start and further accelerate investments. The Investment Fund, through a combination of capital investments, policy and regulatory frameworks and public participation will provide a critical mass of financial resources and technical knowledge readily available to countries that embrace the goal of improving the environmental conditions of the Mediterranean Sea. It will also develop a strategic regional approach to investments for greater benefit to the basin countries. |
| Implementation<br>Status |   |
| GEF Project<br>Grant     | 15,000,000 US\$   |
| GEF Grant                | 15,000,000 US\$   |
| Cofinancing<br>Total     | 45,000,000 US\$   |
| Project Cost             | 60,000,000 US\$   |
| GEF Agency<br>Fees       | 1,350,000 US\$  |
|                          | Project Documents   |
|                          | Project Document for WP (Revised)   |

Executive Summary (Revised)

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# Regional - Strategic Partnership for the Mediterranean Large Marine Ecosystem-Regional Component: Implementation of Agreed Actions for the Protection of the Environmental Resources of the Mediterranean Sea and Its Coastal Areas

| GEF Project ID | 2600   |
|----------------|--|
| Funding Source | GEF Trust Fund   |
| Project Name   | Strategic Partnership for the Mediterranean Large Marine Ecosystem-Regional Component: Implementation of Agreed Actions for the Protection of the Environmental Resources of the Mediterranean Sea and Its Coastal Areas |
| Country        | Regional (Albania, Bosnia-Herzegovina, Algeria, Egypt, Croatia, Lebanon, Libya, Morocco, Syria, Tunisia,<br>Turkey, Serbia)  |
|                |  |

| Region                      | Regional   |
|-----------------------------|--|
| Focal Area                  | Multi Focal Area                                     |
| Operational<br>Program      | 9; 2; 14   |
| Strategic<br>Program        | IW-2; POPS-2; POPS-3                                 |
| Pipeline Entry<br>Date      | December 21, 2004                                    |
| PDF-B Approval<br>Date      | October 03, 2005                                     |
| Approval Date               | June 14, 2007  |
| CEO<br>Endorsement<br>Date  | April 09, 2008                                       |
| GEF Agency<br>Approval Date | November 14, 2008                                    |
| Project Status              | IA Approved  |
| GEF Agency                  | UNEP/UNIDO   |
| Executing<br>Agency         | UNEP/MAP FAO, UNESCO, UNIDO, ICS-UNIDO, METAP/WB/WWF |
|                             |  |

Description Background - In 1997 UNEP-MAP with the financial support of GEF, initiated a comprehensive regional effort aimed at identifying and accelerating the key reforms and investments necessary to reverse negative trends threatening the Mediterranean Sea Ecosystem, and move towards sustainability. In little over 6 years, a full Transboundary Diagnostic Analysis for the Mediterranean Sea (TDA-MED) was prepared and agreed upon by the Contracting Parties to the Barcelona Convention, followed by the adoption of two Strategic Action Programs (SAPs) to address main transboundary concerns: land based pollution (SAP MED), and loss of biodiversity (SAP BIO). As a consequence, the Mediterranean countries (Trieste, Oct. 2004) agreed on a collective effort for the protection of the environmental resources of the Mediterranean, the Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem, led by UNEP and the World Bank, co-funded by the GEF and involving other relevant agencies, IFIs and bilateral and multilateral donors. The Partnership will serve as a catalyst in leveraging policy/legal/institutional reforms as well as additional investments for reversing degradation of the Mediterranean Sea Basin, with its coastal habitats and marine living resources. The Strategic Partnership, following the model of the GEF Black Sea Basin Strategic Partnership for Nutrient Reduction, consists of two complementary components: -a Regional Component: "Implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas" led by UNEP, and the object of the present proposal, and -a "Partnership Investment Fund for the Mediterranean Sea Large Marine Ecosystem" led by the World Bank and already approved by the GEF Council in August 2006. The Partnership will stimulate and further enhance the implementation at the Mediterranean level of Global Conventions and initiatives such as the CBD, the Stockholm Convention, and GPA, Regional Conventions and instruments such as the Barcelona Convention and the Mediterranean Action Plan as well as the SAPs, NAPs, and POPs NIPs in individual countries. The main objectives of the proposed project (Regional Component) are (i) to ensure, in concert with the World Bank, the overall coordination of the Strategic Partnership; (ii) to facilitate harmonized policy, legal and institutional reforms aimed at reversing degradation trends with focus on land based pollution - particularly nutrients and PCBs, fisheries and coastal habitats, in accordance with priorities agreed by the countries in the SAP MED and SAP BIO and to prepare the ground for the future implementation of the ICZM Protocol; (iii) to promote the regional dissemination and replication of new approaches including those implemented/demonstrated under the Partnership Investment Fund Component (World Bank); (iv) to monitor the progress of the Strategic Partnership as a whole, the effectiveness of the stress reduction measures being promoted, and to establish the harmonized monitoring of the "environmental status" of the Mediterranean Sea; and (v) to contribute to the implementation of the Stockholm NIPs through a harmonised approach to managing PCBs in five of the participating countries that meets the requirements of the Stockholm, Barcelona, and Basel conventions. Summary Recommendation - The IW program manager, having reviewed the documentation provided, including the numerous relevant annexes, observes the following: (i) The proposal adequately addresses all recommendations and comments made in previous reviews. (ii) The proposed project fits GEF4 IW Strategic Objective 1, and IW GEF4 Strategic Program 2 (nutrients), with elements relating to 1 (fisheries), and 3 (water use conflicts). The project also fits POPs Strategic Program 1 (Capacity building for NIP implementation) and POPs Strategic Program 2 (Investments for NIP implementation). (iii) The proposed project shows several strong points that are worth mentioning: •Co-financing, which approaches a 1:2.5 ratio, most of it secured, including \$14m in cash; •the full participation of northern littoral countries (Spain, France, Italy) to project activities, and funding: •the well defined set of results indicators (Process and Stress Reduction - Annex E); •the innovative and comprehensive Replication Strategy, linked with strong Communication and Coordination components (Annex F); •the integrated nature of the

proposed approach (interlinked basin, coastal, and marine ecosystem management and interventions) and the joining of forces of focal areas (IW and POPs) around common priorities. (iv) The budget reflects recent GEFSEC guidance on management costs, travels and other items. Based on the above, the program manager would recommend CEO approval of Work Program Entry, following submission and review of a revised document responding to the recommendations listed below: - Exec. Summary Point 4.1: include Spain among donors and members of the Steering Committee; - Include under the responsibility of the PMU the following activity: to identify a set of environmental status indicators reflecting SAP targets and agreements, and to promote in the countries, with the support of MAP, the harmonized monitoring of these indicators well beyond the project's life. The proposed set of indicators and monitoring procedures will be presented to the Steering Committee during the Inception Meeting. - Check the total figure for cofinancing (which should be \$23,723,200). - Ensure that project will have a website according to IW LEARN criteria, and that it will participate to IW LEARN initiatives, including biannual conferences. - Adequately respond to all issues on the POPs part of the project raised under the General Comments section.

| Implementation<br>Status            | UNIDO Approval date = 16 April 2008 |
|-------------------------------------|-------------------------------------|
| PDF B Amount                        | 700,000 US\$                        |
| GEF Project<br>Grant                | 12,891,000 US\$                     |
| GEF Grant                           | 13,591,000 US\$                     |
| Cofinancing<br>Total                | 29,607,200 US\$                     |
| Project Cost                        | 43,198,200 US\$                     |
| GEF Agency<br>Fees                  | 1,233,190 US\$                      |
| GEF Project<br>Grant (CEO<br>Endo.) | 12,891,000 US\$                     |
| Cofinancing<br>Total (CEO<br>Endo.) | 36,548,200 US\$                     |
| Project Cost<br>(CEO Endo.)         | 50,139,200 US\$                     |
| GEF Agency<br>Fees (CEO             | 1,233,190 US\$                      |

### **Project Documents**

Project Concept (Revised)

PDF-B Document

Executive Summary (Revised)

Project Document for WP (Revised)

Annexes

Endo.)

**Budget** 

Project Appraisal Document (for CEO Endorsement)

Request for CEO Endorsement

Annexes A-C

Project Appraisal Document (for CEO Endorsement)

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# PART III SELECTED LARGE MARINE ECOSYSTEM REFERENCES

The GEF supported LME projects are based on 26 years of basic and applied science studies focused on patterns, processes and yields of the LMEs as natural ecological systems amenable to multi-sectoral management practices for sustaining marine goods and services.

During the 2007 celebration of the National Oceanic and Atmospheric Administration's (NOAA's) 200 years of ocean sciences, the Large Marine Ecosystem (LME) concept was selected as one of NOAA's notable breakthroughs, <a href="http://celebrating200years">http://celebrating200years</a> .
.noaa.gov/ . In December 2009, the White House Council on Environmental quality stated in their Interim Framework for Effective Coastal and Marine Spatial Planning Report that the Large Marine Ecosystem will be used as the base unit of scale for ecosystem management for the coastal United States and the Great Lakes, <a href="http://www.whitehouse.gov/administration/eop/ceq/initiatives/oceans/interim-framework">http://www.whitehouse.gov/administration/eop/ceq/initiatives/oceans/interim-framework</a> .
NOAA has been partnering with five United Nation Agencies (UNEP, UNDP, UNIDO, IOC-UNESCO, FAO), two non-governmental organizations (IUCN, WWF) and a financial institution, the Global Environment Facility (GEF) in assisting developing countries to introduce a five module approach to the assessment and management of LMEs adjacent to their coasts.

The LME global movement toward improved ecosystem based assessment and management practices is supported by peer-reviewed studies published in 14 LME volumes, an active website with posted IOC-UNESCO LME Consultative Committee reports, instructive DVDs and CDs, journal articles, and published global-scale LME analyses.

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| 1998 | 1998 Sherman, K., E. N. Okemwa and M. J. Ntiba, eds. Large Marine Ecosystems of the Indian   |   |  |
| Vol. | Ocean: Assessment, Sustainability, and Management. Blackwell Science. Cambridge,   |   |  |
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| 1999<br>Vol. | Sherman, K. and Qisheng Tang, eds. Large Marine Ecosystems of the Pacific Rim:<br>Assessment, Sustainability, and Management. Blackwell Science. Cambridge,       |  |
|--------------|---|--|
| 8            | Massachusetts. 465p.  |  |
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| 1999<br>Vol.<br>9 | Kumpf, H., K. Steidinger and K. Sherman, eds. The Gulf of Mexico Large Marine<br>Ecosystem: Assessment, Sustainability, and Management. Blackwell Science.<br>Cambridge, Massachusetts, 704p.                            |   |
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| 2002       | Sherman, K. and H. R. Skjoldal, eds. Large Marine Ecosystems of the North Atlantic:   |   |
| Vol.<br>10 | <b>Changing States and Sustainability.</b> Large Marine Ecosystems Series. Elsevier Science, The Netherlands. 449p.   |   |
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|------|--|-------------------------------|
| 2003 | Hempel, G. and K. Sherman, eds. Large Marine Ecosystems of the World: Trends in            |                               |
| Vol. | Exploitation, Protection, and Research, Large Marine Ecosystem Series, Elsevier Science,   |                               |
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|      | Part II Unwelling Current I MEs  | C. M. Duskulov                |
|      | at the opworing current Livits   | D I luch Poldo D P I luch     |
|      | 9. Interannual variability impacts on the California Current large marine ecosystem        | D. Liuch-Belua, D. B. Liuch-  |
|      |  | Cota and S. E. Lluch-Cota     |
|      | 10. Sustainability of the Benguela: ex Africa semper aliquid novi                          | V. Shannon and M. O'Toole     |
|      | 11. Decadal environmental and ecological changes in the Canary Current large marine        | C. Roy and P. Cury            |
|      | ecosystem and adjacent waters: Patterns of connections and teleconnection                  |                               |
|      |  | M. Wolff, C. Wosnitza-        |
|      | 12. The Humboldt Current: Trends in exploitation, protection and research                  | Mendo and J. Mendo            |
|      | Part III. Tropical LMEs  |                               |
|      | 13. The Great Barrier Reef: 25 years of management as a large marine ecosystem             | J. Brodie                     |
|      | 14. Development of fisheries in the Gulf of Thailand large marine ecosystem: Analysis of   | D. Pauly and R.               |
|      | an unplanned experiment  | Chuennagdee                   |
|      | 15 A raview and readefinition of the large marine accessitems of Brazil                    | W Ekau and B Knoppers         |
|      | The Areview and re-definition of the large mannee cosystems of Brazil                      | W. Ekau and B.Knoppers        |
|      | <b>Fart IV.</b> Mapping Natural Ocean Regions and LMES                                     |                               |
|      |  | R. Watson, D. Pauly,          |
|      | 16 Manning fishering anto maring approximation for maximal appendix and algorithms         | V. Christensen, R. Froese,    |
|      | 16. Mapping fisheries onto marine ecosystems for regional, oceanic and global integrations | A. Longhurst, T. Platt,       |
|      |  | S. Sathyendranath,            |
|      |  | K. Sherman, J. O'Reilly and   |
|      |  | P. Celone                     |
|      | Part V. Synopsis   |                               |
|      | 17 Synoptical Notes  | G Hempel                      |
| 2005 | Hennessey, T.M. and I.G. Sutinen, eds. Sustaining Large Marine Feasystems: The             | 0.110                         |
| Vol  | Human Dimension Large Marine Ecosystem Series Elsevier Science The                         |                               |
| 12   | National and S71n  |                               |
| 15   |  |                               |
|      | Part I. Large Marine Ecosystems, social science theory and LME management methodology      |                               |
|      | 1. Large marine ecosystem approach for assessment and management of ocean coastal          | K. Sherman                    |
|      | waters   |                               |
|      | 2. The human dimension in ecosystem management: Institutional performance and the Sea      | R. Baird                      |
|      | Grant paradigm   |                               |
|      | 3. Assessing and monitoring the human dimensions of LMEs—A framework                       | J. Sutinen et al.             |
|      | 4. Governance profiles and the management of the uses of LMEs                              | L. Juda and T. Hennessev      |
|      | 5 A total capital approach to management of large marine ecosystems: Case studies of two   | C Dver and I Poggie           |
|      | natural resource disasters   | C. Dyer and 5. I offic        |
|      | Our arbitraries of multi-attribute fishery recourses in large marine ecosystems            | S Edwards                     |
|      | b. Ownership of multi-autout the cost of ownership   | 5. Edwards                    |
|      | <b>ratific</b> Economic activity and the cost of ownership                                 |                               |
|      | /. Economic activity associated with the Northeast Shelf large marine ecosystem:           | P. Hoagland, D. Jin, E.       |
|      | Application of an input-output approach  | Thunberg, and S. Steinback    |
|      | 8. Portfolio management of fish communities in large marine ecosystems                     | S. Edwards, J. Link and B     |
|      |  | Rountree                      |
|      | 9. Fish habitat: A valuable ecosystem asset  | H. Upton and J. Sutinen       |
|      | 10. The economic values of Atlantic herring in the Northeast Shelf large marine ecosystem  | J.H. Cho, J. Gates, P. Logan. |
|      | 5 5 5  |                               |

|                    | <ol> <li>Eutrophication in the Northeast Shelf large marine ecosystem: Linking hydrodynamic<br/>and economic models for benefit estimation</li> <li>Valuing large marine ecosystem fishery losses because of disposal of sediments: A case<br/>study</li> <li>Emergence of a science policy-based approach to ecosystem-oriented management of<br/>large marine ecosystems.</li> </ol> | A. Kitts, and M. Soboil<br>T. Grigalunas, J. Opaluch, J.<br>Diamantides and D-S. Woo<br>T. Grigalunas, J. Opaluch,<br>M. Luo<br>F. Gable   |
|--------------------|--|--|
|                    | <ul> <li>14. Applications of the large marine ecosystem approach toward World Summit targets</li> <li>15. The evolution of LME management regimes: The role of adaptive governance</li> <li>16. An evaluation of the modular approach to the assessment and management of large marine ecosystems</li> </ul>   | A. Duda and K. Sherman<br>T. Hennessey<br>H. Wang  |
|                    | Conclusion   | T. Hennessey   |
| 2006<br>Vol.<br>14 | Shannon, V., G. Hempel, P Melanotte-Rizzoli, C. Moloney and J. Woods, eds. <b>Benguela: Predicting a Large Marine Ecosystem.</b> Elsevier Science. 410p.   |  |
|                    | Foreword<br>Part I: By Way of Introduction   | M. O'Toole   |
|                    | <ol> <li>A plan comes together</li> <li>Forecasting within the context of large marine ecosystems programs</li> <li>The Global Ocean Observing System for Africa (GOOS-Africa)</li> <li>Part II: Setting the Scene – Data, time series and models: what we think we know about variability in the Benguela and comparable systems</li> </ol>   | V. Shannon<br>K. Sherman<br>J. Ahanhanzo   |
|                    | <ol> <li>Large-scale physical variability of the Benguela Current large marine ecosystem<br/>(BCLME)</li> </ol>  | F.A. Shillington, CJC<br>Reason, C.M. Duncombe<br>Rae, P. Florenchie, and P.<br>Benven   |
|                    | <ol> <li>Low oxygen water (LOW) variability in the Benguela System: Key Processes and<br/>forcing scales relevant to forecasting</li> <li>Variability of plankton with reference to fish variability in the Benguela Current large<br/>marine ecosystem—An overview</li> </ol>   | P.M.S. Monteiro and A.K<br>van der Plas<br>L. Hutchings, H.M. Verheye,<br>J.A. Huggett, H. Demarcq, r.<br>Cloete, R.G. Barlow, D.<br>Louw, A. da Silva   |
|                    | 7. The variability and potential for prediction of harmful algal blooms in the southern Benguela ecosystem   | G.C. Pitcher and S.J. Weeks  |
|                    | <ol> <li>Resource and ecosystem variability, including regime shifts, in the Benguela Current<br/>System</li> </ol>  | C.D. van der Lingen, L.J.<br>Shannon, P. Cury, A.<br>Kreiner, C.L. Moloney, J-P<br>Roux and F.Vaz-Velho  |
|                    | 9. Variability and change in comparable systems—Lessons learned  | P. Fréon, J. Alheit, E.D.<br>Barton, S. Kifani, P.<br>Marchesiello   |
|                    | Part III. Forecasting in the Benguela: Our collective wisdom   |  |
|                    | 10. Influences of large scale climate modes and Agulhas System variability on the BCLME region   | C.J.C. Reason, P. Florenchie,<br>M. Rouault, J. Veitch   |
|                    | 11. Developing a basis for detecting and predicting long-term ecosystem changes  | A. Jarre, C.L. Moloney, L.J.<br>Shannon, P. Fréon, C.D. van<br>der Lingen, HM. Verheye,<br>L. Hutchings, JP. Roux, P.<br>Cury  |
|                    | <ul><li>12. The requirements for forecasting harmful algal blooms</li><li>13. Low Oxygen Water (LOW) forcing scales amenable to forecasting in the Benguela ecosystem</li></ul>  | Bernard<br>Monteiro, P.M.S <sup>1, 2</sup> ., van der<br>Plas, A.K. <sup>3</sup> , Bailey, G.W. <sup>4</sup> ,<br>Mallanote - Rizzoli, P. <sup>5</sup> ,<br>Duncombe Rae, C.M. <sup>4</sup> ,<br>Byrnes, D. <sup>6</sup> , Pitcher, G. <sup>4</sup> ,<br>Florenchie, P. <sup>2</sup> , Penven, P. <sup>2</sup> ,<br>Fitzpatrick, J. <sup>7</sup> , Lass, H.U. <sup>8</sup> , |

#### Part IV TheWay Ahead

14. Forecasting shelf processes of relevance to living marine resources in the BCLME

15. Environmental requirements of maritime operations in the Benguela coastal ocean

16. Towards a future integrated forecasting system

17. Forecasting a Large Marine Ecosystem

Accompanying CD containing relevant explanatory information about the Benguela Forcasting Workshop as well as texts of selected contributed and invited papers presented during the Specialist Sessions and at the Closing Ceremony, plus relevant model outputs/ animations and color diagrams are included .

CD van der Lingen, P. Fréon, L. Hutchings, C. Roy, G. Bailey, C. Bartholomae, A.C. Cockcroft, J.G. Field, K.R. Peard, and A. van der Plas M. Grundlingh, P. Morant, R. van Ballegooyen, A. Badenhorst, E. Gomes, L. Greyling, J. Guddal, I. Hunter, D. Japp, L. Maartens, K. Peard, G. Smith, C. Wainman G. Bundrit et al. J. Woods

#### ON THE WEB AT THE LME PROGRAM WEBSITE www.lme.noaa.gov

**Books** Downloadable from www.lme.noaa.gov or request books on CDs from Kenneth.Sherman@noaa.gov at the LME Program Office

#### UNEP LME Report (xviii + 852pp)

Sherman K, Hempel G, eds. 2008. The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world's Regional Seas, UNEP Regional Seas Report and Studies No. 182. Nairobi, Kenya: UNEP. 872 p.

**IUCN Sustaining the World's Large Marine Ecosystems (viii + 142pp)** Sherman K, M.C. Aquarone, S. Adams, eds. 2009. Sustaining the World's Large Marine Ecosystems. International Union for Conservation of Nature and Natural Resources (IUCN). Printed in China. 150 p.

**<u>Reports</u>** IOC-UNESCO–LME Consultative Meetings (1997-2009) Nos. 1-11, online at:

http://unesdoc.unesco.org/ulis/ orhttp://www.lme.noaa.gov

**DVDs** Download from <u>www.lme.noaa.gov</u> or request DVD's on disks from Kenneth.Sherman@noaa.gov at the LME Program Office

"Turning the Tide" "Africa on the Cutting Edge"

#### Key Journal Articles

Sherman K, Belkin I, Friedland KD, O'Reilly J, Hyde K. 2009. Accelerated warming and emergent trends in fisheries biomass yields of the world's large marine ecosystems. Ambio 38(4):215-224.
Sherman K. 2006. The large marine ecosystem network approach to WSSD targets. Ocean and Coastal Management 49:640-648.
Sherman K, Sissenwine M, Christensen V, Duda AM, Hempel G, Ibe C, Levin S, Lluch-Belda D, Matishov G, McGlade J and others. 2005. A global movement toward an ecosystem approach to marine resources management. Marine Ecology Progress Series 300(Theme Section: Politics and socio-economics of ecosystem-based management of marine resources):275-279.

Duda AM, Sherman K. 2002. A new imperative for improving management of large marine ecosystems. Ocean and Coastal Management 45(2002):797-833.

# SELECTED PUBLISHED GLOBAL-SCALE ANALYSES, BASED ON LME ASSESSMENTS

- Christensen V, Walters CJ, Ahrens R, Alder J, Buszowski J, Christensen LB, Cheung WWL, Dunne J, Froese R, Karpouzi V and others. 2009. Database-driven models of the world's Large Marine Ecosystems. Ecological Modelling 220:1984-1996.
- Costello C, Gaines SD, Lynham J. 2008. Can catch shares prevent fisheries collapse? Science 321(19 September 2008):1678-1681.
- Essington TE, Beaudreau AH, Wiedenmann J. 2006. Fishing through marine food webs. PNAS 103(9):3171-3175.
- Fisher, J. A. D., K. T. Frank, et al. (2010). "Global variation in marine fish body size and its role in biodiversity--ecosystem functioning." <u>Marine Ecology Progress Series</u> **405**: 1-13.
- Hoagland P, Jin D. 2008. Accounting for marine economic activities in large marine ecosystems. Ocean & Coastal Management 51(3):246-258.
- Juda L, Hennessey T. 2001. Governance profiles and the management of the uses of large marine ecosystems. Ocean Development and International Law 32:41-67.
- Wang H. 2004. An evaluation of the modular approach to the assessment and management of large marine ecosystems. Ocean Development and International Law 35:267-286.
- Worm B, Hilborn R, Baum JK, Branch TA, Collie JS, Costello C, Fogarty MJ, Fulton EA, Hutchings JA, Jennings S and others. 2009. Rebuilding Global Fisheries. Science 325(31 July 2009):578-585.
- Worm B, Barbier EB, Beaumont N, Duffy JE, Folke C, Halpern BS, Jackson JBC, Lotze HK, Micheli F, Palumbi SR and others. 2006. Impacts of biodiversity loss on ocean ecosystem services. Science 314(5800):787-790.

# PART IV THE LME PROJECT FINANCIAL SUPPORT TABLE

Following a relatively modest grant of \$6 million in 1994 to convert an end-of-thepipe solution project by six countries in West Africa (Benin, Cameroon, Cote d'Ivoire, Ghana, Nigeria and Togo) to a five-module LME assessment and management pilot project, the scope of application of the LME approach has grown to a \$3.1 billion global activity in 2010, supporting the efforts of over 100 developing nations to recover and sustain degraded LMEs. These funds are being applied to reverse the downward spiral of coastal and marine resource degradation and support an upward spiral led by developing nations to put into practice management actions for moving the world's LMEs from a generally poor state of health to an improved healthy condition by protecting and growing the goods and services from LMEs that contribute an estimated \$12.6 trillion annually to the world economy. A detailed listing of projects and financial support for carrying them forward is given in the LME financial support table.

# The LME Project Financial Support Table

The following table summarizes financial information from the GEF Project Database. Large Marine Ecosystem projects are listed in <u>Column 1</u>. The Agulhas Current LME and Somali Current LME share one project--ASCLMEs. The Gulf of Thailand LME and South China Sea LME also share one project. The second part of the table lists LME and ICM linked **Strategic Partnership Projects** and **World-Bank-GEF Investment Fund (IF)** projects.

<u>Column 2</u> contains the GEF Project identification (ID) numbers, for use when navigating the GEF Project Database to find project details or project documents. <u>Column 3</u> lists the project titles. <u>Column 4</u> gives implementing or executing agencies for the projects.

For each project, the GEF Grant amount is given in **Column 5** in millions. Co-financing is given in **Column 6** in millions, and refers to a total from several donors and institutions, including inkind contributions. **Column 7** totals columns 5 and 6.

**Column 8** on Status refers to the level of approval so far achieved by the project. The several terms are listed under Project Cycle in glossary here. **Column 9** contains focal areas and Operational Program numbers.

#### <u>Glossary</u>

**Executing agency -** "Executing Agencies" contribute to the management and execution of GEF Projects. In 1999, the GEF Council expanded opportunities for seven organizations to contribute to the implementation of GEF projects. These organizations are known as "Executing Agencies" under the GEF s expanded opportunities policy (pdf 33kb).

The seven organizations are:

The African Development Bank (AfDB) The Asian Development Bank (ADB) The European Bank for Reconstruction and Development (EBRD) The Inter-American Development Bank (IDB) The International Fund for Agricultural Development (IFAD) The UN Food and Agriculture Organization (FAO) The UN Industrial Development Organization (UNIDO)

**Implementing agency -** GEF's implementing agencies - the <u>United Nations Development</u> <u>Programme (UNDP)</u>, the <u>United Nations Environment Programme (UNEP)</u>, and the <u>World</u> <u>Bank</u>—play key roles in managing GEF projects on the ground. Through them, the GEF has quickly amassed a diverse project portfolio serving the developing world, eastern Europe, and the Russian Federation—more than 160 countries altogether. Moreover, GEF teamwork by these partners reinforces their individual efforts to mainstream or incorporate global environment concerns into all of their policies and programs.



**GEF/ UNDP** 



GEF/ WORLD BANK GROUP



GEF/ UNEP



GEF/ UNIDO

#### IW – International Waters focal area

**OP** – GEF Operational Programme; specific guidelines are available online for each number used (OPs 8, 9, 10, 2, 12, 14).

PPG - Project Preparation Grant, a preliminary phase of project development

#### **Project Cycle**

There are 4 steps to the GEF project cycle:

- 1. CEO Review of the PIF (Project Identification Form)

- <u>Council Approval</u> of the Work Program
   <u>CEO Endorsement</u>
   <u>Implementation</u> Supervision, Monitoring, and Final Evaluation

Tranche - refers to Investment funding phases

| LME PROJECTS  |  |  |  |             |          |                      |                         |   |  |
|---|--|--|--|-------------|----------|----------------------|-------------------------|---|--|
| 1. LME PROJECTS   | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER | 3. PROJECT TITLE   | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES   | 5. G<br>GRA | EF<br>NT | 6. CO-FINANC·<br>ING | 7. TOTAL in<br>millions | 8. STATUS as listed<br>in database project<br>cover sheet | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
| AGULHAS CURRENT LME and   |  | Programme for the Agulhas  | UNDP   | \$          | 12,200   | \$ 18.263            | \$ 30.463               | CEO endorsed  | IW · OP 8· 9   |
| SOMALI CURRENT LME<br>Note that this project is closely<br>coordinated with WIO-Lab (1247)<br>and SWIOFP (1082) | Regional ID 1462                               | and Somali Current LMEs:<br>ASCLMEs  |  | Ŷ           | 12.200   | φ 10.200             | φ 00.400                |   |  |
| Agulhas Somali  | Multi-focal, regional<br>1082                  | Southwest Indian Ocean<br>Fisheries Project (SWIOFP)<br>one of several projects that<br>will be linked to address<br>fisheries issues of the two<br>LMEs | IBRD (World Bank)  | \$          | 12.000   | \$ 22.950            | \$ 34.950               | Project Completion<br>November 30, 2011                   | Multi-focal; OP<br>8; 2  |
| Agulhas Somali  | 1247   | WIOLaB - Addressing land-<br>based activities in the<br>Western Indian Ocean   | UNEP   | \$          | 4.511    | \$ 6.902             | \$ 11.413               | Under Implementation                                      | IW; OP 10; 2; 9  |
| BALTIC SEA LME  | Regional                                       | Baltic Sea Regional Project  | BSRP ICES Study Group on   |             |          |                      |                         | Phase II under  |  |
|   |  | (BSRP) [built on the Large<br>Marine Ecosystem concept]  | Baltic Ecosystem Health Issues<br>(indicators); BSRP/ ICES (for<br>EU BONUS science plan)<br>involves 16 project proposals<br>granted money for three years<br>with a total budget of 22 million<br>Euros; BSRP/ ICES-HELCOM<br>WGIAB on Integrated<br>assessment in the Baltic.<br>HELCOM Baltic Sea Action<br>Plan; BSRP also serves as<br>example of the new EU Marine<br>Strategy Directive. |             |          |                      |                         | implementation  |  |
| Baltic Sea LME  | Regional 922                                   | Tranche 1  | IBRD - UNDP  | \$          | 5.500    | \$ 6.600             | \$ 12.100               | completed 2007  |  |

| 1. LME PROJECTS   | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER | 3. PROJECT TITLE  | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES | 5. GEF<br>GRANT | 6. CO-FINANC<br>ING | 7. TOTAL in<br>millions | 8. STATUS as listed<br>in database project<br>cover sheet   | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
|---|--|---|--|-----------------|---------------------|-------------------------|---|--|
| BAY OF BENGAL LME   | Regional 12                                    | 32 Bay of Bengal LME  | FAO/ IBRD                                | \$ 12.082       | \$ 16.386           | \$ 28.468               | IA Approved;<br>inception meeting held<br>3-5 November 2009 | IW; OP 8   |
| BENGUELA CURRENT LME  | Regional 33                                    | D5 Implementation of the SAP<br>Toward Achievement of the<br>Integrated Mgt. of the<br>Benguela Current Large<br>Marine Ecosystem (LME) | UNDP UNOPS Executing                     | \$ 5.138        | \$ 62.029           | \$ 67.167               | CEO Endorsed  | IW; OP 8   |
|   | Regional 25                                    | 71 Distance Learning and<br>Information Sharing Tool for<br>the Benguela Coastal Areas<br>(DLIST-Benguela)                              | UNDP UNOPS executing                     | \$ 0.748        | \$ 0.798            | \$ 1.546                | IA Approved   | IW; OP 10  |
|   | Regional 7                                     | 9 Implementation of the SAP<br>toward achievement of the<br>integrated mgt. of the<br>BCLME   | UNDP                                     | \$ 15.114       | \$ 23.450           | \$ 38.564               | IA Approved   | IW; OP 8   |
| BLACK SEA LME See also WB<br>GEF Strategic Partnership for<br>Nutrient Reduction in Black Sea<br>and Danube in Investment Fund<br>section | - Regional 22                                  | 3 control of eutrophication -<br>Tranche 2  | UNDP                                     | \$ 6.000        | \$ 5.332            | \$ 11.332               | under implementation  | IW; OP 8   |
|   | Regional 15                                    | 0 Control of eutrophication-<br>Phase 1   | UNDP                                     | \$ 4.000        | \$ 3.945            | \$ 7.945                | under implementation  | IW; OP 8   |
| CANARY CURRENT LME  | Regional 19                                    | 9 Protection of the Canary<br>Current LME   | FAO and UNEP                             | \$ 8.790        | \$ 17.716           | \$ 26.506               | Council Approved  | IW; OP 8   |
| CARIBBEAN SEA LME   | Regional 370                                   | 6 Testing a prototype<br>Caribbean Regional Fund for<br>Wastewater Mgt  | IADB and UNEP                            | \$ 20.000       | \$ 251.500          | \$ 271.500              | PPG approved  | IW, OP not<br>given  |

| 1. LME PROJECTS        | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER | 3. PROJECT TITLE  | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES | 5. GEF<br>GRANT | F      | 6. CO-FINANC-<br>ING                    | 7. TOTAL in<br>millions | 8. STATUS as listed<br>in database project<br>cover sheet  | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
|------------------------|--|---|--|-----------------|--------|---|-------------------------|--|--|
| Caribbean              | Regional 1254                                  | Integrating watershed and   | UNEP                                     | <b>\$</b> 1     | 13.383 | \$ 98.269                               | \$ 111.652              | CEO endorsed   | IW: OP 9   |
|                        |  | coastal area management in<br>the small island developing<br>states of the Caribbean<br>(IWCAM  |  |                 |        |   |                         |  |  |
| Caribbean              | Regional 1248                                  | Reducing Pesticide Run-off<br>to the Caribbean Sea  |  | \$              | 4.290  | \$ 5.752                                | \$ 10.042               | IA Approved  | IW; OP 10  |
| Caribbean              | Regional 1032                                  | Sustainable Management of<br>the Shared Marine<br>Resources of the Caribbean<br>Large Marine Ecosystem<br>(CLME)and Adjacent<br>Regions | UNDP UNOPS and IOC-<br>UNESCO executing  | \$              | 7.080  | \$ 48.300                               | \$ 55.380               | CEO Endorsed   | IW; OP 8   |
| Wider Caribbean        | Regional 614                                   | Demonstrationsof innovative<br>approaches to the<br>rehabilitation of heavily<br>contaminated Bays in the<br>Wider Caribbean            | UNEP                                     | \$              | 6.910  | \$ 25.860                               | \$ 32.770               | IA Approved  | IW, OP 10  |
| GUINEA CURRENT I ME    | Regional 1188                                  | Combating Living Resource   | LINDP                                    | \$ 2            | 20 812 | \$ 33.871                               | \$ 54.683               | Under Implementation   |  |
|                        |  | Depletion and Coastal Area<br>Degradation in the Guinea<br>Current LME through<br>Ecosystem-based Regional<br>Actions                   |  | Ţ,              | 20.012 | • | ¢ 01.000                |  |  |
| GULF OF MEXICO LME     | Regional 1346                                  | Integrated Assessment and<br>Mgt of GoMex LME   | UNIDO                                    | \$              | 4.502  | \$ 96.775                               | \$ 101.277              | IA Approved;<br>inception meeting 22-<br>25 June 2009  | IW; OP 9   |
| GUI E OE THAILAND I ME | see Regional - South                           |   |  |                 |        |   |                         |  |  |
|                        | China Sea LME & Gulf<br>of Thailand 885        |   |  |                 |        |   |                         |  |  |
|                        |  |   |  |                 |        |   |                         | and the second |  |

| 1. LME PROJECTS  | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER | 3. PROJECT TITLE   | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES            | 5. GEF<br>GRANT | 6. CO-FINANC<br>ING | 7. TOTAL in<br>millions | 8. STATUS as listed<br>in database project<br>cover sheet | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
|--|--|--|---|-----------------|---------------------|-------------------------|---|--|
| HUMBOLDT CURRENT LME   | Regional 3749                                  | Towards Ecosystem<br>Management of the<br>Humboldt Current Large<br>Marine Ecosystem   | UNDP; IFOP and IMARPE<br>executing                  | \$ 6.925        | \$ 25.190           | \$ 32.115               | Council Approved  | multi-focal  |
| INDONESIAN SEA LME (demo<br>project developed under South<br>China Sea and Gulf of Thailand<br>UNEP/GEF project)<br>Indonesian Sea LME | Regional 3188<br>Regional 885                  | Demonstration, community-<br>based mgt of seagrass<br>habitats in Trikora Beach<br>East Bintan, Riau<br>Archipelago Province,<br>Indonesia<br>see also South China Sea<br>and Gulf of Thailand project<br>(includes Indonesia) | UNEP; Indonesian Institute of<br>Sciences executing | \$ 0.398        | \$ 0.392            | \$ 0.790                | CEO approved  | OP 8   |
| MEDITERRANEAN SEA LME  | see investment fund                            | (  |   |                 |                     |                         |   |  |
| Mediterranean  | list<br>MED 3974                               | MED Greater Tunis Treated<br>Wastewater Discharge in the<br>Mediterranean Sea  | IBRD  | \$ 8.000        | \$ 547.000          | \$ 555.000              | Council Approved  | IW; OP not<br>given  |
| Mediterranean  | MED 3977                                       | MED Mediterranean<br>Environmental Sustainable<br>Development Program<br>"Sustainable MED"   | IBRD  | \$ -            | \$ -                | \$-                     | Council Endorsed  | IW; OP not<br>given  |
| Mediterranean  | MED 3990                                       | MED Integration of Climatic<br>Variability and Change into<br>National Strategies to<br>implement the ICZM Protocol<br>in the Mediterranean  | UNEP  | \$ 2.298        | \$ 7.000            | \$ 9.298                | Council Approved  | IW; OP not<br>given  |
| PACIFIC CENTRAL AMERICAN<br>COASTAL LME  | 2688   | Integrated Ecosystem<br>Management of the Gulf of<br>Fonseca   | IADB [Inter-American<br>Development Bank]           | \$ 5.000        | \$ 21.326           | \$ 26.326               | Council Approved  | IW; OP 9   |

| 1. LME PROJECTS      | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER                        | 3. PROJECT TITLE  | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES                        | 5. GEF<br>GRANT |     | 6. CO-FINANC-<br>ING | 7. TOTAL in<br>millions | 8. STATUS as listed<br>in database project<br>cover sheet            | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
|----------------------|---|---|---|-----------------|-----|----------------------|-------------------------|--|--|
| PATAGONIAN SHELF LME | Regional 613  | Environmental Protection of<br>the Rio de la Plata and its<br>Maritime Front: Pollution<br>Prevention and Control and<br>Habitat Restoration                          | UNDP  | \$ 5.6          | 80  | \$ 4.800             | \$ 10.480               | IA Approved  | IW; OP 8   |
|                      | Regional 3519   | Reducing and Preventing<br>Land-based Pollution in the<br>Rio de la Plata/Maritime<br>Front through<br>Implementation of the<br>FrePlata Strategic Action<br>Programm | UNDP  | \$ 2.8          | 350 | \$ 15.020            | \$ 17.870               | IA Approved  | IW; OP not<br>given  |
| RED SEA LME          | Yemen 394   | Protection of Marine<br>Ecosystems of the Red Sea<br>Coast  | UNDP  | \$ 2.8          | 300 | \$-                  | \$ 2.800                | closed   | IW; OP 9   |
|                      | Regional 340  | Implementation of the<br>Strategic Action Programme<br>(SAP) for the Red Sea and<br>Gulf of Aden  | UNDP  | \$ 19.0         | 000 | \$ 25.650            | \$ 44.650               | closed   | IW; OP 9   |
|                      | Regional 3809   | Red Sea and Gulf of Aden<br>Strategic Ecosystem<br>Management   | IBRD World Bank is GEF<br>Agency; PERSGA is executing<br>agency | \$ 3.0          | 00  | \$ 35.000            | \$ 38.000               | CEO PIF Clearance<br>April 26, 2010, but not<br>yet approved         | Strategic<br>Program: IW-<br>1; IW-2                                       |
| SOMALI CURRENT LME   | see Agulhas-<br>Somali1462  | ASCLMEs   |   |                 |     |                      |                         |  |  |
| SOUTH CHINA SEA LME  | Regional 885  | Reversing Environmental<br>degradation trends in the<br>SCS and GoThailand  | UNEP  | \$ 16.4         | 14  | \$ 16.399            | \$ 32.813               | Under Implementation<br>- IWLEARN says<br>completed February<br>2009 | IW; OP 8   |
|                      | Regional 1128<br>see Gulf of Thailand -<br>South China Sea<br>section | Biodiversity Management in<br>the Coastal Area of China's<br>South Seamarine<br>biodiversity, ecosystem<br>management and marine<br>biodiversity monitoring           | UNDP  | \$ 3.1          | 95  | \$ 43.410            | \$ 46.605               | IA Approved  | Biodiversity;<br>OP 2  |

| 1. LME PROJECTS              | 2. GEF PROJECT<br>CLASSIFICATION<br>AND NUMBER | 3. PROJECT TITLE  | 4. IMPLEMENTING OR<br>EXECUTING AGENCIES | 5. GEF<br>GRANT             | 6. CO-FINANC<br>ING                         | 7. TOTAL in<br>millions   | 8. STATUS as listed<br>in database project<br>cover sheet                       | 9. FOCAL<br>AREAS & GEF<br>OP Program<br>where<br>available in<br>database |
|------------------------------|--|---|--|-----------------------------|---|---|---|--|
| SULU-CELEBES                 | Regional 3524                                  | CTI Sulu-Celebes Sea<br>Sustainable Fisheries<br>Management Projectunder<br>the Coral Triangle Initiative | UNDP (UNOPS -<br>executing)              | \$ 2.890                    | \$ 3.420                                    | \$ 6.310  | PPG Approved  | IW   |
| YELLOW SEA LME               | Regional 790                                   | Reducing environmental stress in the YSLME  | UNDP                                     | \$ 14.394                   | \$ 10.302                                   | \$ 24.696   | Under implementation  | IW; OP 8   |
|                              |  |   | TOTALS, LME Projects :                   | \$ 255.904                  | \$ 1,499.607                                | \$ 1,755.511  |   |  |
| STRATEGIC PARTNI<br>PROJECTS | ERSHIP & WB/                                   | GEF PARTNERSH   | IP INVESTMENT FU                         | JNDING F                    | OR LME-I                                    | BASED and   | ICM LINKED  |  |
| WB/GEF PARTNERSHIP           | P INVESTMENT I                                 | FUND FOR POLLUTI  | ON REDUCTION IN TH                       | E LMES OI                   | Ε ΕΔΩΤ ΔΩΙ                                  | ^   |   |  |
|                              |  |   |  |                             |   | A   |   |  |
|                              | GEF Project ID #                               | Funding phase or<br>installments within<br>phase  | GEF Agency                               | GEF grant                   | Co-<br>financing                            | Total, grant<br>+ co-<br>financing in<br>millions   | Status and GEF O<br>Specifications if a   | perations<br>vailable  |
| Partnership Investment Fund  | GEF Project ID # Regional 2454                 | Funding phase or<br>installments within<br>phase<br>Tranche 1 of 3 tranches                               | GEF Agency                               | GEF grant<br>\$ 4.438       | Co-<br>financing<br>\$ 459.930              | Total, grant<br>+ co-<br>financing in<br>millions<br>\$ 464.368                                       | Status and GEF O<br>Specifications if a<br>Council Approved                     | perations<br>vailable<br>IW; OP 10   |
| Partnership Investment Fund  | GEF Project ID #Regional2454Regional3025       | Funding phase or<br>installments within<br>phase<br>Tranche 1 of 3 tranches<br>Tranche 1, install 2       | GEF Agency<br>IBRD                       | GEF grant \$ 4.438 \$ 5.000 | Co-<br>financing<br>\$ 459.930<br>\$ 80.870 | Total, grant         + co-         financing in         millions         \$ 464.368         \$ 85.870 | Status and GEF O<br>Specifications if a<br>Council Approved<br>Council Approved | perations<br>vailable<br>IW; OP 10<br>IW; OP 10                            |

| Place                  | GEF ID # | title   |      | GEF Grant | Co-financing | Status           | Focus |
|------------------------|----------|---|------|-----------|--------------|------------------|-------|
| China                  | 2750     | Ningbo water and environ.<br>project  | IBRD | \$ 5.350  | \$ 133.900   | CEO endorsed     |       |
| China                  | 2972     | Liaoning Medium Cities<br>Infrastructure  | IBRD | \$ 5.350  | \$ 187.700   | CEO endorsed     |       |
| China                  | 2979     | 2nd Chandong Environment<br>under WB/GEF Partnership<br>Investment Fund for Pollution<br>Reduction in the LMEs of<br>East Asia  | IBRD | \$ 5.350  | \$ 201.900   | CEO endorsed     |       |
| China (in preparation) | 3223     | Shanghai Agricultural and<br>Non-Point Pollution<br>Reduction project (SANPR)   | IBRD | \$ 5.000  | \$ 26.870    | PPG Approved     |       |
| Philippines            | 2759     | Manila Third Sewage Project<br>(MTSP)   | IBRD | \$ 5.000  | \$ 87.810    | CEO endorsed     |       |
| Vietnam                | 2758     | Vietnam: Coastal Cities<br>Environment and Sanitation<br>Project - under WB/GEF<br>partnership Investment Fund<br>for Pollution Reduction in the<br>LMEs of East Asia | IBRD | \$ 5.000  | \$ 21.700    | Council Approved |       |
| Vietnam                | 3187     | Demonstration of<br>Sustainable Management of<br>Coral Reef Resources in the<br>coastal Waters of Ninh Hai<br>District, Ninh Thuan<br>Province, Viet Nam              | UNEP | \$ 0.407  | \$ 0.528     | CEO Approved     |       |

#### EAST ASIAN SEAS PROJECTS RELATED TO POLLUTION REDUCTION IN THE LMES OF EAST ASIA

|                            | GEF Project ID # | Funding phase or<br>installments within<br>phase  | GEF Agency   | GEF grant | Co-<br>financing | Total, grant<br>+ co-<br>financing in<br>millions | Status and GEF Operations<br>Specifications |  |  |
|----------------------------|------------------|---|--|-----------|------------------|---|---|--|--|
| Regional - EAST ASIAN SEAS | Regional 2138    | Livestock Waste<br>Management in East Asia<br>(better spatial distribution of<br>intensive livestock<br>production to bring nutrient<br>emission more in line with<br>adsorptive capacity of  | IBRD   | \$ 7.000  | \$ 17.006        | \$ 24.006   | IA Approved IW; OP 10                       |  |  |
| Regional - EAST ASIAN SEAS | Regional 2700    | Implementation of<br>Sustainable Development<br>Strategy for the Seas of East<br>Asia (SDS-SEA) [develop<br>policies and action plans for<br>sustainable coastal and<br>ocean development in at<br>least 70% of PEMSEA<br>countries by 2015)-<br>International Waters | UNDP (IMO and UNOPS<br>Executing)                          | \$ 10.876 | \$ 33.374        | \$ 44.250   | IA Approved IW-2; OP 9                      |  |  |
|                            |                  |   | TOTALS FOR ADDITIONAL<br>PROJECTS IN LMES OF EAST<br>ASIA: | \$ 17.876 | \$ 50.380        | \$ 68.256   |   |  |  |
|                            | ·                | ·   |  |           |                  |   | ·   |  |  |

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|   | GEF Project ID<br># | Funding phase or<br>installments within<br>phase                                    | GEF Agency   | GEF | grant  | Co-<br>finai | ncing   | Total<br>+ co-<br>finan<br>milliid | , grant<br>cing in<br>ons | Status and GEF O<br>Specifications | perations            |
|---|---------------------|---|--|-----|--------|--------------|---------|------------------------------------|---------------------------|------------------------------------|----------------------|
|   | 3271                | Tranche 1   | IBRD   | \$  | 1.000  | \$           | 0.330   | \$                                 | 1.330                     | CEO approved                       | IW-2; OP 8           |
| Regional  | 2093                | Tranche 1, Install 1  | IBRD   | \$  | 5.073  | \$           | 75.000  | \$                                 | 80.073                    | Council approved                   | IW; OP 8; OP<br>2    |
| Regional  | 3559                | Tranche 1, Install 2  | IBRD   | \$  | 5.600  | \$           | 121.640 | \$                                 | 127.240                   | Council approved                   | IW; OP not<br>listed |
|   |                     |   | TOTALS FOR PROJECTS IN<br>LMES OF SUB-SAHARAN<br>AFRICA: | \$  | 11.673 | \$           | 196.970 | \$                                 | 208.643                   |                                    |                      |
| BREAKOUT OF PROJECTS                              | SUBSUMED UNDE       | ER THE SUB-SAHARAN  | INVESTMENT FUND  |     |        |              |         |                                    |                           |                                    |                      |
| Place   | GEF ID #            | Title   |  | GEF | Grant  | Co-fir       | nancing |                                    |                           | Status                             | Focus                |
| Botswana  | 2864                | Integrated Water Resources<br>MGTDemonstration Project                              | UNDP   | \$  | 0.975  | \$           | 11.820  |                                    |                           | CEO approved                       | IW; OP 10            |
| Kenya [LINK TO AGULHAS &<br>SOMALI LMES PROJECT]  | 3313                | Fishery Management and<br>Sustainable Coastal<br>Environment Development<br>Project | IBRD   | \$  | 5.000  | \$           | 30.300  |                                    |                           | PPG Approved                       | IW; OP 8             |
| Senegal [ LINK TO CANARY<br>CURRENT LME PROJECT ] | 3314                | Sustainable Management of<br>Fish Resources   | IBRD   | \$  | 6.000  | \$           | 18.900  |                                    |                           | CEO Endorsed                       | IW; OP 8             |
|   | 0550                | West Africa Regional  | IBRD   | \$  | 10.000 | \$           | -       |                                    |                           | CEO Endorsed 9/1/09                | IW; no OP<br>given   |

# WORLD BANK - GLOBAL ENVIRONMENT FACILITY STRATEGIC PARTNERSHIP FOR NUTRIENT REDUCTION IN THE DANUBE RIVER AND BLACK SEA

| GEF Project ID<br>#                | Funding phase or<br>installments within<br>phase   | GEF Agency  | GEF grant | Co-<br>financing | Total, grant<br>+ co-<br>financing in<br>millions | Status and GEF Ope<br>Specifications | erations    |
|------------------------------------|--|---|-----------|------------------|---|--------------------------------------|-------------|
| Tranche 1 1014                     | Danube/Black Sea Basin<br>Strategic Partnership on<br>Nutrtient Reduction  | IBRD  | \$-       | \$ 29.555        | \$ 29.555   | Council Approved IW                  | V; OP 8; 10 |
| Tranche 2 1661                     | Danube/Black Sea Strategic<br>Partnership - Nutrient<br>Reduction Investment Fund:<br>Tranche 2  | IBRD  | \$ 1.750  | \$ 74.800        | \$ 76.550   | Council Approved IW                  | V; OP 8     |
| Tranche 3 2044                     | Strategic Partnership for<br>Nutrient Reduction in the<br>Danube River and Black Sea<br>- World Bank-GEF Nutrient<br>Reduction Investment Fund:<br>Tranche 3 | IBRD  | \$ 2.918  | \$ 222.182       | \$ 225.100  | Council Approved IW                  | V; OP 8     |
| Regional Project<br>Phase 1 1460   | Strengthening the<br>implementation capacities for<br>nutrient reduction and<br>transboundary cooperation in<br>the Danube R. Basin                          | IBRD [GEF OP 8]<br>[consistent with nutrient<br>reduction]                | \$ 5.350  | \$ 6.600         | \$ 11.950   | IA approved IW                       | V; OP 8     |
| Regional Project<br>Tranche 2 2042 | Strengthening the<br>implementation capacities for<br>nutrient reduction and<br>transboundary cooperation in<br>the Danube R. Basin                          | IBRD [GEF OP 8]<br>[consistent with nutrient<br>reduction]                | \$ 12.000 | \$ 12.878        | \$ 24.878   | IA approved IW                       | V; OP 8     |
|                                    |  | TOTALS FOR PROJECTS IN<br>THE BLACK SEA LME AND<br>THE DANUBE RIVER BASIN | \$ 22.018 | \$ 346.015       | \$ 368.033  |                                      |             |

| BREAKOUT OF PROJE        | CTS SUBSUMED UN | IDER THE BLACK SEA AN   | D DANUBE RIVER INVE               | STMENT FUNI | D            |   |                      |                               |
|--------------------------|-----------------|---|-----------------------------------|-------------|--------------|---|----------------------|-------------------------------|
| Place                    | GEE ID #        | title   |                                   | GEE Grant   | Co-financing |   | Status               | Focus                         |
|                          |                 | line  |                                   | OLI GIAIR   | Co-mancing   |   | Olalus               | 1 0003                        |
| Bosnia-Herzegovina       | 2143            | water quality protection project  | IBRD                              | \$ 8.500    | \$ 11.370    |   | CEO Endorsed         | IW; OP 8                      |
| Croatia                  | 3148            | agricultural pollution control  | IBRD                              | \$ 5.000    | \$ 15.000    |   | CEO endorsed         | IW; OP 8                      |
| Croatia (in preparation) | 3725            | Coastal Cities Pollution<br>Control (APL 2)   |                                   | \$ 6.400    | \$ 202.000   |   | CEO Endorsed         | IW; OP 8                      |
| Hungary                  | 1351            | Reduction of nutrient discharges  | IBRD                              | \$ 12.850   | \$ 19.500    |   | CEO endorsed         | IW; OP 8                      |
| Moldova                  | 1355            | Agric. Pollution Control<br>Project   | IBRD                              | \$ 5.250    | \$ 5.690     |   | Under implementation | IW; OP 8                      |
| Moldova                  | 1542            | Environmental Infrastructure<br>Project   | IBRD                              | \$ 4.562    | \$ 5.338     |   | CEO endorsed         | IW; OP 8                      |
| Romania                  | 2970            | Integrated Nutrient Pollution<br>Control  | IBRD                              | \$ 5.500    | \$ 75.700    |   | CEO endorsed         | IW; OP 8                      |
| Serbia                   | 2141            | Reduction of enterprise<br>nutrient discharges<br>project(RENDR)  | IBRD                              | \$ 9.370    | \$ 13.100    |   | CEO endorsed         | IW; OP 8                      |
| Turkey                   | 1074            | Anatolia Watershed Rehab<br>Project   | IBRD                              | \$ 7.300    | \$ 38.110    |   | under implementation | IW; OP 8                      |
|                          |                 |   |                                   | l           |              | l   |                      |                               |
| WORLD BANK-GEF           | INVESTMENT FU   | ND FOR THE MEDITER  | RRANEAN SEA LAR                   | GE MARINE   | ECOSYSTE     | M PARTNER                                     | SHIP                 |                               |
| Place                    | GEF ID #        | title   |                                   | GEF Grant   | Co-financing | Total grant + co-<br>financing in<br>millions | Status               | Focus                         |
| Regional                 | 2601            | World Bank-GEF Investment<br>Fund for the Mediterranean<br>Sea Large Marine<br>Ecosystem<br>PartnershipTranche 1, 1st<br>allocation | IBRD, the World Bank;<br>UNEP/MAP | \$ 6.055    | \$ 90.000    | \$ 96.055                                     | Council Approved     | Multi focal; OP<br>9 and OP 2 |

| Regional | 3229<br>2600 | World Bank-GEF Investment<br>Fund for the Mediterranean<br>Sea Large Marine<br>Ecosystem<br>PartnershipTranche 1, Install<br>Strategic Partnership for the                        | IBRD<br>Strategic Partnership led by                    | \$ 15.000<br>\$ 12.891 | \$ 45.000<br>\$ 36.548 | \$ 60.000<br>\$ 49.439 | Council approved | IW; OP 9 and<br>OP 2<br>Multi Focal            |
|----------|--------------|---|---|------------------------|------------------------|------------------------|------------------|--|
|          |              | Ecosystem-Regional<br>Component: Implementation<br>of Agreed Actions for the<br>Protection of the<br>Environmental Resources of<br>the Mediterranean Sea and<br>Its Coastal Areas |   |                        |                        |                        | approval 2008    | Area 1W-2;<br>POPS-2,<br>POPS-3; OP9,<br>2; 14 |
|          |              |   | TOTALS FOR PROJECTS IN<br>THE MEDITERRANEAN SEA<br>LME: | \$ 33.946              | \$ 171.548             | \$ 205.494             |                  |  |
|          |              |   |   |                        |                        |                        |                  |  |
|          |              |   |   |                        | GRAND TO               | OTAL = \$ 3,150        | 6.175            |  |
|          |              | SUMMARY OF TOT  | ALS   |                        |                        |                        |                  |  |
|          |              | GEF GRANTS  | CO-FINANCING  |                        |                        | TOTALS                 |                  |  |
|          |              | \$ 255.904  | \$ 1,499.607  |                        | individual<br>LMEs     | \$ 1,755.511           |                  |  |
|          |              | \$ 9.438  | \$ 540.800  |                        | E.Asian<br>Investment  | \$ 550.238             |                  |  |
|          |              | \$ 17.876   | \$ 50.380   |                        | E Asian addit.         | \$ 68.256              |                  |  |
|          |              | \$ 11.673   | \$ 196.970  |                        | SubSahara              | \$ 208.643             |                  |  |
|          |              | \$ 22.018   | \$ 346.015  |                        | Danube &<br>Black Sea  | \$ 368.033             |                  |  |
|          |              | \$ 33.946   | \$ 171.548  |                        | Med                    | \$ 205.494             |                  |  |
|          |              | \$ 350.855  | \$ 2,805.320  |                        | GRAND                  | \$ 3,156.175           |                  |  |