



GEF

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November 20, 2001

Dear Council Member,

UNDP, as the Implementing Agency for the project, *Regional (Angola, Namibia, South Africa): Implementation of the Strategic Action Programme (SAP) Toward Achievement of the Integrated Management of the Benguela Current Large Marine Ecosystem (LME)*, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the Council in May 2000 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.gefweb.org. If you do not have access to the Web, you may request the local field office of the World Bank or UNDP to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Mohamed T. El-Ashry
Chief Executive Officer
And Chairman



United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY



14 August 2001

Dear Mr. El-Ashry,

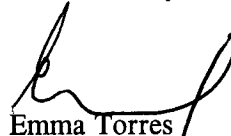
Subject: Integrated Management of the Benguela Current Large Marine Ecosystem (BCLME)

I am pleased to attach herewith the above mentioned project document. The brief was approved by the GEF Executive Council in April 2000. Our response to the comments raised by the GEF Secretariat and Council can be found at the end of the "Summary" section on the cover page of the project document.

As per paragraph 29 and 30 of the GEF Project Cycle, we are submitting this project document for circulation to the members of the GEF Executive Council and, subsequently, for your final endorsement.

Thank you in advance for expediting the review and approval of this project.

Yours sincerely,



Emma Torres
Deputy Executive Coordinator and
Officer-in-Charge

Mr. Mohammed El-Ashry
Chief Executive Officer
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Washington D.C. 20433

Cc: M. Niamir-Fuller, GEF

**UNDP
Global Environment Facility
PROJECT DOCUMENT**

Project Number: RAF/00/G32/A/1G/31

Project Title: Integrated Management of the Benguela Current Large Marine Ecosystem (BCLME)

Countries: Angola, Namibia, South Africa

Duration: 60 months

Starting Date: September 2001

Completion Date: August 2006

ACC/UNDP Sector: 0410 - Water Resources
Planning & Management

Executing Agency: UNOPS

Summary

The long-term objective of the project is to undertake the array of priority measures identified in the Transboundary Diagnostic Analysis (TDA) and the Strategic Action Program (SAP), in conjunction with the ongoing activities of the participating countries, donors, regional organizations, private industry, NGOs, and other affected interests. Major outputs will include provision of effective inter and intra project coordination and support through establishment of a Program Coordination Unit (PCU) and the identification and provision of resources for a Lead Agency in each of the participating countries. The project makes provision for the transfer of increasing amounts of responsibility and ownership of project activities as implementation proceeds. Other outputs include creating mechanisms for, and steps to be undertaken to effect the sustainable management and use of the resources of the BCLME; assessment of environmental variability, ecosystem impacts, and improvement of predictability, preliminary steps to maintain BCLME ecosystem health and effectively control pollution; and support to recruit new, additional donors and increase the level of co-finance during the life of the project and increased funding for the post-project programs and activities of the newly created Benguela Current Commission (BCC). The creation of the BCC, which must be negotiated among the participating countries, and immediate creation of the Interim Benguela Current Commission (IBCC), are highlights of the country-prepared and endorsed SAP. Seven Ministers have formally signed the SAP. At the substantive level, special emphasis in this project is being given to effecting the sustainable management and use of the resources of the BCLME and on assessment of environmental variability, ecosystem impacts, and improvement of predictability of system dynamics. Outputs and activities related to pollution and the coastal zone, issues whose transboundary impacts are limited at this point but likely to grow in future, are modest in nature but deemed critical to include as they sustain the broad level of interministerial participation that has characterized country efforts to date. Including a limited number of pollution and coastal zone activities is also necessary to the project objective of taking an integrated approach to the BCLME. There were two substantive questions re. the Project Brief submitted by the Council Member from France, one asked that a concerted effort be made to ensure that work of the project will be directly applicable to improved management of fish stocks, pollution prevention, and environmental protection. This question is addressed in Section III, paragraphs 10., 11., and 12. of this document. The second question, regarding the more exact nature and description of project co-finance, is addressed in Annex A1, an Annex that was not part of the less detailed Project Brief and is responsive to the request from the Council Member from France.

UNDP & Co-financing:

UNDP-GEF: \$15,114,000

Governments: \$15,969,761
(cash/in-kind)

Parallel Financing
\$ 7,589,989

TOTAL: \$ \$38,737,750

On behalf of the	Signatures	Date	Name/Title
Government of Angola			
Government of Namibia			
Government of South Africa			
UNOPS			
UNDP			

ACRONYMS

AOS	Administrative and Operational Services
APR	Annual Project Review
ADB	African Development Bank
BCC	Benguela Current Commission
BCLME	Benguela Current Large Marine Ecosystem
BENEFIT	Benguela Environment Fisheries Interaction and Training
BL	Budget Line
CO ₂	Carbon Dioxide
CTA	Chief Technical Advisor
DANCED	Danish Cooperation for Environment and Development
EEZ	Exclusive Economic Zone
ENVIFISH	Environmental Conditions and Fluctuations in Distribution of Small Pelagic Fish Stocks (Programme)
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GEF	Global Environment Facility
GLOBEC	Global Ocean Ecosystems Dynamics
GOOS	Global Ocean Observing System
GTZ	(Deutsche) Gesellschaft für Technische Zusammenarbeit
HAB	Harmful Algal Bloom
H ₂ S	Hydrogen Sulfide
IBCC	Interim Benguela Current Commission
IC	Incremental Cost as defined by the GEF
ICSEAF	International Commission for the South East Atlantic Fisheries
IW	International Waters
LEARN	Learning Exchange and Resource Network
LME	Large Marine Ecosystem
MARPOL	International Convention for the Control of Pollution by Ships
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for Development and Cooperation
PDF-B	Project Development Facility of the GEF
OP	GEF Operational Program
PCU	Program Coordination Unit
PIR	Project Implementation Review
PIRATA	Pilot Research Moored Array in the Tropical Atlantic
PPER	Project Performance and Evaluation Review
PSC	Project Steering Committee
SADC	Southern African Development Community
SAP	GEF Strategic Action Program
SEAFO	Southeast Atlantic Fisheries Organization
SONANGOL	Sociedade Nacional de Combustíveis de Angola
SPACC	Small Pelagic Fish and Climate Change
STAP	GEF Scientific and Technical Advisory Panel
TDA	Transboundary Diagnostic Analysis
TPR	Tri-Partite Review
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNOPS	United Nations Office for Project Services
WB	The World Bank

TABLE OF CONTENTS

Main Text

Acronyms	Page 1
Background and Context	PP. 4-6
Rationale and Objectives	PP. 6-7
Rationale for GEF Finance	Page 7
Project Outcomes/Components and Expected Results	PP. 7-18
Risks and Sustainability	PP. 18-19
Stakeholder Participation	PP. 19-20
Project Implementation/Institutional Framework/National and Regional Inst.	PP. 20-22
Incremental Costs Summary	PP. 22-24
Monitoring and Evaluation	PP. 25-26
List of Mandatory and Optional Annexes/List of Attachments	PP. 26-27

Annexes and Attachments

Annex A – Incremental Cost Narrative	PP. 28-33
Annex A1 – Co-Finance Narrative	PP. 34-37
Annex B – Incremental Costs/Complete Matrix	PP. 38-45
Annex C – Logical Framework Analysis	PP. 46-52
Annex D – STAP Review	PP. 53-55
Annex E – Comment on STAP Review	P. 56
Annex F1 – Country Actions	PP. 57-64
Annex F2 – Description of Baseline/ Acronyms Used	PP. 65-72
Annex F3 – List of Relevant Baseline Programmes/Projects	PP. 73-78
Attachment 1 – Detailed Project Budget	PP. 79-87
Attachment 2 – Detailed Project Timeline/Project Narrative	PP. 88-94
Attachment 3 – Standard M&E Activities/Timeframes and Responsibilities	PP. 95-96
Attachment 4 – Monitoring and Evaluation Results to Date	PP. 97-104
Attachment 5 – Reporting Requirements and Legal Context	PP. 105-108
Attachment 6 – Institutional Arrangements	PP. 109-111
Attachment 7 – Terms of Reference/BCLME Programme	PP. 112-125

I. Background and Context (Baseline Course of Action)

Introduction

1. The Benguela Current Large Marine Ecosystem (BCLME) is situated along the coast of south western Africa, stretching from east of the Cape of Good Hope in the south, equatorwards to the Angola Front which is situated near the northern geopolitical boundary of Angola. It is one of the four major coastal upwelling ecosystems of the world, which lie at the eastern boundaries of the oceans. Like the Humboldt, California and Canary systems, the Benguela is an important center of marine biodiversity and marine food production. The BCLME's distinctive bathymetry, hydrography, chemistry and trophodynamics combine to make it one of the most productive ocean areas in the world, with a mean annual primary productivity of 1.25 grams of carbon per square metre per year - about six times higher than the North Sea ecosystem. This high level of primary productivity of the BCLME supports an important global reservoir of biodiversity and biomass of zooplankton, fish, sea birds and marine mammals, while near-shore and off-shore sediments hold rich deposits of precious minerals (particularly diamonds), as well as oil and gas reserves. The natural beauty of the coastal regions, many of which are still pristine by global standards, have also enabled the development of significant tourism in some areas. Pollution from industries and poorly planned and managed coastal developments and near-shore activities is, however, resulting in a rapid degradation of vulnerable coastal habitats.

2. The Namib Desert, which forms the landward boundary of the greater part of the BCLME, is one of the oldest deserts in the world, predating the commencement of persistent upwelling in the Benguela (12 million years before present) by at least 40 million years. The upwelling system in the form in which we know it today is about 2 million years old. The principal upwelling centre in the Benguela, which is situated near Lüderitz in southern Namibia, is the most concentrated and intense found in any upwelling regime. What also makes the Benguela upwelling system so unique in the global context is that it is bounded at both northern and southern ends by warm water systems, viz the tropical/equatorial eastern Atlantic and the Indian Ocean's Agulhas Current respectively. Sharp horizontal gradients (fronts) exist at these boundaries of the upwelling system, but these display substantial variability in time and in space - at times pulsating in phase and at others not. Interaction between the BCLME and the adjacent ocean systems occurs over thousands of kilometers. For example, much of the BCLME in particular off Namibia and Angola is naturally hypoxic - even anoxic - at depth as a consequence of subsurface flow of low oxygen water masses southward and eastward from the tropical Atlantic, compounded by depletion of oxygen from more localised biological decay processes. There are also teleconnections between the Benguela and processes in the North Atlantic and Indo-Pacific Oceans (e.g. El Niño). Moreover, the southern Benguela lies at a major choke point in the "Global Climate Conveyor Belt" whereby warm surface waters move from the Pacific via the Indian Ocean into the North Atlantic on time scales of decades to centuries. It is noteworthy that the South Atlantic is the only ocean in which there is a net transport of heat towards the equator. As a consequence not only is the Benguela at a critical location in terms of the global climate system, but it is also potentially extremely vulnerable to any future climate change or increasing variability in climate.

Anthropogenic Influences

3. Centuries before the arrival in southern Africa of the first European explorers and settlers, indigenous coastal peoples sustainably harvested intertidal and near-shore marine life. Commercial exploitation in the BCLME commenced in the first part of the seventeenth century with the harvesting of fur seals and was followed by extensive whaling operations in the eighteenth and nineteenth centuries. Commercial trawling started around 1900 and commercial purse-seine fishing for sardine some 50 years later. Fisheries expanded rapidly in the 1960s and 1970s during a period when there was heavy exploitation of resources by foreign fleets - resulting in the severe depletion and collapse of several fish stocks including hake, sardine and anchovy. Superimposed on this fishing pressure was the impact of the inherent natural environmental ecosystem variability and change. Together with the other factors mentioned in the

following paragraphs, this has made the sustainable use and management of BCLME living resources difficult.

Fragmented Management: A Legacy of the Colonial and Political Past

4. Following the establishment of European settlements at strategic coastal locations where victuals and water could be procured to supply fleets trading with the East Indies, the potential wealth of the African continent became apparent. This resulted in the great rush for territories and the colonisation of the continent - mostly during the nineteenth century. Boundaries between colonies were hastily established, often arbitrary and generally with little regard for indigenous inhabitants and natural habitats. Colonial land boundaries in the Benguela region were established at rivers (Cunene, Orange). Not only were the languages and cultures of the foreign occupiers different (Portuguese, German, English, Dutch) but so were the management systems and laws which evolved in the three now independent and democratic countries of the region - Angola, Namibia and South Africa. Moreover, not only were the governance frameworks very different, but a further consequence of European influence was the relative absence of inter-agency (or inter-ministerial) frameworks for management of the marine environment and its resources and scant regard for sustainability. To this day mining concessions, oil/gas exploration, fishing rights and coastal development have taken place with little or no proper integration or regard for other users. For example, exploratory wells have been sunk in established fishing grounds and the well-heads (which stand proud of the sea bed) subsequently abandoned. Likewise the impact of habitat alterations due to mining activities and ecosystem alteration (including biodiversity impacts) due to fishing have not been properly assessed.

Historical Influences

5. Prior to the United Nations Convention on the Law of the Sea (UNCLOS) and the declaration and the establishment of Exclusive Economic (or Fishing) Zones, there was an explosion of foreign fleets fishing off Angola, Namibia and South Africa. The result was a severe depletion of the resources of the BCLME during the 1960s and 1970s - an effective imperialism and colonisation of the BCLME by mainly First World countries. This period also coincided with liberation struggles in all three countries, and associated civil wars. In the case of Namibia, over whom the mandate by South Africa was not internationally recognised, there was an added problem in that prior to independence in 1990, an EEZ could not be proclaimed. In an attempt to control foreign exploitation of Namibia's fish resources, the International Commission for the Southeast Atlantic Fisheries (ICSEAF) was established, but this proved to be relatively ineffectual at husbanding the fish stocks. Until fairly recently, environmental issues and sustainable management were low priorities on the political agenda in South Africa. Moreover, the legacy of the past has resulted in a marked gradient in capacity from south to north in the region. Consequences of civil wars have been the population migration to the coast and localised pressure on marine and coastal resources (e.g. destruction of coastal forests and mangroves) and severe pollution of some embayments.

Threats to the System

6. In addition to the above-mentioned issues, the countries have identified a number of threats to, and issues associated with the management of the BCLME. These include:

- Habitat loss and pollution of the fragile and relatively pristine nature of the coast of the Benguela region due to uncontrolled tourism development and the ongoing expansion of rural areas;
- Serious degradation of coastal areas adjacent to urban centers in the southern part of the region as a result of pollution, habitat loss and the unsustainable exploitation of marine and coastal natural resources;
- Increasing exploitation of the marine biomass by both artisanal and industrial fishers in the absence of an agreed long-term regional strategy for the sharing of a sustainable economic yield;

- Increasing problems of human and ecosystem health caused by introduced species, especially of algae derived from ballast water, and other ship discharges of non-indigenous species;
- Ongoing mineral and petrogenic energy exploration and production both offshore and in coastal areas, with their attendant pollution and consequent habitat degradation risks;
- An apparent increase in the frequency of marked environmental changes in the ecosystem manifesting themselves through fluctuations in abundance and distribution of fish, birds, and mammals;
- Significant losses of biomass among higher order species of the ecosystem, most notably sea-birds and turtles; and
- An apparent opportunity for important climate change monitoring since the BCLME is both a source and a sink of carbon dioxide and a known predictor of climatic variations in the region.

II. Rationale And Objectives (Alternative Course Of Action)

7. The outputs and activities of this project have been driven by the results of the TDA, (Project Brief, optional, Annex H) and the SAP (full text of SAP, Project Brief, optional, Annex I; Summary of the Functions and Responsibilities of the Interim Benguela Current Commission (IBCC) Project Brief, optional, Annex J) that were developed by the countries as part of their work under the PDF-B. The major transboundary issues confronting the countries as they attempt to sustainably manage the resources of the BCLME are as follows:

- Ø A decline in BCLME commercial fish stocks and non-optimal harvesting of living resources;
- Ø Uncertainty regarding ecosystem status and yields in a highly variable environment;
- Ø Deterioration in water quality – chronic and catastrophic;
- Ø Habitat destruction and alteration, including *inter alia* modifications and seabed and coastal zone and degradation of coastscapes;
- Ø Loss of biotic integrity and threat to biodiversity;
- Ø Inadequate capacity to assess ecosystem health; and
- Ø Harmful algal blooms

8. The actions identified in the SAP are far-reaching and involve on-going, funded activities by the countries, regional organizations, the GEF, other donors, and private industry. These activities are included and briefly described in the project section dealing with co-finance, associated finance, and baseline assessments. Successful implementation of the SAP will depend upon well coordinated actions of the full-range of affected stakeholders, which include, *inter alia*, governments at all levels, regional organizations, the private sector, non-government organizations (NGOs), Implementing Agencies (IAs), donors, and commercial and artisanal fishers. Such a level of global and regional cooperation will entail substantial transaction costs but the effort and the costs are indispensable to successful project implementation. A central element of the SAP, the IBCC and the eventual Benguela Current Commission are further described in the Sustainability Section of this proposal.

Long-term Project Objective

9. The long-term objective of the project is to undertake the array of priority measures as identified in the Transboundary Diagnostic Analysis and the Strategic Action Program, in conjunction with the on-going efforts of the participating countries, donors, regional organizations, industry, NGOs and other affected interests, to bring about the integrated, sustainable management and protection of the Benguela Current Large Marine Ecosystem.

III. Rationale For GEF Financing

10. The projected outputs, activities, and relationship of those outputs and activities with those of the countries, regional entities, and other donors are seen as compatible with the three elements of the GEF-funded International Waters activities to meet the incremental costs of:

- a) assisting groups of countries better understand the environmental concerns of their international waters and work collaboratively to address them;
- b) building capacity of existing institutions, or through new institutional arrangements, to utilize a more comprehensive approach for addressing transboundary water-related environmental concerns; and
- c) implementing sustainable measures that address priority transboundary environmental concerns.

11. The Council Member from France asked that a concerted effort be made to ensure that work undertaken during the project be directly applicable in terms of improved management of fish stocks, pollution prevention, and environmental protection. While it is true that the largest share of the project cost is for studies and knowledge acquisition, it must be borne in mind that the GEF project is an integral part of the Benguela Current Large Marine Ecosystem Programme, of which the country-endorsed, GEF sponsored Strategic Action Programme (SAP) is a part. Further, implementing real-time management requires the collection of data in fluctuating systems, and this will improve the management of fish stocks. The specific measures that will be developed and taken to manage fishstocks will be determined by the Interim Benguela Current Commission (IBCC) and ultimately the Benguela Current Commission (BCC). The creation of the IBCC and the BCC are salient features of this project. The countries intend that the BCC shall operate over the long term and thus ensure project sustainability.

12. Further, the Strategic Action Programme lists specific country commitments that are to be the subject of implementation as part of the overall Benguela Current Large Marine Ecosystem Programme. The SAP contains lists of specific issues that the countries will address in specific ways based on advice they will be receiving from the Interim Benguela Current Commission (IBCC) the creation of which is a specific activity of the GEF funded project. Such issues include, *inter alia*, the harmonizing of country specific approaches to shared fish-stocks; fishery conservation methods; cumulative impact assessment; development of an environmental early-warning system; actions to address harmful algal blooms (HABs); the harmonization of environmental quality objectives; harmonization of oil spill contingency plans; and addressing maritime litter. Seen in this light the GEF project makes possible the institutional base and provides the expertise and knowledge base necessary for the countries to implement the general and specific objectives that they have committed to in their jointly developed and approved SAP. These implementation activities will continue under the institutional framework of the IBCC and, when fully ratified, the Benguela Current Commission (BCC).

IV. Project Outputs/Components and Expected Results

GEF project objectives and activities:

Output 1: Effective intra and inter-project coordination and support through the establishment of a Program Coordination Unit (PCU) leading to the creation and functioning of the Interim Benguela Current Commission, and the identification of, and provision of resources for, Lead Agencies and Inter-ministerial Committees in each of the participating countries.

Rationale:

13. There is a continuing need for a core-coordination unit similar to that which facilitated the work undertaken during the PDF-B. The three countries have expressed their satisfaction with a core coordination concept and have clearly stated their desire to see this concept continued during the SAP implementation phase. The PCU would be instrumental in securing the requisite amount of transnational

and cross-institutional collaboration (international and regional organizations and donors) necessary to the success of the Project. The core-coordination unit is seen to be a transitional management entity that will be replaced as part of an orderly transition by the Benguela Current Commission (BCC). Recognizing that negotiations leading to a legal entity such as the BCC will take time, the countries have agreed to the immediate creation of an Interim Benguela Current Commission (IBCC). The IBCC has clearly defined roles and responsibilities that are described in the SAP. As the IBCC matures, it will increasingly take a leadership within the project and, eventually, the core-coordinating unit of the project will become the core-coordinating unit of the IBCC and, later, the BCC. The IBCC will be expected to play the key role in updating as necessary the existing SAP as the project is implemented. This updating will be completed after year four of the project. More precise transition arrangements from the IBCC to the BCC, and the role of the project during this transition, are spelled out in the Implementation Arrangements section of this Project Brief.

- Output 1.1** Chief Technical Advisor (CTA), requisite technical, administrative and secretarial support, and requisite public participation and communications expertise recruited and hired;
- Output 1.2** The PCU created and organized;
- Output 1.3** The Project Steering Committee created and provision made for the conduct of its meetings;
- Output 1.4** Assistance is provided to the participating countries for the creation of country specific Interministerial Coordinating Committees to continue the identification of country-specific, project related priority actions in support of SAP implementation and for updating of the SAP after year four of the project.
- Output 1.5** In consultation with the respective GEF country focal points, other government officials as necessary, and the UNDP Country Offices, a Lead Agency is designated for each participating country and a senior official is named to assume leadership of project activities and represent the participating country in meetings of the Project Steering Committee (PSC);
- Output 1.6** Assistance provided to the participating countries for activities related to the creation and functioning of the Interim Benguela Current Commission and, to secure the provision of scientific advice, assistance to the Benguela Environment Fisheries Interaction and Training Program (BENEFIT); and
- Output 1.7** Assistance provided to the participating countries for the coordination of communication with other, related GEF projects in the Canary Current, Guinea Current, Ballast Water and other GEF or comparable Large Marine Ecosystem projects at the global level. Participation in IW:LEARN and Train-Sea-Coast to facilitate inter-project sharing of best practices and lessons learned in LME and related projects.
- Output 2.** **Creation of the necessary mechanisms for, and steps undertaken to develop real-time management capability to better sustain and utilize the resources of the BCLME.**

Rationale

14. Work undertaken during TDA development resulted in the conclusion that the sustainable development and utilization of BCLME resources required the facilitation of the optimal harvesting of living resources; an assessment of other anthropogenic impacts and natural environmental variability on these resources and the ecosystem (see Outputs 3 and 4); an assessment of the impacts of mining and drilling in the waters of the BCLME and policy harmonization among countries for those activities; the responsible development of mariculture; the protection of vulnerable species and habitats; and an assessment of non-harvested species and their role in the ecosystem.

15. The countries have committed themselves to the following more integrated approaches related to the sustainable management and utilization of resources of the BCLME. They will undertake this

commitment through the activities envisioned in this project, through their participation in the projects sponsored by other donors, their ongoing national programs, and their commitments undertaken in the SAP.

Output 2.1 The development of plans, concrete actions and timetables to achieve optimal sustainable living marine resource utilization.

16. The *causes* of the non-optimal use of living marine resources include fishing over-capacity, inadequate tools to assess the extent of non-optimal, non-sustainable use, the lack of collaborative assessment and monitoring, insufficient attention to the need to implement an ecosystem approach to management, inadequate information, inadequate management, inadequate control (e.g. fishing and pollution), lack of collaborative management of shared resources, and international policy on seal harvesting. The *impacts* of non-optimal use include, *inter alia*, high by-catch and undersize catch, negative impacts on the productivity cycle (due to extraction of higher trophic level species), short and long-term ecosystem change, resource depletion, human population movements at local and regional levels, large variations in landings, variation in food supply for birds, seals, etc., conflicts among users (e.g. artisanal vs. commercial fishers). The *risks and uncertainties* associated with non-optimal use include irreversible ecosystem change, changes in biodiversity, habitat destruction, and the collapse of commercially important stocks. *Socio-economic changes* include a variable and uncertain job market, loss of national revenue, lack of food security, erosion of sustainable livelihoods, missed opportunities, i.e. under-utilization and wastage, and loss of competitive edge in global markets.

17. The *transboundary relevance* of increasing knowledge about the abundance, distribution and ecosystem role of presently non-harvested species comes of an understanding that country boundaries do not correspond with ecosystem boundaries, that most of the region's important harvested resources are shared between countries, and that they move across national boundaries at times. Over-harvesting of species in one country can therefore lead to depletion of that species in another, and in changes to the ecosystem as a whole. Moreover, many resource management difficulties are common to all of the participating countries and thus the shared experience of participation in the project will yield shared learning experience.

18. *Activities and solutions* foreseen include the collection, synthesis and proper use of information to facilitate reports on biological resources, annual state-of-the-ecosystem reports, and the provision of advice and recommendations for living marine resource harvesting levels and other matters related to resource use, particularly fisheries. There will be the creation of the Interim Benguela Commission whose functions and responsibilities will include, *inter alia*, the production of annual stock assessments, annual ecosystem reports, the provision of advice on harvesting resource levels, and other matters related to resource use, particularly fisheries. A more complete description of the functions and responsibilities of the Interim Benguela Current Commission can be found in Project Brief, optional, Annex J. Organizations such as SEAFO, while also working to address the issue of sustainability in the BCLME, are comprised of member countries that are not situated directly on the BCLME, and are not legally constituted to accomplish the tasks that the countries wish to have performed by the IBCC, and later, the BCC. As a result, there is interest in establishing a separate entity comprised of the three nations that do directly border the resource and that have specific, regionally based authorities regarding action in the BCLME. The result of activities undertaken by the participating countries will be measurable reductions in the exploitation of specifically identified natural resources and the provision of information on transboundary components of the ecosystem which could enable the governments to take appropriate management/conservation actions, either singly or jointly. Other results will include improved forecasting, steps to assist in the prevention of irreversible ecosystem change, and the development of training manuals on management, enforcement, and opportunity creation.

Output 2.2 An assessment of the resource use impacts of mining and drilling activities and development of policy harmonization among participating countries with regard to mining and drilling uses.

19. The TDA identified the principal *causes* of real or potential problems associated with mining and drilling impacts and include the building of pipelines which traverse parts of the BCLME or onshore pipelines in the proximity of the marine environment, drilling and dredging in the marine environment, and seismic exploration. The potential *impacts* of these activities include habitat destruction seabed modification, coastal soil, beach, intertidal and subtidal profile destruction, conflicts with other resource users, smothering of benthic fauna and the mortality of pelagic larvae due to sediment plumes. *Risks and uncertainties* associated with these activities include cumulative impacts, effects on benthos, biodiversity change, and cost-benefit questions. The *socio-economic consequences* potentially include financial and employment benefits to mining consortia, impacts on miners of exclusion zones and reserves, reduced artisanal fisheries, effects on coastal tourism, post-mining effects on coastal communities, and effects on onshore development.

20. The potential *transboundary consequences* involve the uncertainty of the cumulative effects of the mining and drilling on benthos that is occurring in the participating countries. Although most impacts appear localized, habitat alteration due to mining can cause migration of fauna and increase the potential for system wide ecosystem change. In addition certain mining activities conducted close to national boundaries could quite easily result in a transboundary effect and have negative consequences in a neighboring EEZ. The transboundary nature of the issue is also engaged by the fact that the oil/gas and diamond industries in the three countries are now working together to consolidate baseline information, and this consolidation will be accelerated as a result of the project. Further, there is a need to standardize regulation among the participating countries as a means of avoiding the adoption of lowest common-denominator approaches in the name of competition.

21. *Activities and solutions* include policy harmonization among the countries, enhanced consultation between and among sectoral interests, cumulative impact assessments of oil and mining activities in the BCLME, and a country agreed regional, integrated environmental plan that would include steps to ensure the effective management of mining impacts and the development of necessary post-mining activities.

Output 2.3 Country agreement on measures necessary to ensure the responsible development of mariculture.

22. The *causes* of or *dangers associated* with the development of mariculture include a failure to develop appropriate policy and legislation in advance of the development of the industry, differential policy approaches within each country, lack of enforcement, lack of adequate space, and a lack of information on safe and appropriate practices on the part of the mariculture industry. Potential negative *impacts* of mariculture include a threat to biodiversity including genetic stocks, species introductions, disease, conflict over limited space, competition for markets, and eutrophication. *Risks and uncertainties* include environmental variability, market uncertainty, and questions related to economic feasibility. The *socio-economic considerations* of mariculture include opportunities for job creation and sustainable livelihoods, revenue generation, potential tourism loss in heavily utilised areas and the introduction into the region of a potential growth industry.

23. The potential *transboundary consequences* include the possibility of biological invasions into adjacent countries by alien species, and threats to regional biodiversity. Cooperative transboundary activities that promote the responsible development of mariculture will minimize negative environmental consequences and may help reduce the pressure on traditionally over-harvested resources. Further, differences in policy among countries could lead to conflict (e.g. as a result of the spread of disease from one country to another, an alien species invasion of the regional ecosystem from a country point source, or market conflicts), and differential development of the industry.

24. *Activities and solutions* include a socio-economic assessment of mariculture's potential in the region, feasibility assessments, the formulation of harmonized policy for the region, and the development of sustainable mariculture training packages aimed at managers, communities, and potential entrepreneurs.

Output 2.4 Development of measures to achieve protection of vulnerable species and habitats.

25. The TDA identified the *causes* of species and habitat loss as including salt production, population migration to coastal areas, coastal pollution (including that from offshore mining), over-harvesting of commercial species, by-catch, the competition for space and prey (e.g. seals, birds, and humans), and potentially destructive fishing practices such as benthic trawling. Impacts associated with these causes include threats to the global biodiversity value of coastal bird populations, regional ecosystem change, loss of wetlands, loss of fish spawning grounds, reduced populations of affected species, and increased competition for over-exploited resources. The TDA did not identify any *risks and uncertainties*. Potential *socio-economic consequences* deriving from the current lack of sufficient attention to vulnerable species and habitats include losses in tourism numbers and overall revenue as marine mammals, seabirds, turtles and their habitat contribute extensively to the ecosystem's appeal to tourists and downstream effects of habitat loss on economics of fisheries operations.

26. Identified *transboundary consequences* include the observation that most vulnerable species (e.g. orange roughy), including several endemics (e.g. pelagic gobies), occur throughout the region or migrate between countries, thus ensuring that national activities and policies are likely to have transboundary consequences. Past over-exploitation of targeted species has altered the ecosystem as a whole, having an impact at all levels including top predators and resulting in a reduction of the gene pool. Some species (e.g. African penguin) are threatened or endangered. Exotic species have been introduced into the BCLME (e.g. European/Mediterranean black mussel) displacing endemic species and altering the ecosystem. Some vulnerable habitats occur regionally (e.g. wetlands and lagoons), while others in one country (e.g. mangroves) are of importance to migratory species which move across national borders. These considerations make it necessary to harmonize, to the extent possible, national policies to protect vulnerable habitats and species throughout the ecosystem, such as existing Ramsar sites.

27. *Activities and solutions* would include an assessment of the status of vulnerable species and habitats strengthening the national level work that has begun in some of the participating countries. The overall outputs would be a report on the overall status of the ecosystem, the impacts of human activities on the relationships among non-consumptive resources (including non-harvested species), together with recommendations for appropriate national and regional level species and habitat protection approaches.

Output 2.5 Develop an understanding of the relationship between harvested and non-harvested species and determine the role of non-harvested species in the ecosystem as a means to improve stock management practices and to assist in the conservation of biodiversity;

28. The role of non-harvested species in the ecosystem is largely unknown – except at a quite generic level. The *causes* of this absence of necessary, specific information is simply that, with few exceptions (e.g. some seabirds and marine mammals) assessment of non-harvested species has not been a priority and thus not conducted. Some non-harvested species are likely to have high biomass (e.g. lantern fish) with high potential for harvesting, and with it job creation and the lessening of pressure on currently over-exploited resources. However, the *impacts* of harvesting “new species” on food webs and on currently harvested species are uncertain and thus lead to increased *risks and uncertainties*. These relate to lack of information on predator-prey relationships, large, currently unmeasured biomass (e.g. lantern fish and gobies), market potential, economic viability, unknown impacts of harvesting, and the impact of pollution. Socio-economic considerations associated with unharvested species include potential to increase regional food security, job creation, and revenue generation.

29. The *transboundary relevance* of increasing knowledge about the abundance, distribution, and ecosystem role of presently non-harvested species stems from the fact that many of these species are known to straddle or thought to straddle geopolitical boundaries. It is quite conceivable that, should one country commence harvesting of such species in the absence of adequate knowledge and without a proper understanding of the general biology and distribution dynamics, the result could be a negative impact on the ecosystem as a whole and on existing user rights of neighboring countries which presently target higher trophic level species. Sharing of knowledge, and understanding between and among countries with respect to non-harvested species is thus a responsible management approach within the BCLME and a key to the responsible, integrated management and future utilization of “new” resources. National decisions to proceed with the harvest of currently non-harvested species would be best undertaken through discussions with those nations who share the regional ecosystem. Success in the work of this output will likely be useful to, and replicable in, other regions of the world where there is a need to address transnational issues related to the shared use of LMEs.

30. The *activities and solutions* associated with this output would include dedicated joint surveys and assessments of non-harvested species to provide a baseline for integrated ecosystem management and development of an ecosystem model for such management.

Output 3. Improved understanding of BCLME environmental variability, ecosystem impacts created by environmental variability, and thus improve predictability as a means of strengthening the management of fish-stocks;

31. Work undertaken during the TDA demonstrates that the long-term sustainability of the BCLME requires a major effort to reduce the significant amount of uncertainty re. environmental variability and its ecosystem impacts, and thus improve the current level of system predictability. It also resulted in the understanding that there was a need to strengthen national and regional capacity and training to that end. The consequences of harmful algal blooms and the need to act on them was also a conclusion of the TDA. As with Output 2, the countries, through the activities envisioned in this project, through their participation in the projects sponsored by other donors, their ongoing national programs, and their commitments undertaken in the SAP have committed themselves to the following more specific outputs related to the sustainable management and utilization of resources of the BCLME:

Output 3.1 A reduction in uncertainty and improvement in the predictability of the BCLME as a means to improve management of regional (LME) resources.

32. The BCLME is a complex and highly variable system for which there is evidence of system change and fragmentary but important evidence of increasing instability/variability. Scales of variability include: large scale sustained events, decadal and other long and mid-term climatic changes, and high frequency of short-lived events and/or episodic events. It is the longer term changes that have the most significant impact on the living marine resource. Human impacts on the BCLME (e.g. fishing, pollution, coastal development) are superimposed on this inherent natural variability, and the combined effects of anthropogenic disturbance (e.g. climate change) and natural variability have been implicated in ecosystem change and the collapse of harvested resources. There is also considerable uncertainty regarding ecosystem status and yields. Lack of information about and understanding of environmental variability and system wide impact hampers sustainable management of the BCLME resources and results in the non-optimal utilization of these resources.

33. *Causes* associated with uncertainty and poor predictability include the complexity of the processes involved, a poor understanding of these complex processes and cause and effect relationships, a poor understanding of the role of global driving forces, lack of data and information, inadequate mathematical models, and a lack of capacity to address these issues. *Impacts* and ecosystem consequences of the environmental variability are, *inter alia*, changes to coastal ecosystems from altered winds (strength and

direction), including changes in coastline, changes in coastline morphology, and damage to coastal infrastructure, unpredictable variations in zooplankton and fish egg/larval survival, unpredictable changes in fish growth, unpredictable changes in species abundance, composition, distribution and availability, regime shifts, cross-boundary fish, seabird and seal movements, change in flux of CO₂, methane and H₂S between atmosphere, ocean and sediments, difficulties in managing resources sustainably, operational difficulties with resource utilization, and assessment of anthropogenic impacts. Unless this inherent uncertainty is reduced and predictability increased it will be extremely difficult to more effectively manage such *impacts* as changes to coastal ecosystems.

34. *Risks and uncertainties.* A risk to the sustainable use of the BCLME as a consequence of the inadequate information and understanding of the environmental variability and its ecosystem impacts (i.e. poor predictability) is that these natural processes, super-imposed on fishing and other forms of human use of the ecosystem, including climate change, could result in major ecosystem changes, collapse of key fish stocks, and threats to biodiversity. The risk associated with attempts to improve predictability of variability and ecosystem consequences is that the system may be so complex as to make forecasting problematic (for example separation of anthropogenically-driven long term net change from natural cycles). Potential *socio-economic consequences* of poor predictability include uncertain employment (job losses and gains), over and under-utilization of resources, lack of food security, human population movements, high production costs, national/regional conflict, reduced capacity to support artisanal fisheries, and unpredictable changes in government revenue, private income and exports.

35. The *transboundary relevance* includes, *inter alia*, consequences for global climate change (carbon dioxide and methane flux), and the potential for shifts in regional distribution of biota, loss of species/biodiversity, altered food webs, and disruption of faunal migrations. They also include unsustainable management of shared and straddling fish-stocks, altered fish spawning patterns and population shifts, unpredictable fluctuations and availability of fish-stocks, unpredictable and variable distribution of fishery benefits, regional economic instability and unemployment, and regional conflicts among users. More specifically, the Benguela environment is highly variable and the ecosystem is naturally adapted to that variability. However, sustained large-scale environmental events such as Benguela Niños, episodic hypoxia/anoxia, Agulhas intrusions and changes in winds all affect the ecosystem as a whole, compounding negative effects from fishing. These events and changes generally have their origin and cause outside of the BCLME, but are of such a scale that the impacts occur in BCLME international areas of the three countries, i.e. the changes are transboundary in nature. The poor ability to predict events and changes limit the capacity to manage effectively system wide. In addition, the BCLME is believed to play a significant role in global ocean and climate processes and may be an important site for the early detection of global climate change.

36. *Activities and more specific outputs* will include development of regional early warning systems for major environmental events/change, participation in and taking advantage of the Global Ocean Observing System (GOOS), the Global Climate Observing System (GCOS), Climate Variability and Predictability Project of the World Climate Research Programme (CLIVAR) and other mechanisms as appropriate, the quantification of the utility/application of the Pilot Research Moored Array in the Tropical Atlantic (PIRATA), in cooperation with the South African Development Community (SADC). Other *activities* and more *specific outputs* include the production of the information needed to design monitoring/predictive systems, quantification of carbon dioxide flux, assembling a record of decadal ecosystem changes, developing a regional environmental analysis/reporting system/network, expanded knowledge and expertise on global climate change links, the establishment of regional advisory groups, establishment of a regional environmental network, and the establishment of links with other GEF LME projects globally.

Output 3.2 Strengthened capacity and the provision of targeted training required to effect improved management of the shared resources of the BCLME;

37. There is a lack of capacity, expertise and ability to monitor environmental variability, to assess the linkages and ecosystem impacts of this variability, and to develop the predictive capability required for sustainable integrated BCLME management. There is also an unequal distribution of capacity availability (human and infrastructure) between and among participating countries. The participating countries, in the endorsed SAP, recognize this issue as being "...a high priority if not the highest priority, in the region." The *causes* of this lack of capacity and targeted training include limited amounts of inter-country exchange of training opportunity, the degradation and downsizing of research institutions, inadequate training programs, lack of recurrent financing, lack of skills to maintain equipment, lack of equipment and supplies, lack of personnel, low salaries, lack of integration of ecosystem concerns in policy formulation, and, associated with much of the above, a regional brain-drain.

38. The *impacts* of limited capacity and inadequate training include poor regional decision making processes, regional imbalances in baseline information, predictive capability, data collection, etc., inadequate and (among participating countries) uneven information to determine indicators of future change, unsatisfactory levels of interaction between and among national and regional level institutions, and information that is not compatible across agencies and among countries. The *risks and uncertainties* associated with the current situation include the question of whether the countries will commit to supporting over the long term capacity development nationally and regionally, particularly in times of political and economic uncertainty. *Socio-economic consequences* of not strengthening capacity include the potential for sub-optimal use of renewable resources due to lack of information, knowledge and understanding required for resource management, unequal resource access (among national and regional interests), absence of full stakeholder participation, creation of conflict between and among users, poorly informed and thus advised governments at all levels, and low institutional sustainability.

39. The *transboundary consequences* of lack of capacity include uncoordinated regional resource management, research and monitoring programs, inability to effectively harmonize management approaches as the south-north capacity gradient leads to uneven research and monitoring effort in the system as a whole, and a continuation of a fragmented, ad-hoc approach to the ecosystem as a whole. *Activities* of this output will include an assessment of capacity needs to address transboundary issues, creation of incentives to retain trained staff, development of training partnerships with the private sector, the creation of regional multidisciplinary working groups, the exchange of personnel between countries to gain and transfer expertise and knowledge, and improved reliance on the Internet to maximize networking. More *specific outputs* will include a written regional strategy for capacity development, a written strategy for job creation, the development and application of training courses, and a public information and environmental education program (one pilot demonstration project in each of the participating countries). It is hoped that demonstrating to the national governments that the benefits to be derived from the development of and suitably trained and remunerated workforce are greater than the costs associated with that effort.

Output 3.3 A program to mitigate the negative effects of harmful algal blooms (HABS) and initiate measures to reduce marine litter.

40. Harmful algal blooms are a conspicuous feature of upwelling systems. The frequency of occurrence, spatial extent and duration of harmful algal blooms appear to be increasing in the BCLME. The harmful effect of these blooms is manifested in two main ways: the production of toxins which cause mortalities of shellfish, fish and humans; and anoxia in in-shore waters which also can lead to massive mortalities of marine organisms. The *causes* of these harmful algal blooms include natural processes, the introduction of cysts in surface waters, nutrient loading of coastal waters from anthropogenic activities, the changing state of the BCLME, and the introduction of exotic species. The *impacts* of harmful algal blooms include, as already mentioned, mortalities among human consumers of contaminated marine organisms, mass

mortality of marine organisms, disruption of mariculture activities, interference with the recreational use of the marine environment, and anoxia which may in turn cause massive mortalities among marine organisms. *Risks and uncertainties* include a potential increase or decrease in incidence and intensity of HABs, the role of HABs as a whole, and the contribution of nutrient loading too the incidence of HABs. *Socio-economic consequences* of not instituting proposed actions include those deriving from human loss of life, loss of tourism revenue, increased cost of shellfish production, and the loss of shellfish/fish/mariculture markets and jobs.

41. *Transboundary consequences* include the incidence and effects of HABs across all three countries, and across national boundaries, thus making regional cooperation highly desirable. The countries, recognizing the need for transboundary action on HABs, have stated in their SAP that they will create “A regional HAB reporting network....during 2001 with a view to its implementation in 2002”, and that “Regional contingency plans for assessing the transboundary effects of HABs will be developed and implemented by December 2002.” The SAP also recognizes that work on HABs will be an essential requirement to develop a plan to bring about regional mariculture policy harmonization. *Activities and more specific outputs* will include the development of an HAB reporting system for the BCLME, the development of regional HAB contingency plans, community projects linked too ministries of health, improvement in national capacities to monitor HAB toxins/species, a HAB regional network, a regional contingency plan, development and distribution of public information materials, and development of proactive management strategies.

42. As populations increase, and as fishers, both commercial and artisinal seafarers, and consumers generally continue to engage in practices that create *marine litter*, the BCLME will experience increasing degradation and certain species will be placed at risk. The *causes* of marine litter include rapid urbanization and unplanned settlement, with variable and limited or no control by local authorities, over-taxed formal waste management infrastructure, lack of public awareness of impacts on ecosystems, “lost” fishing gear and the non-returnable, disposable nature of containers and packaging used in the region. The *impacts* of these causes include dangers posed to biodiversity particularly with regard to plastics that are ingested by organisms causing death. There are also the problems of aesthetic diminution of the BCLME with likely negative effects on tourism. The *risks* and uncertainties associated with marine litter include a lack of information on the exact quantities of these hazardous materials finding their way into the BCLME, a need to identify areas of waste accumulation through natural processes, the positive job impacts (job creation in the informal sector) that may be balanced by an incentive not to litter, and the potential degree of *transboundary movement* of marine litter.

43. *Activities* to address this issue in this phase of BCLME work are quite modest and intended to assist the countries in focusing on this issue of growing importance. *Outputs* will include beginning the process of regional standardization of national policies, initial efforts to increase the extent of current regulatory enforcement of current, the development of additional standards and legislation, and a modest pilot project in Angola for seafarer education.

Output 4 Undertake preliminary steps to maintain BCLME ecosystem health and effectively manage pollution as a means to safeguard fishery and other resources.

44. Coastal development and rapid expansion of coastal cities, much of which was either unforeseen or unplanned, is creating pollution “hotspots” along the coast of the BCLME such as at Luanda Bay, Walvis Bay and Saldanha Bay. These hotspots are undermining the region’s emerging trade strategies that are based on “clean and green” marketing of marine products. Human populations will likely continue migration to coastal areas that will exacerbate existing hotspots and create new problem areas. Under these circumstances an anticipatory approach to minimize future, population related pressure on BCLME resources is necessary and warranted. Further, aging waste-water treatment infrastructure and inadequate policy, monitoring and enforcement is aggravating the problem. A substantial volume of oil is being

transported in coastal areas adjacent to, and across waters of the BCLME. This poses a significant and increasing risk to contamination of large areas of fragile coastal environments damage to straddling fish stocks. In addition, there is a growing problem of marine litter throughout the BCLME. At this point the transboundary impacts of these growing and/or potential problems is unknown, but as these and other pollution issues grow along with coastal populations, undertaking the following, limited, proactive measures will assist in minimizing future damage to the BCLME from pollution effects.

Output 4.1 Develop measures to help prevent major oil spills as a means, *inter alia*, of protecting vulnerable BCLME Ramsar sites.

45. The questionable sea worthiness of some oil transport vessels and poorly equipped vessels, present and possible future military conflict, sabotage, human error, etc. are all potential *causes* of oil spills. The *impacts* of a major spill would include coastline degradation, mortality of coastal flora and fauna, and impacts on pelagic habitat. *Risks and uncertainties* would include the recovery period, the adequacy of cost recovery mechanisms, if any. *Socio-economic consequences* include opportunity costs (e.g. for tourism, fisheries and salt production), altered yields, reduced resource quality, and aesthetic impacts.

46. The *transboundary consequences* of oil spills come of the necessity to develop a regional oil spill prevention strategy. Additionally, the countries believe that resource sharing among them for containment, surveillance, and rehabilitation would make possible a level and quality of response that, acting singly, they could never hope to achieve. Development of a regional approach is also sensible given the fact that spills on the open ocean are quite capable of having transboundary impacts. Further, oil spills also have potentially severe consequences for the three coastal Ramsar sites located in the BCLME.

47. The *specific output* of this activity would be a regional oil-spill prevention strategy building on existing plans in the three countries, with provision made for the sharing of oil spill related resources, the sharing of rehabilitation plans. Cooperation with and learning from the experiences of other on-going GEF projects and other ocean oil and exploration drilling experience at the global level will be undertaken.

Output 4.2 Develop specific programs and measures to address deteriorating coastal water quality.

48. Unplanned coastal development, chronic oil pollution, industrial pollution, sewage, air pollution, the polluting effects of mariculture, lack of ship related pollution policies to deal with waste and oil recycling, and the growth of coastal communities are all contributing *causes* of the growing BCLME pollution problem. The *impacts* are those related to public health threats, reduced yields, unsafe edible organisms, changes in species dominance, ecosystem health and resilience, and job losses (e.g. mariculture, fish processing) across the region. *Risks and uncertainties* associated with a no-action scenario include few or no baseline data from which to work, poor or no performance standards and pollution thresholds to be met by polluters, the question of the extent of the national level commitment to capacity building to engage pollution issues, and questions concerning cause-effect relationships. *Socio-economic consequences* include loss of tourism and its associated revenue, higher health costs, altered yields, reduced resource quality, aesthetic impacts, lowered quality of life, and loss of employment.

49. The potential *transboundary consequences* of pollution include the transport of pollutants across boundaries by way of prevailing currents (although the exact extent and effects are not known), migration of marine organisms as they seek to avoid polluted areas (e.g. Seals and seabirds), and negative impacts on straddling stocks. The countries recognize the strengths that come of taking a regional approach to the issue of coastal pollution. Accordingly, the countries have, in their SAP, committed themselves to the joint development of regional environmental quality indicators, regional proposals for marine pollution control and surveillance, and regional monitoring/inspection of the coastal zone and regional enforcement

of standards. The countries will be placing the emphasis on prevention rather than more costly, after-the-fact remediation.

50. *Specific outputs* will include development of shared solution for water quality management through the use of regional workshops. Outputs will also include three demonstration projects on pollution control and prevention, (development of a regional pollution monitoring framework, training in marine pollution control and support for joint surveillance activities. In addition to these project-related outputs, the SAP includes a participating country commitment to jointly develop water quality criteria for receiving waters by June 2002.

Output 4.3 Specific measures and approaches to retard or reverse habitat destruction and alteration.

51. Several important habitats in the BCLME (e.g. coastal, benthic, and estuarine habitats) have been negatively altered or lost as a consequence of development and other human impacts. The *causes* of habitat destruction and alteration include diamond mining, demersal trawling, variable river sediment input and changing land use, oil and gas exploration, production, and spills, mariculture, natural sediment transport, built coastal structures, human settlement and resource use, mangrove and other coastal forest harvesting, and coastal vehicle tracks. *Impacts* can be categorized into three areas: coastal progradation and redistribution, nearshore (i.e. less than 30 m), and shelf-slope (200m). The more specific impacts of habitat alteration or destruction include increased turbidity (sediment plumes), benthic community destruction, mobilization of heavy metals, faunal impacts (e.g. reproductive failure), increased frequency of HABs, coastal erosion, and increased organic loadings and anoxic conditions. *Risks and uncertainties* include an almost complete lack of data, absence of a framework for impact monitoring, cumulative local vessel impacts, climate change effects, and the problem of distinguishing impacts from natural spatial and temporal conditions. *Socio-economic* consequences include costly infrastructure rehabilitation and maintenance, losses in mariculture production, negative impacts on human health via heavy metal contamination, lost fishery productivity (e.g. rock lobster), and opportunity costs.

52. The *transboundary consequences* include sediment remobilization across national boundaries (e.g. as a result of diamond mining), migrations of marine fauna due to habitat loss, and possible transboundary movement of sediment. As with Output 4.3., a modest effort is envisioned to begin a regional process of engaging this issue. *Specific outputs* will include a comprehensive status report to fully document the current status of habitat loss, development of a regional early warning system and action plan, and an assessment of transboundary causality. Outputs will also include the adaptation and application of existing, standard environmental criteria, adaptation and application of existing regional structures to address problems, and adaptation and application of existing expertise in coastal processes.

Output 5 Recruitment of additional donors and increase the level of co-finance during project implementation.

53. During year one of this SAP implementation project it will be timely to sponsor a donor conference using the GEF project as leverage for the creation of necessary additional donors and, as deemed necessary and appropriate by the participating countries, the securing of loans. The UNDP will partner with the World Bank in these efforts, and the World Bank has agreed to this level of participation. The African Development Bank (AfDB) will also be encouraged to participate. Activities will include:

Output 5.1 Development and implementation of a plan for continuing donor contact;

Output 5.2 Planning and implementation of 2 donor conferences, one shortly after GEF project final approval and one immediately prior to SAP implementation;

Output 5.3 Development of donor conference reports and preparation of a strategy for ongoing BCLME finance.

V. Risks and Sustainability

Commitment

54. The long term success of regional scale marine ecosystem management programs, such as the one proposed here depend, *inter alia*, on the political willingness of the participating countries to cooperate, their willingness to continue project programs and approaches after the life of the GEF intervention, and the extent to which activities successfully engage system users of the resources that are the subject of intervention. For the long term sustainability of the BCLME Program it will be necessary for governments to see clearly, by year five, that the on-going benefits which they will derive from the BCC, and their own further investment in the Program, will be far greater than the costs which would accrue to them if these mechanisms were not in place.

55. In relation to political willingness, the level of project risk is seen as low in Namibia and South Africa and moderate in Angola. Namibia, where fisheries account for ten percent of GDP, has shown a very high degree of technical and political level commitment to the project, and has indicated its strong willingness to continue. South Africa has shown a strong level of interministerial involvement in the PDF-B and, as with Namibia, the level of this strong interministerial commitment is likely to continue in the future. It might well have been expected that civil strife in Angola would have resulted in an uneven commitment of that country to this project. This has not been the case. Interministerial involvement on the part of Angola has characterized its presence at every major meeting of the BCLME, and the fact that two key Ministers, including the Minister of Petroleum, have signed the SAP is indication that the Government of Angola, despite the ongoing civil strife, is committed to the full project. There is a growing realization on the part of the countries that environmental sustainability is inextricably linked to food production, tourism, sanitation, population movements, and thus regional stability. They recognize that their ability to craft an integrated approach to the BCLME is crucial to that realization.

Sustainability

56. The risk of this GEF-initiated program and activities related to it, ending after the life of the project are also seen as low. Country completion of the TDA, a jointly undertaken, interministerial exercise characterized by strong cooperation and openness, led to the creation of the SAP. The SAP itself is a document containing a level of country commitment, particularly through the self-sustaining mechanism of the Benguela Current Commission (BCC), that is thorough in its programmatic approach, clear in its objectives, and specific in relation to the country commitment to sustain important BCLME initiatives after the life of the GEF intervention. The countries will, singly and jointly, continue aggressive attempts to solicit additional donor support during the life of the GEF project and beyond through efforts coordinated by the BCC.

57. It is recognized that negotiations necessary to create the permanent Benguela Current Commission will take some time, perhaps as long as the project itself. Recognizing this, the countries have pledged themselves to immediately create the Interim Benguela Current Commission (IBCC) which will have specified functions and responsibilities. The countries will seek to adopt, through their appropriate national mechanisms, country specific policy/institutional/legal reforms necessary to implement the agreed upon recommendations of the IBCC. The IBCC will be comprised of three representatives from each of the participating countries. Terms of office shall be for six years, thus actually extending beyond the life of the GEF intervention. The IBCC will also have non-voting representation from SEAFO, UNDP, SADC, and the PCU Secretariat. As previously mentioned, other entities such as SEAFO are comprised of members that do not directly abut the BCLME, and thus the countries are interested in establishing a separate entity comprised of the three nations that do directly border the resource. The

World Bank shall be represented on the IBCC for the duration of the project. Specialists and representatives of other stakeholders and regional and international organizations will be invited to join the IBCC from time to time as appropriate. The IBCC shall be supported by five Advisory Groups on fisheries and other living marine resources, environmental variability and ecosystem health, marine pollution, legal and maritime affairs, and information and data exchange. The more specific functions of the Advisory Groups are described in the text of the SAP (see project brief, optional Annex I).

58. Sustainability will also be enhanced by a progressive transfer of project leadership, overall project management and output production directly to the country formed IBCC and, later, the BCC. The IBCC and eventually the BCC will assume the leadership role for the project as those institutions are formed and mature. Specifically, toward the end of year three of the project the PSC will have the opportunity to name a new CTA for the remaining two years of the project. The PSC could at that time, should it so desire, assure progressive transfer of project responsibility to the regional level by acting to hire a regionally-based CTA. Assuming adequate regional capacity has been developed, in year five overall project management will be absorbed into the IBCC or, should negotiations for the formation of the BCC be concluded, that institution, which would have legal standing, would assume project responsibility. The existing PCU would at that time become the Commission core Secretariat, with additional staff resources being provided by the countries themselves as deemed necessary by the Commission and the countries. Last, sustainability will be enhanced through UNDP discussions with the participating countries on the incorporation of project related capacity building assistance into UNDP regular programs.

Financial Sustainability

59. Financial sustainability is enhanced by the country commitment to sustain the Benguela Current Commission beyond the life of the GEF intervention, a continuation and building upon the already substantial level of co-finance for the project (approximately 165% of the GEF contribution), and the strong country and international donor support for the work of BENEFIT, which will serve as the science “arm” of the BCLME project, consistent with the scope of BENEFIT. The SAP, signed by seven Ministers of the participating countries, is explicit in stating that “Member states agree to commit themselves to continuing the BCLME Programme beyond the GEF intervention, and will endeavour to (a) adopt appropriate legislation, (b) implement economic instruments and (c) establish a permanent Benguela Current Commission with a supporting Secretariat. A financial plan that will make provision for future sustainable funding will be prepared, including a study on the feasibility of establishing an Environmental Fund.” The current level of support available to BENEFIT, and the donor and private sector level of support to the project is secure and projected to increase. This will be enhanced by the inclusion of Output 5 in this proposal, an Output expressly targeted to plan and implement donor conferencing to increase the current level of co-finance available to the project and to secure funding that would transcend the life of the direct GEF involvement. In addition, the countries will undertake a feasibility study to determine options to assure continued, self-finance of key program elements including the possibility of instituting fish landing levies to fund such ongoing costs as those associated with the Secretariat of the IBCC and the BCC.

VI. Stakeholder Participation

60. The seed for the BCLME Program was sown at a workshop/seminar held in Swakopmund, Namibia in mid-1995. This paved the way for the development of a PDF Block B Grant Proposal to GEF, and its subsequent approval and implementation in 1998. In July 1998 the First Regional BCLME Workshop, attended by approximately 100 stakeholders and regional and international experts, was held in Cape Town, followed by a formal meeting of key stakeholders. The attendance and proceedings of this workshop are attached to this document as Annex M.

61. Stakeholders have and will continue to include the ministries in Angola, Namibia and South Africa responsible for the environment, marine resources, mines, energy, tourism, science and technology, transport, ports and harbors, etc.; representatives of relevant industry sectors such as diamond mining, fishing (including artisanal fishers), oil and gas (e.g. SONANGOL from Angola); education and training establishments - universities and technikons; regional and local authorities and NGOs. The lead stakeholders are: Ministry of Fisheries and Marine Resources, Namibia; Ministries of Fisheries and Environment, Angola; Department of Environmental Affairs and Tourism, South Africa.

62. The First Regional Workshop identified the issues and problems/constraints in the BCLME and possible solutions. As a follow-up, six comprehensive syntheses and assessments of information on the BCLME (thematic reports) were produced, viz: fisheries, oceanography and environmental variability, diamond mining, coastal environments, off-shore oil and gas exploration/production, socio-economics. These reports were reviewed at the Second Regional BCLME Workshop held in Namibia in April 1999, and used as a basis together with input from the First Workshop and participants for drafting the TDA and setting the SAP framework. Actions subsequently have led to the finalisation of the TDA, SAP, Project Brief and of the BCLME Program.

63. Social assessments included in this project proposal will analyse the costs and benefits of actions, in particular the policy actions, outlined in the SAP. This is a complex task in view of its nature and scope, and can only be undertaken effectively after the BCLME Program has been funded and officially launched. The IBCC and its subsidiary bodies will undertake the social assessments. Several of the key regional policies, frameworks and agreements will be developed by 2003. The countries as part of their commitment in the SAP have pledged to establish five Advisory Groups to help form and inform the process of project implementation. The countries have stated that the "Involvement with relevant NGOs is encouraged, particularly in the improvement of public participation and awareness in all of the focal areas they cover." These activities will include Advisory Groups on Fisheries and Other Living Marine Resources, Environmental Variability and Ecosystem Health, Marine Pollution, Legal and Maritime Affairs, and Information and Data Exchange. The nature and functions of the Advisory Groups will be reviewed on an on-going basis by the PSC. Public Involvement will be enhanced by the creation of a Stakeholder Consultative Committee that will meet annually and act as a forum for all affected Stakeholders. Further provision for public involvement will be made through each of the Outputs of the project and through those respective budget allocations. Provision of financial resources for public involvement will also, where appropriate, be built into the project at the Activity level. Public Involvement resources available for Outputs 2, 3, and 4 will total US \$325,000, exclusive of financial resources that the countries themselves, through their co-finance, will also make available for public involvement activities.

64. While benefits from the BCLME will obviously accrue to the three participating countries and SADC, the principal beneficiary of the BCLME Program will be the regional - and ultimately global - environment as a consequence of the application of sustainable integrated management of the BCLME and the universal application of principles and concepts developed here. The achievement of the sustainable use of the BCLME will benefit the populations in the three participating countries.

VII. Project Implementation, Institutional Framework and National and Regional Institutions

Project Implementation

65. The United Nations Office of Program Services (UNOPS) will be the Executing Agency for the project and on behalf of the three participating countries. The Project will have a Project Steering Committee comprised of the GEF Implementing Agencies, three members from each of the participating countries, and a representative of the SADC and of BENEFIT. The Project Chief Technical Advisor will serve for an initial three-year period, and will be appointed consistent with standard UNDP procedures in

consultation with the participating countries. There will also be a ministerial level, inter-agency and institutional coordinating committee which would meet annually to ensure that maximum use is made of the combined resources of the agencies and institutions with associated projects and to minimize duplication of effort. Participating agencies would include as invitees, among others, the signatories to the SAP.

66. The Implementing Agency (UNDP) role will be to contribute its on-the-ground strength and resulting trust it builds with national governments, directly facilitate workshops and the convening of key stakeholders consistent with its comparative advantage in capacity building, work to secure national country-based financial resources to complement project activities, and provide important links to other UN Agencies. UNDP will also provide administrative support and such as contracting and disbursement and financial reporting. More specifically, as the PCU will be located in Windhoek, Namibia the Namibia UNDP Country Office will serve as the lead Country Office and will be positioned to give appropriate levels of assistance to project activities. Consistent with the designation of the Namibia Country Office as the Lead Country Office, financial provision for this role has been made through the use of the UNDP Implementing Agency fee. The World Bank will assist in the task of securing additional co-finance by way of assuming a lead role in the organization of the proposed donor conferences, and the project has made financial provision for such donor conferences.

Programmatic Linkages to Other Agency Programs

67. The Benguela Current Large Marine Ecosystem Program is closely linked to a number of other national and regional programs involving Angola, Namibia and South Africa. These include a regional fisheries science and capacity building initiative, BENEFIT, which is directed mainly towards fisheries research and training and is being coordinated by the Ministry of Fisheries and Marine Resources in Namibia. BENEFIT will assume a direct responsibility in the execution of a number of program activities specified in scientific, technological, and training elements of the project and resources will be provided to BENEFIT for this purpose. BENEFIT is already functioning as an independent scientific entity that provides on-going transboundary scientific advice to the three countries with regard to the BCLME. The project will strengthen the capacity of BENEFIT to continue and build upon this scientific advisory function.

68. Another regional organization that will play a part in the project is the South East Atlantic Fisheries Organisation (SEAFO), a regional organisation currently being formed that will sustainably manage and conserve the living marine resources of the high-seas convention area in accordance with the principles of long term sustainability, the application of the best science available, the precautionary approach, and the protection of biodiversity. This initiative is also being coordinated by the Ministry of Fisheries and Marine Resources in Namibia and involves Angola, Namibia and South Africa and the UK (St Helena) as well as a number of other countries including the USA, EU, Russia and Japan. Other international, regional and national initiatives that link to the BCLME are, *inter alia*, partnership pelagic fisheries-environment research projects (ENVIFISH and VIBES) between Angola, Namibia and South Africa and marine research institutions in the EU (Germany, Norway, France, United Kingdom, Spain and Portugal) and the European Joint Research Centre in Ispra, Italy and FAO. The BCLME Program will also have affiliation to international programs such as GLOBEC (Global Ocean Ecosystems Dynamics), SPACC (Small Pelagic Fish and Climate Change) and GOOS. These organizations will promote contact with a network of international scientists and provide access to scientific products such as models, training, and new technologies. While all of the participating countries are not members of the Abidjan Convention, the project will establish a working connection with a related GEF LME project in the Canary Current and with the Gulf of Guinea Large Marine Ecosystem.

69. SADC (Southern African Development Community) is a regional intergovernmental body comprising 14 southern African countries including Angola, Namibia and South Africa. Its

responsibilities include the promotion of growth and development, sustainable utilisation of resources and protection of the environment within the community. The BCLME program has formally been ratified as a SADC program at the recent Council of SADC Ministers meeting in Maputo (Mozambique) and falls under the Marine Fisheries Co-ordination Unit of SADC which is located at the Ministry of Fisheries and Marine Resources in Namibia. The SADC will be invited to assume a position on the PSC.

70. Direct and ongoing oversight of project activities will be the responsibility of the PCU, with a planned transition to the IBCC and, upon ratification of a formal Convention or other legal mechanism, the BCC. The PCU will be comprised of a Chief Technical Advisor, Public Participation and Communications Expertise, and requisite administrative and secretarial support. Consultants will be retained as necessary and priority will be given to the recruitment of consultants from the participating countries, as available.

VIII. Incremental Costs and Project Financing

71. The overall cost of the project is US\$ 39,017,750. GEF financing is in the amount US\$ 15,458,000¹. Co-finance from National Governments, private industry, DANCED, BENEFIT, SADC, and Port Authorities are in the amount US\$ 23,559,750. Approximately 85% of the GEF contribution will be disbursed within the participating countries. Regional consultants are preferred and will be used to the maximum extent possible. The amount disbursed within each country will be dependent on a number of factors including competitive bidding for contracts and the availability of qualified consultants required for specific project activities. Parity among the participating countries in relation to distribution of project funds will be in part assured by the fact that each country will have an Activity Center. Full details of the cost of the project, including information related to the baseline, are to be found in Annex A. Following is a tabular summary of the GEF contribution by Output and Activity:

¹ Includes funding from the PDF-B.

Component	Sub-component	Baseline (B)	Alternative (A)	Increment (A-B)						
				Gov ²	GEF	Private	BENEFIT ³	DANCED	Port Auth.	TOTAL
1. Project Co-ordination	Effective intra and inter-project co-ordination and support through the establishment of a PCU	350,000	2,882,323	232,323	2,426,118					2,532,323
2. Management & sustainable use of BCLME resources	2.1 Plans, actions and timetables for sustainable resource utilisation.	175,600,000	184,920,158	1,941,000	3,800,000		3,579,158			9,320,158
	2.2. An assessment of mining and drilling impacts and policy harmonisation	12,170,000	14,028,000	558,000	600,000	700,000				1,858,000
	2.3 Development of mariculture.	5,054,810	5,529,990	155,780	300,000			19,400		475,180
	2.4. Protection of vulnerable species and habitats	1,320,000	2,355,000	525,000	500,000			10,000		1,035,000
	2.5 Assessment of non-harvested species and their role in the ecosystem	14,517,423	15,879,400	162,800	900,000		299,177			1,361,977
3. Assess. of environ. Variability, ecosystem impacts & improvement of predictability	3.1 Reducing uncertainty and improving predictability	87,541,265	102,387,780	9,768,000	3,350,000		1,728,515			14,846,515
	3.2. Capacity building and training for improved shared resource management	13,889,000	14,905,280	345,600	400,000		370,680			1,116,280
	3.3. Harmful algal bloom mitigation and marine litter control	3,016,968	3,919,718	380,000	200,000		150,000	10,250	162,500	902,750

² Includes contribution of \$232,323 from SADC for Project Coordination

³ Includes contributions by: NORAD, DFID, GTZ, ICEIDA, DANCED, IRD, AWB, World Bank

4. Maintenance of ecosystem health and management of pollution	4.1 Oil spill prevention and protection of critical sites from oil spills	8,503,000	8,920,737	295,158	87,373				72,579	455,110
	4.2 Improvement of water quality	17,119,000	19,523,730	1,222,000	945,000				237,730	2,404,730
	4.3. Prevention or reversal of habitat alteration and destruction.	3,284,700	3,962,800	128,100	450,000	100,000				678,100
5. Donor co-ordination and fundraising	5.1 – 5.3 Development of plans for donor support, donor conferences and reporting.	2,887,500	3,593,500	256,000	300,000		150,000			706,000
	Total	345,253,666	382,808,416	15,969,761	14,,258,491	800,000	6,277,530	39,650	472,809	37,818,241

IX. Monitoring and Evaluation

72. Project objectives, outputs and emerging issues will be regularly reviewed and evaluated annually by the PSC. A more detailed description of the monitoring and evaluation processes, including responsibilities for same, is included later in this Project Document as Attachment 3. The project will be subject to the various evaluation and review mechanisms of the UNDP, including the Project Performance and Evaluation Review (PPER), the Tri-Partite Review (TPR), and an external Evaluation and Final Report prior to termination of the Project. The project will also participate in the annual Project Implementation Review (PIR) of the GEF. Particular emphasis will be given to emerging GEF policy with regard to monitoring and evaluation in the context of GEF IW projects. This document generally, and more specifically the logframe in this document, will be used to identify relevant Process Indicators, Stress Reduction Indicators, and Environmental Status Indicators that will serve to inform the M&E process and be adopted by the participating countries. These three indicators will be more explicitly identified and incorporated into the project as project outputs after year one of the project, and completion of the negotiations necessary to form the BCC would be a Process Indicator at the end of the project. Another especially important Process Indicator will be the updated SAP that will be created by the end of year four of the project. The project logframe has been specifically designed in a way that lends itself to the straightforward identification of Process, Stress Reduction, and Environmental Status Indicators.

73. During year one of the project, the PCU will identify the relevant Process Indicators (PIs), Stress Reduction Indicators (SRIs) and Environmental Status Indicators (ESIs) relevant to the project. These indicators will be reviewed as part of the initial monitoring and evaluation exercise and upon their adoption will become a basis for the ongoing monitoring and evaluation process. The Logframe Analysis incorporated into the Project Brief and this Project Document shall be used in significant measure to assist in the identification of the relevant indicators. It is expected that as with many other GEF IW projects, many of the indicators to be employed during the life of the project will be PIs. These would include, *inter alia*, such indicators as the establishment and successful functioning of the IBCC, active negotiations leading to the eventual BCC, State of the Ecosystem Reports, the establishment and effective functioning of IMCs, and work to assess the extent and condition of non-harvested species. SRIs might include, *inter alia*, recommendations and agreements regarding the harvesting levels of specific stocks, improved forecasting techniques with resulting positive environmental, economic and social benefits for the participating countries, harmonized and implemented common approaches to mariculture activities, explicit measures for the protection vulnerable species, improved predictability of the BCLME resulting in decreased levels of uncertainty of management decisions taken both nationally and regionally, and specific improvements in the capacity to monitor HAB toxins and species. While ESIs are likely to become more apparent after the life of the GEF project, there are likely to be some ESIs that are likely to be realized during implementation. These ESIs would include, *inter alia*, the establishment of protected areas, reduced pressure on, and documented healthier stocks of vulnerable species and measurable reduction of pollution loadings in those areas selected for pilot activities in identified hotspots.

74. In addition to the monitoring and evaluation described above, monitoring of the project will be undertaken by a contracted supervision firm, and by a balanced group of experts selected by UNDP. The extensive experience by UNDP in monitoring large programs will be drawn upon to ensure that the project activities are carefully documented. There will be two evaluation periods, one at mid-term and another at the end of the Program.

75. The mid-point review will focus on relevance, performance (effectiveness, efficiency and timeliness), issues requiring decisions and actions and initial lessons learned about project design, implementation and management. The final evaluation will focus on similar issues as the mid-term evaluation but will also look at early signs of potential impact and sustainability of results, including the contribution to capacity

development and the achievement of global environmental goals. Recommendations on follow-up activities will also be provided.

76. Approximately US\$160,000 will be allocated for the monitoring and evaluation (M&E) and Tripartite Reviews (TPRs) which will be undertaken by independent experts and UNDP. This figure will be the subject of ongoing review and budgetary adjustments will be made as necessary. The evaluation process will be carried out according to standard procedures and formats in line with GEF requirements. The process will include the collection and analysis of data on the Program and its various projects including an overall assessment, the achievement of clearly defined objectives and performance with verifiable indicators, annual reviews, and description and analysis of stakeholder participation in the Program design and implementation. Explanations will be given on how the monitoring and evaluation results will be used to adjust the implementation of the Program if required and to replicate the results throughout the region. As far as possible, the M&E process will be measured according to a detailed workplan and a Logical Framework Analysis approach developed and tabulated in the project document.

X. Lessons Learned and Technical Reviews

77. The project will be involved from the start in the GEF International Waters Learning, Exchange and Resource Network Program (IW: LEARN). IW:LEARN is a distance education program whose purpose is to improve global management of transboundary water systems. It will provide structured interactive conferencing capability across and within the GEF International Waters Portfolio and will allow participants in GEF IW projects to share learning related to oceans, coastal zone management and river basins in Africa and in other development regions. For environmental professionals working on GEF related projects IW:LEARN will greatly expand opportunities for peer to peer, collaborative research with physically distant colleagues, opportunities to exchange best practices and training modules among projects, and the delivery of short courses.

List of Mandatory Annexes

Annex A	Incremental Cost Narrative
Annex A1	Co-Finance Narrative
Annex B	Full Incremental Cost Matrix
Annex C	Logical Framework Analysis
Annex D	STAP Review
Annex E	Response to STAP Review
Annex F1	Country Actions
Annex F2	Narrative for Baseline Table Annex G3
Annex F3	List of Relevant Baseline Programs/Projects (Ongoing/Planned) by Country/Region

List of Optional Annexes (see project brief)

Annex G	Full Transboundary Diagnostic Analysis
Annex H	Strategic Action Programme (SAP) and SAP Country Commitments
Annex I	Summary of the Functions and Responsibilities of the Interim Benguela Current Commission
Annex J	Thematic Reports Prepared during the PDF-B Project Phase
Annex K	BCLME Regional Workshop Reports and Scientific Papers
Annex L	Stakeholder Involvement Description and List of Stakeholder Participants

List of Attachments

Attachment 1	Detailed Project Budget
Attachment 2	Detailed Project Timeline
Attachment 3	Monitoring and Evaluation Details
Attachment 4	Monitoring and Evaluation Results/First M&E of the GEF BCLME Project
Attachment 5	Reporting Requirements and Legal Context

Attachment 6 Implementation and Execution Arrangements
Attachment 7 Project Terms of Reference

Annex A: Incremental Cost Narrative

Broad Development Goals

The Benguela Current system, bordering the Atlantic seaboard of Angola, Namibia, and South Africa is one of the most productive marine systems on the planet. It is also highly sensitive since it is driven by coupling of fluctuating atmospheric and oceanic circulation. These in turn are subject to regional and global driving forces and to global change. Without a good understanding of these processes, exploitation of the fisheries resources of the Benguela Current is an empirical process that carries high risk of over-exploitation leading to poor sustainability and damage to biological diversity. This indeed occurred in the 1970's and some of the fish stocks have still not recovered thirty years later. Furthermore the Benguela Current is facing an unprecedented array of other human-caused threats, highlighting the need for rational regulation of its exploitation and additional measures to protect its fragile coastal ecosystems. The Benguela system is truly transboundary in nature, including the EEZs of the three coastal countries as well as a significant region of the high seas. All of the littoral countries are urgently seeking to address shared environmental problems and to protect and sustain their coastal economies. The major perceived problems of the BCLME can be summarised as follows:

- 1) Uncertainty as to ecosystem status and yields, together with high variability in resources and environment;
- 2) Habitat loss and pollution of coastal regions, partly through expansion of tourism and of populated rural areas;
- 3) Serious degradation of areas adjacent to urban centres and use of marine and coastal resources;
- 4) Increasing industrial and artisanal fisheries;
- 5) Introduction of exotic species;
- 6) Habitat degradation from oil and mineral exploitation in coastal zones and on the marine shelf;
- 7) An apparent increase in variability in the system, manifested in large fluctuations in natural populations of marine animals and birds;
- 8) Significant losses in higher order species; and
- 9) Its connection to global change, especially climate change.

The project seeks to assist the countries to develop and implement a regional approach to these issues and to reduce the uncertainties currently associated with human exploitation of the system. It will create a sustainable mechanism for co-operation that will be embodied in an international legal and policy framework for co-operation in protection and sustainable use of the BCLME environment. An urgent need for a co-operative framework is evident from the environmental perspective and the need has been clearly pronounced by the littoral states. The project will enable the countries to improve their capacity to work together within this new framework and to establish projects that will ensure a more sustainable future for the EEZ and coastal zone.

Baseline

The need for protection and management of the BCLME environment and its resources has preoccupied the BCLME States for some years. However, during the long period of apartheid in South Africa, there was little co-operation with other African countries on environmental issues or resource exploitation. Despite this situation, there had been a number of actions at a national level within the three countries and each developed its own programme of fisheries management and research and of environmental protection.

With the end of apartheid, a new era in co-operation has begun between the three countries. This has been accompanied by the realisation that the rational exploitation of fisheries requires an integrated approach throughout the BCLME. More recently, largely as a consequence of the formulation of the BCLME TDA, there has been an increasing awareness that other economic activities; mining, maritime transport, urban

development and coastal tourism; each exerts an impact on the coastal and offshore environment that may be transboundary in its consequences. The commitment to co-operate and seek common solutions has been underlined in recent high-level political fora, such as the 1998 Cape Town Declaration and the Council of SADC Ministers at their 1999 Maputo meeting. Without catalytic funding however, these objectives are unlikely to be met.

The economic importance of marine natural resources to the three coastal countries has led to a significant investment in sectoral structures for management, monitoring and research. These ongoing programs form the most important part of the project baseline. The public sector agencies involved include:

Angola

- (1) Ministry of Fisheries and Environment
 - Instituto Investigacao de Pesqueira (IIP)
- (2) Ministry of Petroleum
- (3) Ministry of Energy and Water
- (4) Ministry of Geology and Mines

Namibia

- (1) Ministry of Fisheries and Marine Resources
 - Directorate of Resource Management
- (2) Ministry of Environment and Tourism
 - Directorate of Environmental Affairs
 - Directorate of Resource Management
- (2) Ministry of Mines and Energy
 - Geological Survey
- (3) Ministry of Works, Transport and Communication Maritime Division
 - Maritime Division

South Africa

- (1) Ministry of Environmental Affairs and Tourism
 - Marine and Coastal Management
 - Directorate: Marine Pollution
 - Directorate: Coastal Zone Management
- (2) Ministry of Minerals and Energy Affairs

In addition, there is work going on in the private sector to try to improve sustainability of harvests (in the case of fisheries) and mitigate the local impacts of mining and dredging. Those contributing to this baseline are:

- 1) South African Fishing Industry (Contribution to Marine Living resources Fund)
- 2) Namibian Fishing Industry (Contribution to the Ministry of Fisheries and Marine Resources (Sea Fisheries Fund))
- 3) Diamond mining industry (S. Africa and Namibia)
- 4) Oil and gas industry (Namibia and Angola)

It should be stressed that there is currently no alternative framework to bring each of these sectors together across boundaries.

Besides these activities the countries are engaged in a number of bilateral donor financed activities which are directly or indirectly related to the BCLME particularly in support of improved fisheries management.

Some of these activities represent ‘baselines’ in the context of the current project (see Incremental Cost matrix). Countries contributing relevant bilateral programmes include:

- Denmark
- Finland
- Iceland
- Ireland
- Norway
- USA (USAID)
- UK

The European Union also provides some support.

Of particular importance as a single example of cross-border co-operation is the **BENEFIT** programme (the Benguela Current Large Marine Ecosystem Programme). The main emphasis of this programme is to promote transboundary marine science, technology and training in support of rational fisheries management. The programme thus mostly generates domestic benefits for the three participating countries and little or no emphasis is placed on broader global environmental benefits. It is a solid baseline for co-operative research in the region. Note that the Incremental Costs Table separates the domestic and regional benefits of the BENEFIT programme.

Global Environmental Objective

The global environmental objective of the proposed project is: Environmentally sustainable development and management of the BCLME environment, including living resources and water quality, so as to obtain the utmost long-term benefits for the human populations of the region, while protecting human health, ecological integrity and preserving options for use and enjoyment of the BCLME for future generations.

- The GEF intervention in the BCLME will be mainly based on the following assumptions:
- That the regional and global benefits of co-operation developed in the project will act as an incentive for sustaining the work in the future.
- Even if countries were to take unilateral action, they could not ensure the protection of biological diversity in the marine and coastal areas of the BCLME.
- High transactions costs have impeded regional co-operation to address environmental externalities; these include the costs of communications between countries, building the basis of trust, convening multi-stakeholder fora, learning about current and emergent environmental problems, obtaining regional consensus on the need to intervene, and formulating regional agreements regarding measures to protect the transboundary environment.
- Current donors supporting bilateral and multilateral programmes in the region will be willing and able to co-operate with the GEF in implementing this project.

The potential global and regional benefits that will accrue if these problems are comprehensively addressed will likely be substantial, including the protection of fragile coastal biomes and the maintenance of a diverse marine ecosystem. It will also enable a better understanding of the coupling between regional variability and global change and enable such change to be incorporated into models for resource utilization.

GEF Alternative

This would be accomplished by GEF provision of catalytic support for incremental costs associated with the creation of robust mechanisms for intersectoral cross border co-operation within a Benguela Current

Commission and for implementing the Strategic Action Programme (SAP) for the BCLME, developed during the PDF Phase of the Project. The approach would be consistent with the guidance for GEF Operational Programme Number 8, “Waterbody-based Operational Programme.” The goal of this Operational Programme is to assist countries in making changes in the ways that human activities are conducted in different sectors so that the particular waterbody and its multi-country drainage basin can sustainably support the human activities. Projects in this OP focus mainly on seriously threatened waterbodies and the most imminent transboundary threats to their ecosystems as described in the Operational Strategy. Consequently, priority is placed on changing sectoral policies and activities responsible for the most serious root causes needed to solve the top priority transboundary environmental concerns.

The GEF alternative would support a proposed project to:

- 1) assist groups of countries to better understand the environmental concerns of their international waters and work collaboratively to address them;
- 2) build capacity of existing institutions, or through new institutional arrangements, to utilize a more comprehensive approach for addressing transboundary water-related environmental concerns; and
- 3) implement sustainable measures that address priority transboundary environmental concerns.

This would be accomplished through GEF support to key measures that would be unachievable without the active co-operation of the three countries in the region and of the wider international community. The way in which these measures build upon the considerable national baseline is outlined in the incremental cost table (Annex P). The GEF alternative would achieve its global and regional objectives through the following short-term objectives:

- 1. Effective intra and inter-project coordination and support through the establishment of a Program Coordination Unit (PCU) leading to the creation and functioning of the Interim Benguela Current Commission, and the identification of, and provision of resources for, Lead Agencies and Inter-ministerial Committees in each of the participating countries.**
- 2. Creation of the necessary mechanisms for, and steps undertaken to develop real-time management capability to better sustain and utilize the resources of the BCLME.**
 - 2.1 The development of plans, concrete actions and timetables to achieve optimal sustainable resource utilization.
 - 2.2 An assessment of mining and drilling impacts and development of policy
 - 2.3 Country agreement on measures necessary to ensure the responsible development of mariculture.
 - 2.4 Development of measures to achieve protection of vulnerable species and
 - 2.5 Develop an understanding of the relationship between harvested and non-harvested species and determine the role of non-harvested species as a means to improve stock management practices and to assist in the conservation of biodiversity;
- 3. Create improved understanding of environmental variability, ecosystem impacts created by environmental variability, and thus improve predictability as a means of strengthening the management of fish-stocks.**
 - 3.1 A reduction in uncertainty and improvement in the predictability of the BCLME as a means to improve management of regional (LME) resources.
 - 3.2 Strengthened capacity and the provision of targeted training required to effect improved management of the shared resources of the BCLME;
 - 3.3 A program to mitigate the negative effects of harmful algal blooms (HABS) and initiate measures to reduce marine litter.

4. Undertake preliminary steps to maintain BCLME ecosystem health and effectively manage pollution as a means to safeguard fishery resources.

- 4.1 Develop measures to help prevent major oil spills as a means, *inter alia*, of protecting vulnerable BCLME Ramsar sites .
- 4.2 Develop specific programs and measures to address deteriorating coastal water quality.
- 4.3 Specific measures and approaches to retard or reverse habitat destruction and alteration.

5. Support to recruit additional donors and increase the level of co-finance during project implementation.

The BCLME project represents an interesting case in which the improvement of knowledge of uncertainties will provide a better basis for the sustainable use of natural resources and the conservation of biological diversity. It may prove to be an example of a regime that will be profoundly affected by global change and it is of paramount importance to understand its current status in order to detect contemporary or future changes. The cost of doing this is clearly incremental to the national efforts focused on maximising resource yield through conventional precautionary management strategies.

System Boundary (Scope of the intervention)

The project will inevitably result in a large number of downstream impacts and benefits and care has been taken to include these within the system boundary. This however, becomes somewhat unpredictable with respect to the high seas element of the BCLME that is beyond the jurisdiction of the coastal countries and for migratory species that spend part of their life cycle in other regions. In this respect, it is important to point out that LMEs are open systems without ‘hard’ geographical boundaries. It is reasonable to assume that most of the exploitable resources of the Benguela Current Upwelling area are contained within the Economic Exclusive Zones of the three coastal countries. There are however, a number of bilateral agreements with other countries (notably within the European Community and Russia) for exploitation of resources of the BCLME. These will be indirect beneficiaries of the intervention and are beyond the system boundary. However, it should also be noted that EU countries are major contributors to the baseline and are co-financing the project itself.

Incidental Domestic Benefits

Over the long-term, a variety of domestic benefits would accrue through implementation of the proposed project. The most valuable domestic benefits to be gained from the project are associated with substantially strengthened institutional and human capacity in integrated coastal zone management, increased technical knowledge and public awareness of BCLME environmental issues, and improved national capacities in environmental legislation and enforcement as well as in natural resources management. Additional domestic benefits in terms of exploitable resources are unlikely to be realized within the period of the project itself. Bilateral aid programmes focused on domestic improvements in fisheries management have been included within the baseline in order to clearly distinguish between actions most likely to result in domestic benefits (baseline bilateral projects) from those that will mainly result in regional and global ones (the present project).

Summary Incremental Costs (US\$) :

<i>Baseline:</i>	345,253,666
<i>Alternative:</i>	382,808,416
<i>Incremental:</i>	37,554,750
<i>GEF Financing:</i>	
<i>Project</i>	\$14,258,491
<i>PDF-B</i>	\$344,000
<i>Project Support Costs</i>	\$855,509
<i>Co-Finance</i>	\$23,559,750
<i>Total project Cost</i>	\$39,017,750

Annex A1 – Co-Finance Narrative

The BCLME Programme co-finance is listed in Annex B Incremental Costs/Complete Matrix, where it is identified for each sub-component against “increment” (separate from the GEF contribution). The US\$ figures were derived from the summation of estimates provided by each of the three countries, and details of the origins of the co-finance (viz national governments, donors, industry sectors, port authorities etc) are provided in the Annex B Matrix. The numbers by definition are estimates. National budgets are not fixed five years out, as are the numbers for the GEF project. Thus the figures in the co-finance table are best estimates of country commitments based on existing budgets, current and future predictable priorities, and current and future trends. Governmental budgets are usually only fixed on an annual or not more than semi-annual basis. Nevertheless every effort has been made to make certain that these figures are fairly reliable indicators of the country co-finance which is likely to be provided over the five year GEF intervention to address transboundary issues.

In the comments below, country specific co-finance amounts to approximately 40% of the total from South Africa and from Namibia (approximately US\$ 3,036,000 from each country) and approximately 20% from Angola (approximately US\$ 1,517,000). The South African contribution will be heaviest in the areas of Outputs 2. and 3., as will Namibia’s contribution. The bulk of the contributions will come from ships’ time for much of the scientific work that will be done in Activities 2.1 (Plans actions and timetables for sustainable resource use) and Activity 3.1 (measures that need to be undertaken to reduce uncertainty and improve predictability). Both Namibia and South Africa will be committing co-finance to the establishment and operations of their respective Activity Centres. Angola’s co-finance will be centered on Activities related to oil spill contingency planning (Activity 2.2), improved water quality (Activity 4.2), capacity building (Activity 3.2), and on support for the Activity Centre that is to be located in Luanda.

Specific comments on each of the co-finance estimates, by sub-component, follow:

1. Project Co-ordination: Effective intra and inter-project coordination and support through the establishment of a PCU. *Comment:* The PCU will evolve into the IBCC during year 1 or 2, and will require specific intervention not only from national governments, but also from the SADC Sector Coordinating Unit for Marine Fisheries. The contribution from the Unit will be a combination of cash and in kind.

2. Management and Sustainable Use of BCLME Resources

2.1 Plans, actions and timetables for sustainable resource utilisation. *Comment:* The major part of the \$1,941,000 contribution from national governments will be in cash by way of provisions to utilise national fisheries ships to extend surveys cooperatively over geopolitical country boundaries. Co-finance relating to the BENEFIT Programme is to optimise and give effect to the crucial implementation role that BENEFIT is anticipated to play in the BCLME Programme. Here the co-finance from national governments (primarily although not exclusively Namibia and South Africa) will be to cover additional ship survey costs in the boundary regions, sampling/survey gear and contracting experts to provide assessments of shared living resource species. It is anticipated that much of the BENEFIT co-finance will be as a consequence of the planned first international donor conference (year 1 or 2). All BENEFIT co-finance will be in effect classed as cash.

2.2 An assessment of mining and drilling impacts and policy harmonization. *Comment:* Co-finance from the national governments will be a mixture of in kind (management involvement and infrastructure) and cash (development of appropriate legal frameworks and legislation). Co-finance from the diamond mining and oil and gas industries will be for improving EIAs (scope and quality), legal costs for possible dispute

resolution, and for additional measures needed to assess mining and drilling impacts with the view to minimising environmental damage.

2.3 Development of mariculture.

Comment: Co-finance will come primarily from national governments to enable improved management of mariculture (sustainable development). In this respect, mariculture development is seen as a key vehicle for job creation in impoverished coastal communities to reduce the fishing pressure on inshore resources (and poaching). Co-finance will be to improve monitoring of impacts (eg spread of exotic HAB species) and may also take the form of financial incentives.

2.4 Protection of vulnerable species and habitats.

Comment: Co-finance will take the form of a mixture of cash and in kind contribution by national governments in partnership with donors to review and where necessary to develop and implement new strategies to conserve species and habitats of regional and global significance (cf biodiversity conservation programmes, declaration of marine reserves and protected areas etc).

2.5 Assessment of non-harvested species and their role in the ecosystem.

Comment: The co-finance from national governments will be in kind by way of provision of space and infrastructure on routine fisheries survey cruises to facilitate the collection of material and information on species which are not at present harvested commercially, and also by (in kind) application of eco-path and other ecosystem modelling to new components of the ecosystem.

The BENEFIT Programme's contribution will take the form of developing new initiatives to assess species which cannot be sampled during routine surveys i.e. which require dedicated ship surveys, hiring of consultants, etc (to be financed by national governments and donors which will be considered as cash.)

3. Assessment of Environmental Variability, Ecosystem Impacts and Improvement of Predictability.

3.1 Reducing uncertainty and improving predictability.

Comment: While national governments have invested in the past in environmental monitoring and assessment of "core" areas, little attention has been paid to the crucial internal and external system boundaries, and how changes there impact on the system as a whole. The very significant \$9.8 million co-finance from national governments will in effect be as cash to cover (a) the cost of dedicated ship surveys of the boundary regions and sources (approx \$5 million) and (b) the investment in hardware and systems for long term environmental monitoring and assessment (\$4.8million) which will be identified as necessary during the GEF intervention. (These will take the form of specialised instrumentation, the costs of link up with PIRATA, GOOS and associated international networks, satellite technology etc). The work will be fully integrated with BENEFIT, the co-finance from which is for additional vessel hire costs, contracting of specialists etc.

3.2 Capacity building and training for improved shared resource management.

Comment: Training is a very high priority in all three countries and in BENEFIT. The co-finance specified is additional to on-going expenditure on human capacity development, and will be in the form of in kind (eg in-service training) and cash (specialised courses, payment of study costs, bursaries etc) needed to develop capacity to address transboundary issues and their management. The planned first international donor conference will be the vehicle to secure the funds for the BENEFIT training activities.

3.3 Harmful algal bloom mitigation and marine litter control.

Comment: HABs are becoming an increasing problem in the BCLME with serious transboundary consequences, while litter dumped from ships, including fishing vessels, in particular plastics, requires management intervention. The co-finance shown in Annex B reflects an anticipated increased investment

by national governments in monitoring and implementation (where possible) of control measures, while the BENEFIT co-finance will be for provision of scientific advice in support of such measures.

4. Maintenance of Ecosystem Health and Management of Pollution

4.1 Oil spill prevention and protection of critical sites from oil spills.

Comment: The co-finance from national governments will be to cover the increased costs of addressing the transboundary consequences of oil spills, and minimising transboundary impacts through treatment and containment.

4.2 Improvement of water quality.

Comment: While it has been argued that addressing point source pollution problems (e.g. major ports) does not have transboundary consequences, this is not the case. An example is the spread of cholera across national boundaries on the east-coast which shows just how vulnerable SADC countries can be to transfer of pathogens. The same can be argued for persistent pollutants such as DDT which are again to be used regionally to control malaria. The anticipated government co-finance will be for expanding monitoring networks, development of legislature and compliance (enforcement). Port authority co-finance is for reducing sources of pollution.

4.3 Prevention and reversal of habitat alteration and destruction.

Comment: The amount of co-finance from national governments (\$128000) and the diamond mining industry (\$100 000) provided for this - see Annex B – is disappointingly small and will require upward revision after year 2 of the BCLME Programme. The available co-finance is intended for ship/diver surveys of important areas, developing institutional capacity to address the problems and enabling legislation to minimise further (transboundary) habitat destruction.

5. Donor Co-ordination and Fundraising.

Comment: The identified co-finance (govt=\$256 000, BENEFIT=\$150 000) is by way of investment in actions to secure long-term donor support for the sustainable management of the BCLME.

Annex B Incremental Costs/Complete Matrix

Component	Sub-component	Cost Category	Cost		Domestic Benefits	Global Environmental Benefits
			Source	(US\$)		
I. Project Co-ordination	Effective intra and inter-project co-ordination and support through the establishment of a PCU	Baseline	Namibia	250,000	Countries in the region have some form of institutional framework for the protection of their own coastal and marine environments but these have not developed specific capacity to deal with shared problems within the BCLME.	All countries were actively involved in the preparation of the Benguela Current TDA and Strategic Action Programme. The establishment of interim mechanisms for the PDF phase of the project included a significant contribution from the beneficiary countries.
			Angola	50,000		
			S. Africa	50,000		
			TOTAL	350,000		
		Alternative		2,882,323	Effective coordination and implementation of national activities, 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.	Strong regional body and regional cooperation, enhanced stakeholders coordination and communication at the regional level.
		Increment	SADC Sector co-ordinating unit for fisheries, 1999-2004	232,323		
			GEF	2,300,000		
			TOTAL	2,532,323		
2. Management and sustainable use of BCLME resources	2.1 Plans, actions and timetables for sustainable resource utilisation.	Baseline	National Governments	126,405,000	Bilateral funding is focused on the development of a more rational management of fisheries at a national level. This generates benefits in terms of fisheries yield, though integrated management of the resource is not possible without transboundary co-operation.	Improved national management may generate global benefits for biological diversity but these are difficult to quantify
			Fishing Industry (Levies)	25,273,000		
			Bilateral Donor Aid			
			NORAD (Nansen Programme)	11,868,500		
			ICEIDA	2,912,903		
			IRD	350,000.		
			BENEFIT Pgm			
			National Governments	4,922,400		
			NORAD (Nansen Programme)	3,637,900		
			ICEIDA	212,258		
			FAO	18,900		
			TOTAL	175,600,000		

		Alternative		184,920,158	Well conceived plans for sustainable resource utilisation based upon co-operative studies and forecasting will lead to more sustainable fish yields for all three countries.	Rational management of the resource will conserve ecosystem integrity, avoiding sudden collapses in species through overfishing (already observed in the 1970s).
		Increment	National Governments	1,941,000		
			BENEFIT Pgm			
			National Governments	1,641,000		
			NORAD (Nansen Programme)	1,212,633		
			ICEIDA	707,525		
			FAO	18,900		
			GEF	3,800,000		
			TOTAL	9,320,158		
	2.2. An assessment of mining and drilling impacts and policy harmonisation	Baseline	National Governments	1,590,000	Assessment of local impacts is mandated by national legislation and should mitigate the effects of this activity as far as possible.	Any mitigation of impacts will benefit benthic organisms.
			Diamond Mining Industry	8,630,000		
			Offshore Oil and Gas Ind.	1 950,000		
			TOTAL	12,170,000		
		Alternative		14,028,000	Strong self regulatory code of practice encourages sustainable development at the national level.	Incorporation of the duty to protect biological diversity within the industry code of practice will help to protect global biodiversity.
		Increment	National Governments	558,000		
			Diamond Mining Industry	500,000		
			Offshore Oil and Gas Ind.	200,000		
			GEF	600,000		
			TOTAL	1,858,000		
	2.3 Development of mariculture.	Baseline	National Governments	1,388,096	Mariculture is currently poorly developed in the region. Existing mariculture regulations contain insufficient safeguards for avoiding accidental introductions of species.	None
			Mariculture Industry	3,500,000		
			Bilateral Donor Aid			
			GTZ	138,585		
			DANCED	27,500		
			TOTAL	5,054,810		

		Alternative		5,529,990	The development of mariculture provides alternative employment opportunities, makes use of areas damaged by diamond mining and improves food security (e.g. in Angola)	Properly conceived mariculture has the potential of replacing ecosystem functions lost by damaging benthic communities in mining operations. Proper regulations will avoid accidental introductions of species to the wild.
		Increment	National Governments	0 155,780		
			Bilateral Donor Aid			
			DANCED	19,400		
			GEF	300,000		
			TOTAL	475,180		
	2.4. Protection of vulnerable species and habitats	Baseline	National Governments	910,000	National biodiversity conservation programmes. Currently, these pay little attention to marine and coastal habitats and communities.	Urgent need for the comprehensive overview on the state of BCLME Biodiversity. No regional strategy for the protection of BCLME biodiversity exists.
			Fishing Industry	150,000		
			World Bank	250,000		
			DANCED	10,000		
			TOTAL	1,320,000		
		Alternative		2,355,000	Existence of a co-ordinated strategy will protect migratory species and shared habitats to the benefit of all three countries.	Conservation of habitats and species of global significance. Regional network of protected areas as a part of global one.
		Increment	National Governments	0 525,000		
			DANCED	10,000		
			GEF	500,000		
			TOTAL	1,035,000		
	2.5 Assessment of non-harvested species and their role in the ecosystem	Baseline	Nat. Governments	10,533,800	Existing studies are sporadic and non-systematic. The contribution of occasional outside research studies is difficult to quantify.	Previous research has provided valuable insights on the importance of improving understanding of ecosystem functions from a global and regional perspective.
			Fishing Industry	2,106,100		
			NORAD	847,750		
			ICEIDA	208,050		
			BENEFIT Pgm			
			National Governments	410,200		
			NORAD	259,850		
			ICEIDA	151,613		
			TOTAL	14,517,423		
		Alternative		15,879,400	A better knowledge of marine trophic webs will enable the more rational management of commercial species and improve long-term productivity and sustainability of the fishing industry.	Current knowledge of marine food webs is rather poor. Any efforts to conserve marine biodiversity (particularly transboundary systems) requires a careful assessment of species other than those harvested commercially.

		Increment	Nat. Governments	162,800		
			BENEFIT Pgm			
			Nat. Governments	136,755		
			NORAD	86,616		
			ICEIDA	75,806		
			GEF	900,000		
			TOTAL	1,361,977		
3. Assessment of environmental variability, ecosystem impacts and improvement of predictability	3.1 Reducing uncertainty and improving predictability	Baseline	Nat. Governments	63,202,800	Even the existing somewhat narrowly focused co-operative research is likely to improve management in the fisheries sector and enhance sustainability.	Current research is focused on improving management of fisheries rather than pursuing global environmental benefits.
			Fishing Ind. (Levies)	12,636,600		
			Bilateral Donor Aid			
			NORAD (Nansen Programme)	3,391,000		
			GTZ	2,089,362		
			ICEIDA	832,258		
			IRD	200,000		
			BENEFIT Pgm			
			Nat. Governments	2,461,200		
			NORAD (Nansen Programme)	1,039,400		
			GTZ	1,624,000		
			ICEIDA	60,645		
			TOTAL	87,541,265		
		Alternative		102,387,780	Improved knowledge of environmental variability will reduce the risk of collapse of fish stocks and enable better deployment of the coastal labour force.	Upwelling systems such as the BCLME play a key role in global climate regulation and in maintaining biological diversity. It is important to understand the natural variability of the system in order to elucidate global change and to avoid excessive exploitation to the detriment of biodiversity. Acquiring this knowledge requires an approach that is beyond the current capacity of the three countries but is in the interest of the global community in its efforts to protect biological diversity and mitigate climate change.
		Increment	Nat. Governments	9,768,000		
			BENEFIT Pgm			
			Nat. Governments	820,500		
			NORAD (Nansen Programme)	346,466		
			GTZ	541,334		
			ICEIDA	20,215.		

			GEF	3,350,000		
			TOTAL	14,846,515		
	3.2. Capacity building and training for improved shared resource management	Baseline	Nat. Governments	2,306,760		Present capacity is insufficient to ensure global and regional benefits.
			Bilateral Donor Aid			
			NORAD	4,212,000		
			GTZ	261,170		
			ICEIDA	1,664,400		
			BENEFIT Pgm			
			NORAD	1,640,800		
			DFID	550,000		
			GTZ	406,000		
			DANCED	110,000		
			IRD	50,000		
			AWB	450,000		
			World Bank	110,000		
			TOTAL	13,889,000		
		Alternative		14,905,280	Strengthened national institutions (through provision of equipment, training and networking). Easy and reliable access to electronic means of communication, data and information exchange. Stakeholders trained and taking advantage of BCLME products.	Sustainability of BCLME activities and global and regional benefits.
		Increment	National Governments	345,600		
			BENEFIT Pgm			
			NORAD	164,080		
			DFID	125,000		
			GTZ	40,600		
			DANCED	11,000		
			IRD	5,000		
			World Bank	25,000		
			GEF	300,000		
			TOTAL	1,016,280		
	3.3. Harmful algal bloom mitigation and marine litter control	Baseline	National Governments	1,539,615	Little protection of coastal populations or of distant consumers from the consequences of HABs. Poor protection of sensitive ecotones from litter.	none
			Fishing Industry (levies)	359,903		
			Mariculture Industry	170,000		
			BENEFIT Pgm	272,450		
			DANCED	25,000		
			Port Authorities	650,000		
			TOTAL	3,016,968		

		Alternative		3,919,718	Better policies and standards, leading to lessened risk.	Improved understanding of the possible coupling of HABs with phenomena such as global change and increased nitrogen flux.
		Increment	National Governments	380,000		
			BENEFIT Pgm	150,000		
			DANCED	10,250		
			Port Authorities	162,500		
			GEF	200,000		
			TOTAL	902,750		
4. Maintenance of ecosystem health and management of pollution	4.1 Oil spill prevention and protection of critical sites from oil spills	Baseline	National Governments	2,969,000	National contingency plans have been or are being developed. A regional plan would add substantial value to the national plans.	Sensitive habitats (including RAMSAR sites) are currently unprotected.
			Port Authorities	2,773,000		
			NORAD	1,200,000		
			DANCED	250,000		
			<i>Oil Industry</i>	1,311,000		
			TOTAL	8,503,000		
		Alternative		8,920,737	Contingency plans protect sites of national interest and transboundary management.	Protection of habitats for migratory species of regional/global interest.
		Increment	National Governments	295,158		
			Port Authorities	72,579		
			GEF	50,000		
			TOTAL	417,737		
	4.2 Improvement of water quality	Baseline	National Governments	10,970,000	Little attention is currently paid to water quality issues though human settlements tend to coincide with especially sensitive areas.	The integrity of communities and habitats at sites suffering from water quality deterioration cannot currently be protected.
			Port Authorities	2,373,000		
			NORAD	1,200,000		
			DANCED	550,000		
			DFID	250,000		
			<i>Oil Industry</i>	1,822,000		
			TOTAL	17,119,000		
		Alternative		19,523,730	Strengthened national capacities for effective marine contaminant reduction and mitigation. Protection of human and non-human populations.	Regional system of effective marine contaminant reduction and mitigation. Regional quality assurance system established. Protocol for pollution prevention designed.
		Increment	National Governments	1,222,000		
			Port Authorities	237,730		
			GEF	945,000		
				2,404,730		

	4.3. Prevention or reversal of habitat alteration and destruction.	Baseline	National Governments	640,500	Uncoordinated development of valuable coastal zones. Institutional capacity to address these issues is weak.	No Regional approaches developed.
			Diamond Mining Industry	863,100		
			DFID	500,000		
			GTZ	261,170		
			World Bank	250,000		
			TOTAL	3,284,700		
		Alternative		3,962,800	Strengthened institutional and human capacity in each country to protect coastal zones. Specific national plans for protection.	Adoption of common regional approaches results in reduced environmental degradation and loss of coastal habitats for migratory species and global biodiversity.
		Increment	National Governments	128,100		
			Diamond Mining Industry	100,000		
			GEF	450,000		
			TOTAL	678,100		
5. Donor co-ordination and fundraising	5.1 – 5.3 Development of plans for donor support, donor conferences and reporting.	Baseline	National Governments	1,280,000	Insufficient financial support for the protection and rehabilitation of the BCLME Environment.	No regional investment strategy developed.
			Fishing Industry	380,000		
			Diamond Mining Industry	250,000		
			Bilateral Aid Donors			
			DFID	550,000		
			NORAD	50,000		
			GTZ	50,000		
			DANCED	27,500		
			BENEFIT	250,000		
			World Bank	50,000		
			TOTAL	2,887,500		
		Alternative		3,593,500	Improved national capacities, priority investment projects developed for each country.	Priority Investment Portfolios prepared and donors identified.
		Increment	National Governments	256,000		
			BENEFIT Pgm	150,000		
			GEF	300,000		
			Total	706,000		

Annex C Logical Framework (Logframe)

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Long-term Objective Implement the Strategic Action Program jointly developed by the countries in conjunction with the ongoing efforts of participating countries, donors, regional organizations, private industry, NGOs and others to bring about integrated, sustainable management of the BCLME.	- Through the activities of the project, a cooperatively developed and approved framework and coordination mechanism for SAP implementation. More specifically: - Improved national and regional capacities for the long-term sustainable development of the resources of the BCLME. - Increased country support for and donor interest in and support for the immediate outputs of the project and the long-term sustainability of the resources of the BCLME. - Documented, substantial stakeholder participation in the work of the project.	- PCU documents. - PSC Meeting agendas and minutes - Project committee and workgroup meeting agendas and minutes - Terms of Reference/Work plans - Establishment of the IBCC - Nomination and appointment of high-level Commissioners to the IBCC - Minutes and other written documents relating to the work of the IBCC	- Continued country commitment to a regional approach. - Country commitment to implementation of the SAP - Key regional institutions and national governments working co-operatively. - Negative changes in economic political and social conditions may detract from country commitment to a regional approach.

Project Purposes			
• Assist groups of countries to better understand environmental concerns of shared international waters and collaboratively address them • Build capacity of existing institutions, or through newly created institutions to utilize a more comprehensive approach for addressing transboundary, water-related concerns. • Implement sustainable measures that address priority transboundary environmental concerns	• Regional approaches and mechanisms to address root causes and system uncertainties developed and implemented. • Country participation in and commitment of resources to required measures. • Country participation on committees and workgroups associated with project activities.. • Strong IBCC and country support for the creation and work program of the project PCU.	• Completed work plans. • National and additional donor commitments to work plan elements. • PCU documents and working group reports. • Disbursement records.	• The participating countries and the yet to be developed IBCC will be consistent in their strong support for and involvement in the work of the project. The extent of country commitment demonstrated in the formulation of the TDA and SAP would indicate this continuing commitment. • Continuing civil disturbance in Angola makes it difficult for that country to continue its participation in project execution. Mitigating this concern is the fact that Angola has participated fully and enthusiastically in the project for the past two years, years characterized by substantial civil disturbance within the country. • Countries are willing to commit necessary resources to the IBCC and make the commitment to secure agreement on the permanent BCC. • GEF funds may not be adequately complemented by country commitments and other donors.

Output 1	• Effective intra and inter project coordination and support. • PCU created • PSC created. • Country-specific Interministerial Committees (IMCs) re-established. • Country Lead Agencies and senior lead officials designated. • IBCC Commissioners nominated and appointed. • Project plan to effectively interact with related, regional GEF IW projects. • Increased country commitment for regional level participation in project related global fora. • Increased capacity to create national benefits through enhanced transboundary management regime. • Specific progress in toward creation of the BCC from the initial IBCC. • Specific progress in transferring the work of the PCU to the IBCC. • Specific progress in transferring elements of the PCU to the workings of the IBCC and, ultimately, the BCC.	• CTA and other PCU staff employed/contracts issued/terms of reference defined. • PSC meeting agendas and minutes. • IBCC meeting agendas and minutes. • Purchase orders/contractual agreements/ and training records • Documented increased level of project (regional) and governmental participation in regional and international fora. • Increased extent to which explicit regional positions are formed for use in various global fora. • Formalized, published progress reports on extent of SAP implementation. • Formalized arrangements/agreements between and among Implementing Agencies/project regions re. Inter-project cooperation and collaboration. • Written records and reports of inter-project communications, workshops and cross-project field trips. • A report on the documented progress of empowering the IBCC to begin taking managerial responsibility for the project.	• The PCU will facilitate the work program of the project and assist the countries in the formulation of and initial work program for the IBCC • The PSC will move quickly to hire the CTA. Delay in the hire of the CTA will have a cascading effect of delays for the hire of support staff and the formulation of work plans. • The countries will be willing to quickly designate Interministerial Committee members, senior officials, who have sufficient policy-level standing to enhance prospects for timely implementation of project results, and Commissioners to the IBCC. • IAs and cross-project country representatives will see it in their best interests to participate in inter-project coordinative and cooperative activities. • Short-term national needs may outweigh increased level of participation in regional fora.
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Output 2			
• Effect the sustainable management and utilization of the resources of the BCLME.	• Issuance of annual state-of-the-ecosystem reports. • Specific recommendations and agreements on harvesting levels of specific species. • Improved forecasting techniques with resulting positive environmental, economic and social benefits for the participating countries. • Creation of regional approaches to mining issues and to activities related to oil exploration and drilling, including the harmonization of approaches. • Cooperatively developed socio-economic assessment of potential for, and feasibility of expanded mariculture. • Formulation of harmonized approaches to mariculture. • Formulation of regionally-based methodologies for the conduct of environmental impact studies. • A regional approach to post-mining activities in the waters of the BCLME. • Measures to achieve protection of vulnerable species. • A completed assessment of non-harvested species and their role in the ecosystem	• Agendas and meeting minutes of pertinent PCU, PSC, IBCC and Stakeholder Meetings. • Copies of annual state-of-the-ecosystem reports. • Documents detailing country agreement on the sustainable harvest of shared biological resources. • Approved workplan for review of the functions and authorities of the LCBC. • Copies of regionally developed forecasting techniques for the BCLME. • Reports detailing progress made to the harmonization of country approaches to oil exploration and drilling. • Written, country-endorsed agreements or understandings with respect to the future development of mariculture in the region. • Written country endorsed regional approaches to post mining activities in BCLME waters. • Written agreements on joint approaches to be taken with regard to vulnerable species. • Final report describing the extent of non-harvested species and their role in the ecosystem.	• Countries see the long-term benefit deriving from a regional approach to bringing about the sustainable use of BCLME resources. The risk is that individual countries will give priority to those uses that accrue to the greatest domestic benefit without taking into account broader LME interests. Creating and helping build capacity for the IBCC and the BENEFIT program are crucial to mitigating this danger. • A risk is that countries will not be willing to make national legislative or regulatory changes that are narrowly targeted to one portion of the country. This risk can be mitigated by developing regional approaches that minimize the extent to which existing country-wide legislation needs to be altered.

Output 3			
Assess environmental variability, ecosystem impacts, and improve predictability.	- Improved predictability of BCLME and decreased levels of uncertainty re. Management decisions. - An overall regional early warning system to help predict extreme events. - Existence of an overall strategy for capacity building and targeted training to enhance regional capacity. - Strengthened capacity in targeted national and regional institutions. - Targeted training programs are developed. - Development of a HAB reporting system at the regional level. - Specific improvements in the capacity to monitor HAB toxins/species. - Cooperatively developed HAB contingency plans.	- Agendas and meeting minutes of pertinent PCU, PSC, IBCC and Stakeholder Meetings. - Country reports on existing, relevant data and information. - Data and information synthesis report. - Written assessment of the relevance of PIRATA to the needs of the BCLME and description of how it is to be applied. - Records related to the establishment and workings of necessary workgroups. - Written document describing the overall strategy for capacity building. - Written description of and methodologies and training manuals to be included in the training component of the project. - Copy of the HAB reporting system. - Copies of HAB contingency plans. - List of agreed upon, key environmental indicators. - Reports describing extent of country compliance with management plans.	- The PCU, IBCC, BENEFIT and other regional organizations will have to cooperate closely to bring about the desired results of this output. To date cooperation (during activities related to the PDF-B) have been promising. - Sufficient cooperative and efficient linkages are created between and among the PCU, the IBCC, agencies of the participating countries, related GEF projects, and with other related initiatives globally will be necessary to realize this Output.

Output 4	• Take preliminary steps to maintain BCLME ecosystem health and effectively manage pollution. • Improved understanding of the environmental variability and change in the BCLME, their causes/sources and global teleconnections. • Regional contingency pollution plan. • Initial development of regional protocols and pollution related conventions or agreements. • Specific provisions for linking to other GEF IW projects addressing similar issues. • Specific number of regional workshops to address pollution issues of regional concern. • Three pilot demonstration projects to address pollution hotspots. • Water quality criteria jointly developed by the participating countries by 2002. • Beginning of a process of regional standardization of national policies. • Initial efforts to increase the level of current enforcement. • A pilot demonstration project in Angola for Seafarer education re. responsible pollution prevention. • A comprehensive report re. current status of habitat loss in the BCLME. • Development of a regional early warning system to flag habitat loss. • Adaptation and application of existing national environmental criteria to begin formulation of regional pollution criteria.	• Agendas and meeting minutes of pertinent PCU, PSC, IBCC and Stakeholder Meetings. • Draft documents related to the development of regional protocols and/or agreements. • Internationally peer-reviewed documents and publications on BCLME variability and change, their causes/sources, linkages, and impacts on resources and their sustainable management. • Documented written exchanges with or field trips taken to other, related GEF projects. • Written documentation concerning the design and execution of the three pilot demonstration projects. • Copies of draft country agreed, regionally based water quality criteria. • Preliminary, written reports of efforts to harmonize existing national policies. • Documents describing the process and results of the Angola based pilot demonstration project for Seafarers. • Written report descriptive of the current extent of habitat loss in the BCLME. • Early drafts of attempts to formulate regional pollution criteria.	• Existing, formal country endorsement of the Strategic Action Program will translate into country commitment for joint action to implement its key recommendations. As the outputs for this component are modest, and the ministries related to this component fully supportive, the prospect for successful completion of the activities contemplated is high. • Regional experts will actively participate in or otherwise establish close links with international observational monitoring programs such as GOOS, GCOS, GLOBEC, CLIVAR, OOPC, and other organizations as appropriate. • The PCU, IBCC and participating countries will be able to work together with communities and stakeholders in the pilot demonstration projects. This is seen as likely given the positive experience of community involvement during the PDF-B. • Perceived benefits of participation may be insufficient to attract full range of stakeholders. • Project aims may be seen as inconsistent or competing with local interests.
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Output 5			
Increased donor participation throughout the life of the project and increase co-finance.	- Development of an overall plan to increase donor and country resource commitment to the project and the long-term sustainability of the BCC. - Donor conferences planned and executed. - Systematic procedure established to use the GEF project to leverage other donors for direct and indirect support to project activities. - Increased donor support for direct and indirect assistance to project related activities and the longer term activities of the BCC.	- Relevant agendas and minutes of the PCU and the PSC. - Documented additional contributions to the regional BCLME effort.	A key assumption is that suitable levels of cooperation can be established and maintained between the UNDP and the WB and that the IBCC and the participating countries will be actively involved in preparation for and attendance at the donor conferences. This assumption seems well-grounded in that IA cooperation has already begun between this project and other projects in the region under the auspices of both the UNDP and the WB.

Annex D – STAP Review

Review of the Implementation of the Strategic Action Programme Toward Achievement of the Integrated Management of the Benguela Current Large Marine Ecosystem:

George T. Needler, Bedford Institute of Oceanography

1. Overall Impression

The overall objective of this project is the difficult and ambitious integrated and sustainable management of the Benguela Current Large Marine Ecosystem. The approach is balanced and rational. The systems and mechanisms proposed are consistent with those taken in other regions of the global oceans, including those adjacent to more developed nations. However, it is important to remember the management failures that have occurred in other regimes, for example the collapse of ground fish stocks in the northwestern Atlantic even though these systems were at the time thought to be well-managed. The success of this project depends on the collection of adequate and comparable environmental and ecosystem observations, their systematic analysis and interpretation and the implementation of management mechanisms, all the while keeping within the scientific, technical and administrative capabilities of the nations involved.

2. Relevance and Priority

The region of interest is of considerable importance. As noted, it is of importance in the overall mass, heat, and water budgets of the global ocean and carries the warm waters of the tropical Indian Ocean into the South Atlantic and northward. As such, a one-time survey, including moorings, was carried out as part of the World Ocean Circulation Experiment (WOCE) in the early 90s. It is also a region of considerable upwelling, which remains basically unquantified, as is the case in most such regions globally. Lastly, it is a region under pressure from fishing, land and sea-based pollution stress and/or mining activities. For the citizens of the adjacent countries, especially those dependent on the resources and health of the ocean, effective management of the marine ecosystem is of paramount importance. Given the apparent commitment of the 3 regional governments and their partners, the project can yield substantial rewards as long as it remains focussed on realistic goals.

3. Scientific and Technical Soundness of the Project Outputs/Components

Output 1. Effective intra and inter-project coordination and support through the establishment of a Program Coordination Unit ...

The proposed Program Coordination Unit, multinational bodies and connections to external GEF projects seem to be both traditional and workable.

Output 2. Creation of the necessary mechanisms for, and steps undertaken to develop, real-time management capability to better sustain and utilise the resources of the BCLME.

Once again the general approach seems reasonable. The subgoals address living marine resources, mining and drilling impacts, mariculture, and the protection of vulnerable species and habitats. The potential success depends on the commitment of the nations and partners to the project and the realisation that the broader social and economic goals can only be addressed incrementally. The issues to be addressed are truly transboundary in nature and can only be faced jointly.

Regarding fisheries management, I am somewhat surprised to see reference to the *optimal* use of marine resources. While not an expert in the field, I had thought that in general the concepts of optimal use, maximum sustainable yield, etc are not now considered the most useful tools for fisheries management and that recognition of the uncertainties in marine ecosystems had lead to concepts such as the precautionary principle (whatever the definition might be). In a region such as the Benguela Current, where natural variability will only be defined after decades of observations, recognition of inherent uncertainty in the environment and ecosystem is surely necessary.

Output 3. Create improved understanding of BCLME environmental variability, ecosystem impacts created by environmental variability, and thus improve predictability as a means of strengthening the management of fish stocks.

First, I would point out that *predictability* in the marine climate on time scales beyond a few days is essentially non-existent, with the notable exception of the ENSO system in the tropical Pacific. However, real-time analyses are a valid management tool and the marine environment does exhibit considerable persistence (as for the weather, tomorrow has a good chance of being the same as today, but for the marine environment the persistence is of course longer in most aspects). Prediction of seasonal and interannual environmental change and shifts will remain difficult in the foreseeable future.

In terms of specific activities, mention is made of the PIRATA array in the tropical Atlantic. I would think that extension of this (expensive) technology would be inappropriate. In the tropical oceans the length scales of the variability are large, especially in the zonal direction. In a region with the relatively small scale eddy-like variability of the Benguela Current regime any practical array of moorings of the PIRATA type would be incoherent and most likely ineffective in describing the environmental state.

The question of observations of the marine environment raises something that seems to be missing in this document, that is the international plans for the global observing systems, (GCOS), the Global Ocean Observing System (GOOS) and the Global Terrestrial Observing System (GTOS). Regarding the ocean climate GCOS and GOOS have an identical component which is currently being refined by their common expert panel, the Ocean Observations Panel for Climate (OOPC). A major initiative of the OOPC is the Global Ocean Data Assimilation Experiment (GODAE) which is scheduled to take place in the 2003-2005 period. The intention is to distribute roughly 3000 profiling floats globally during this period. If fully implemented the profiling float array will provide a profile of temperature and salinity on a 250 km scale every 10 days. Assimilation of the float data with that from precision satellite altimetry and surface forcing into high resolution ocean models has the potential of describing the oceanic state to scales of a few tens of kilometres. Whether funding for GODAE will allow full global coverage is, I believe, unclear. If funding for a few profiling floats were to become available in the Benguela Current region, and the adjacent South Atlantic Ocean it might influence the regions for which analyses will be readily available. It should be noted that profiling floats in general drift with the deep current field and thus move from one region of the ocean to another, including into the regions of the EEZs. The last IOC Assembly passed a resolution aimed at ensuring that coastal nations will be informed when floats approach the EEZs of coastal states and instructed on how to access the data.

GOOS also is addressing observing systems for Living Marine Resources, the Health Of The Ocean and the Coastal Ocean. Although these are less developed than those for large-scale ocean climate, generic plans will be forthcoming shortly and nations will be asked to make commitments to the global systems. For the coastal oceans the observations required will be, for most purposes, the same as those required for this project on the BCLME. The power of participation in GOOS and GCOS is that participation obtains access to the larger data sets. In this case the off-shore conditions may easily be defined by GODAE, and its follow-on programs if GODAE is successful. In addition, COP-4 (5?) strongly recommended the GEF facilitate the participation of Third World Nations in GOOS/GCOS.

The basic point is that the global observing systems GOOS and GCOS have strong overlapping interests with this project in the Benguela Current region. It should pay to keep connected.

Another aspect of existing large-scale ocean analyses (mostly surface fields) is that many are available on the web. I am aware that in some parts of coastal Africa the relatively simple technology needed to take advantage of freely available products has not been in place. It should be an element of this project.

Output 4. Develop measures to maintain BCLME ecosystem health and effectively manage pollution as a means to safeguard fishery and other resources.

Subgoals address oil spills, coastal water quality, and habitat destruction and alteration. All have a transboundary aspect and can be addressed given political will with adequate scientific, technical and financial support.

Output 5. Recruitment of additional donors and increase in the level of co-finance during implementation.

No Comment.

4. Project Sustainability

The project brief discusses the political will of the nations involved and expresses the belief that the level of commitment is high. As indicated elsewhere in this review, the stated objectives are extremely broad and perhaps optimistic. The project has the promise of great rewards but sustainability depends on setting achievable medium-term objectives and the acceptance of both unexpected success and failure. Most western nations have seen both, even with the availability of the best expertise and significant resources. However, experience is a great teacher.

Concluding generalities.

This project has the potential for considerable socio-economic advantage for the nations involved. Beyond the need for realistic short-term objectives as stated above there are a large number of critical details that are not addressed in the existing documents but on which the project depends. One is the question of data compatibility and exchange. Whereas the accuracy required for observations in the coastal environment can be met with reasonable ease given good practises, observations in the off-shore are often more demanding. The advantages of the exchange of data within the broader mechanisms of the IOC, GOOS and GCOS should not be ignored. Participation gains access and the capability to profit on the larger scale.

The project clearly depends on the expertise of those participating and this expertise is bound to be varied. Thus, capacity building must have a strong personal component.

Little detail is provided about the observations required by the project. However, it will not matter which structures are in place or what is the expertise of those involved in the analyses, if adequate environmental data is not available as a basis. While physical and biochemical observations are obtainable with the proper practices, fisheries statistics are well known to be problematical in many regimes. Estimates of fish stocks based on the reports of fishers have been known to be unreliable for reasons that are relatively obvious. This is another case where the need for fully committed participation by stakeholders is required.

Annex E: Response to STAP Review

As the STAP review is generally supportive of the Project, only those comments requiring comment will be addressed. With regard to Output 3 the Reviewer suggests that use of the PIRATA array in the tropical Atlantic would be inappropriate. He further states that with the relatively small-scale eddy-like variability of the Benguela Current regime any practical array of moorings of the PIRATA type would be incoherent and most likely ineffective in describing the environmental state. While the countries see PIRATA as being a useful tool, they recognize that its utility will require initial and thorough assessment. The scales that the project intends to focus upon are in fact the large scales the reviewer implies will be necessary, and any PIRATA buoy deployed in the BCLME is likely to be quite far north and offshore to assess the coupling with the equatorial system. No small-scale eddy variability in the Benguela will be attempted, and the Reviewer's observation that this would be inappropriate is correct. It should be noted however that the last two Benguela Ninos could have been predicted with lead times of three months if there had been access to the right information and had there been opportunity to coordinate effort and evaluate available realtime data. There is also an excellent correlation type forecast between SST offshore of Angola and summer rainfall in the possession of SADC, and this information will be available to the project. Hence scientists participating in project preparation have seen some potential usefulness in employing a PIRATA buoy.

The Reviewer also has stated that the Project should take into account the potential importance of the work of the GOOS to the Outputs of the Project. We agree. The Project Brief had already mentioned the importance of GOOS and, given the Reviewers comments, that language has now been strengthened. The Project will also develop ongoing coordination with work being undertaken as part of the Global Ocean Data Assimilation Experiment, or GODAE. We fully agree with the Reviewer that "...the global observing systems GOOS and GCOS have strong overlapping interests with this project in the Benguela Current region," and the Project will ensure that work undertaken by the Project will be connected to efforts of these two important global initiatives and others such as IOC.

In the section of the Reviewers comments titled Concluding Generalities, it is stated that there are a large number of critical details that are not addressed in the Project Brief. This is true. The Project Document, as is intended under GEF projects, will serve to more fully define the actual tasks that are to be performed under each activity, who will be responsible for performance, the costs involved, rough timetable established, and review mechanisms that will judge implementation performance.

Annex F1 Country Actions

Angola Country Actions

In terms of the provisions of the BCLME SAP, Angola (together with Namibia and South Africa) has implemented or will implement the following policy actions:

- Will act to establish the Interim Benguela Current Commission (IBCC) to implement the SAP and strengthen regional co-operation (that is promotion of sustainable integrated management of the BCLME), in anticipation of the establishment of a permanent BC Commission within five years.
- In 1998, during the second year of the PDF-B, Angola jointly founded the Benguela-Environment-Fisheries-Interaction-Training (BENEFIT) Programme (BENEFIT aims to develop the enhanced science capacity required for the optimal and sustainable utilization of living resources of the BCLME). Angola has been, and continues to be, an active supporter of, and participant in, BENEFIT.
- Has pursued and will continue to pursue a policy of co-financing with industry and donor agencies to strengthen existing regional mechanisms and ensure necessary capacity building consistent with project objectives.
- Has begun encouraging the use of clean technologies.
- Has issued an updated Decree for the protection of the environment with particular attention to oil production activity.
- Is actively promoting the use of economic and policy instruments that foster sustainable development.
- Will cooperate in the establishment of a regional structure to conduct trans-boundary fish stock and ecosystem assessments, with joint surveys undertaken co-operatively over a five-year period starting in 2001, and will undertake co-operative assessments of shared non-exploited species.
- Will participate in the harmonization of the management of shared stocks (where applicable).
- Will participate in the development of a responsible mariculture policy in co-operation with SADC by December 2002.
- Has committed itself to compliance with the FAO Conduct for Responsible Fishing.
- Is harmonizing policies on protected areas and other conservation measures with policies of other IBCC States (Angola's marine fisheries are managed in terms of a broad-based Fisheries Act which was developed with assistance from FAO and promulgated in 1992).
- Will participate in a regional assessment of the most vulnerable species and habitats, to be completed by December 2001 as part of a developing policy to protect vulnerable species and biological diversity. Is committed to participation in the development of a regional marine biological diversity management plan will be developed by December 2003.
- Will participate in development (by IBCC) by December 2002 of a regional framework for enhanced consultation to mitigate the negative impacts of ocean mining, collaborate to harmonize mining policies relating to shared resources, and undertake impact assessment of cumulative effects of mining on the BCLME.

- Will participate in development of a regional harmful algal bloom (HABs) reporting network during 2001 with a view to its implementation in 2002. Regional contingency plans for assessing the transboundary effects of HABs will be developed and implemented by December 2002.
- Will participate in development by 2003 of a cost-effective regional early warning system for monitoring major environmental events within the BCLME, the establishment of an environmental baseline, and other actions with a view to improving system predictability necessary for long-term sustainable management.
- Through the IBCC, will undertake to develop, in co-operation with SADC, a responsible regional mariculture policy by December 2002.
- Will development by June 2002 of wastewater quality criteria for receiving waters for point source pollution.
- Has created a national Commission to develop national contingency plans for the prevention and management of oil spills.
- Has, with international assistance, formulated a National Contingency Plan for the Prevention and Management of Oil Spills. The IBCC will endeavour to harmonize this Plan and contingency plans in Namibia and South Africa and develop the mechanisms for sharing technology, expertise and clean-up equipment in the region. A regional policy will be developed by 2003 to minimize cross-border impacts of oil pollution.
- All hydrocarbon activities in Angola are managed in terms of the Petroleum Law (Decree 13/78) by the Ministry of Petroleum. EIAs are obligatory prerequisites for all drilling activities. Will participate through its representation on the IBCC to facilitate co-ordinated actions for the assessment and mitigation of negative impacts on the ecosystem of oil and gas exploration/production.
- Will, through its participation on the IBCC, develop a common strategy for implementing MARPOL 73/78 in the BCLME region will be devised by December 2000.
- Will participate in the development of a regional policy on ballast water for the BCLME, developed in tandem with the existing GEF ballast water management project.
- Will be assisted by the creation of a Coastal Biodiversity Program and Insitute at the Universiyt of Angola.
- Will serve as Host Country for The BCLME Activity Centre for Biological Diversity, Ecosystem Health and Pollution. The Centre will be functional by 2000/2001.

Namibian Country Actions

In terms of the provisions of the BCLME SAP, Namibia (together with Angola and South Africa) will implement the following policy actions:

- The establishment Interim Benguela Current Commission (IBCC) to implement the SAP and strengthen regional co-operation (that is promotion of sustainable integrated management of the BCLME), in anticipation of the establishment of a permanent BC Commission within five years.
- In 1998, in the second year of PDF-B implementation, Namibia jointly founded the Benguela-Environment-Fisheries-Interaction-Training Programme (BENEFIT) with Angola and South Africa. This Programme aims to develop the enhanced science capacity required for the optimal and sustainable utilization of living resources of the BCLME. Namibia has played a key role in implementation of BENEFIT and is the host country for the location of the Secretariat and for regional co-ordination.
- Has and will continue to actively pursue a policy of co-financing with industry and donor agencies to strengthen existing regional mechanisms and ensure necessary capacity building.
- Has and will continue to encourage the use of clean technologies.
- Has and will continue to promote the use of economic and policy instruments that foster sustainable development.
- Will participate in the establishment of a regional structure to conduct trans-boundary fish stock and ecosystem assessments, with joint surveys undertaken co-operatively over a five-year period starting in 2001, and co-operative assessments of shared non-exploited species.
- Will harmonize efforts to manage shared stocks (where applicable).
- Will participate in the development of a responsible mariculture policy in co-operation with SADC by December 2002.
- The Government of Namibia has committed itself to compliance with the FAO Conduct for Responsible Fishing.
- Will act to harmonize policies on protected areas and other conservation measures with those of other IBCC States.
- Will participate in a regional assessment of the most vulnerable species and habitats, to be completed by December 2001, as part of a developing policy to protect vulnerable species and biological diversity. A regional marine biological diversity management plan will be developed by December 2003.
- Development (by IBCC) by December 2002 of a regional framework for enhanced consultation to mitigate the negative impacts of ocean mining, collaboration to harmonize mining policies relating to shared resources, and impact assessment of cumulative effects of mining on the BCLME.
- Will participate in development of a regional harmful algal bloom (HABs) reporting during 2001 with a view to its implementation in 2002. Regional contingency plans for assessing the transboundary effects of HABs will be developed and implemented by December 2002.

- Will assist in the development, by 2003, of a cost-effective regional early warning system for monitoring major environmental events within the BCLME, the establishment of an environmental baseline, and other actions with a view to improving system predictability necessary for long-term sustainable management.
- Through the IBCC, will develop, in co-operation with SADC, a responsible regional mariculture policy by December 2002.
- Will develop, by June 2002, waste water quality criteria for receiving waters for point source pollution.
- Namibia has, with international assistance, formulated a National Contingency Plan for the Prevention and Management of Oil Spills. Namibia will, through its participation in the IBCC, act to harmonize this Plan and contingency plans in Angola and South Africa and develop the mechanisms for sharing technology, expertise and clean-up equipment in the region. A regional policy will be developed by 2003 to minimize cross-border impacts of oil pollution.
- All hydrocarbon activities in Namibia are managed in terms of the Petroleum Act (1992). Namibia has undertaken to make EIAs obligatory prerequisites for all drilling activities. Namibia will, through its membership on the IBCC, act to facilitate coordinated actions for the assessment and mitigation of negative impacts on the ecosystem of oil and gas exploration/production.
- Namibia will, through the IBCC, develop a common strategy for implementing MARPOL 73/78 in the BCLME region will be devised by December 2000.
- A regional policy on ballast water for the BCLME will be developed in tandem with the existing GEF ballast water management project.
- Namibia will serve as the host country for the BCLME Activity Centre for Fisheries and other Living Marine Resources. Namibia will also be the Lead Country for the project and will host the project PCU.

In addition to the above, the following policy actions have been undertaken by Namibia that supports the BCLME Programme and the implementation of the Strategic Action Plan (SAP). Some of these actions are being developed by virtue of participation in this regional initiative.

- Environmental Management Act (1998)

The Namibian Government will soon promulgate the Environmental Management Act (Act X of 1998) which prescribes the need for environmental assessments for various activities including marine mining and mineral extraction, harbour construction and associated structures, reclamation of land below high water mark and other industrial activities related to sewage and waste treatment. A Sustainable Development Commission, representative of key government ministries, specialists and NGOs will be responsible for issuing licenses which have Environmental Clearance with or without conditions.

- Sea Fisheries Act 29 of 1992

The Sea Fisheries Act 29 of 1992 regulates pollution at sea and controls the disposal of fish and domestic waste from ships, disturbance of rock lobsters, marine invertebrates and aquatic plants, and restricts areas of seabed damage.

- South East Atlantic Fisheries Organisation (SEAFO)

The Ministry of Fisheries and Marine Resources has been a key player in the development of the SEAFO (along with Angola, South Africa and U.K.) which will be tasked with management of the high seas fisheries in the

southeast Atlantic. This agreement is expected to be ratified in the year 2000 and will have strong links with BCLME and BENEFIT.

- Namibian National Biodiversity Programme (Convention on Biological Diversity)

The Government of Namibia has recently ratified the Convention of Biological Diversity that will result in the protection of marine biodiversity within the national boundaries of the BCLME. A Strategic Plan for Coastal and Marine Biodiversity has been produced that will result in a new legislation to protect national coastal and marine biodiversity by July 2003. The Namibian National Biodiversity Programme has a Coastal and Marine Biodiversity Working Group. This Group has produced a draft strategic plan of elements for coastal and marine biodiversity as part of an overall document titled Biodiversity and Development: Namibia's ten year strategic plan of action for sustainable development through biodiversity conservation 2001-2010.

- Marine Protected Areas

The Ministry of Fisheries and Marine Resources has completed an assessment of the needs to establish a number of marine protected areas along the coast of Namibia and plans to introduce legislation to effect this policy by December 2001. This is part of its efforts to bring policy and legislation in line with the Convention of Biodiversity of which the Namibian Government is a signatory. The above mentioned coastal and marine component of the biodiversity plan for Namibia sets timetables and costs for implementing, among other things, the recommendations of the MFMR's consultancy report on Marine Protected Areas.

- Mariculture Development

The Ministry of Fisheries and Marine Resources has recently drafted legislation which establishes criteria for issuing of mariculture licencing, addresses environmental impacts of mariculture developments and mitigation and regulation regarding the introduction of alien species. Legislation is expected to be enacted by June 2001.

- National Oil Spill Contingency Plan

The Maritime Affairs Division of the Ministry of Works, Transport and Communications is currently formulating a National Contingency Plan for oil spills which is expected to be completed by June 2001

- Contingency Plan of Harmful Algal Blooms

The Namibian Ministry of Fisheries and Marine Resources is formulating a National Contingency Plan to address Harmful Algal Blooms in the BCLME off Namibia which is expected to be implemented by December 2001.

- MARPOL 73/78. The Government of Namibia is considering joining the MARPOL 73/78 Convention. It is expected that an agreement will be reached by December 2000 and that ratification will be completed by June 2001. This will be beneficial for Namibia in meeting her commitments to protection of the marine environment within the BCLME.
- Namibian Port Authority Act 2 of 1994. This Act gives the Port Authorities in Namibia the responsibility to protect the marine environment in harbour areas from oil pollution, toxic waste and disposal of waste/litter.
- Maritime Notice No. 4 (1994). This Notice provides rules and procedures for the collection of garbage from vessels so as to prevent disposal at sea.

South African Country Actions

In terms of the provisions of the BCLME SAP, South Africa (together with Namibia and Angola) will implement the following policy actions:

- Has accepted responsibility to share in the creation of the Interim Benguela Current Commission (IBCC) to implement the SAP and strengthen regional co-operation (that is promotion of sustainable integrated management of the BCLME), in anticipation of the establishment of a permanent BC Commission within five years.
- In 1998, during the second year of PDF-B implementation, South Africa jointly founded the Benguela-Environment-Fisheries-Interaction-Training Programme (BENEFIT) which aims to develop the enhanced science capacity required for the optimal and sustainable utilization of living resources of the BCLME). South Africa has been, and will continue to be, an active supporter of, and participant in, BENEFIT.
- Has actively pursued, and will continue to pursue, a policy of co-financing with industry and donor agencies to strengthen existing regional mechanisms and ensure necessary capacity building.
- Has encouraged, and will continue to encourage, the use of clean technologies.
- Has promoted and will continue to promote the use of economic and policy instruments that foster sustainable development.
- Will participate in the establishment of a regional structure to conduct trans-boundary fish stock and ecosystem assessments, with joint surveys undertaken co-operatively over a five-year period starting in 2001, and will undertake co-operative assessments of shared non-exploited species.
- Will act to harmonize, with its project partners, the management of shared stocks (where applicable).
- Will act to cooperatively develop a responsible mariculture policy in co-operation with SADC by December 2002.
- Has committed itself to compliance with the FAO Conduct for Responsible Fishing.
- Has agreed to play its part in the harmonization of policies on protected areas and other conservation measures with policies of other IBCC States .
- Will participate in a collaborative regional assessment of the most vulnerable species and habitats, to be completed by December 2001, as part of a developing policy to protect vulnerable species and biological diversity. South Africa will fully participate in the development of a regional marine biological diversity management plan to be completed by December 2003.
- Work within the IBCC to develop, by December 2002, a regional framework for enhanced consultation to mitigate the negative impacts of ocean mining, collaboration to harmonize mining policies relating to shared resources, and impact assessment of cumulative effects of mining on the BCLME.
- Is developing Quality Control Criteria for export of Mariculture produce.
- Work to incorporate South African into a regional harmful algal bloom (HABs) reporting to be developed during 2001 with a view to its implementation in 2002. Will participate in the development of regional contingency plans for assessing the transboundary effects of HABs, to be implemented by December 2002.

- Develop by 2003 a cost-effective regional early warning system for monitoring major environmental events within the BCLME, the establishment of an environmental baseline, and other actions with a view to improving system predictability necessary for long-term sustainable management.
- Through the IBCC, will participate in efforts to develop, in co-operation with SADC, a responsible regional mariculture policy by December 2002.
- Is in the process of developing quality criteria for the export of mariculture produce.
- Develop by June 2002 wastewater quality criteria for receiving waters for point source pollution.
- South Africa has in place a National Contingency Plan for the Prevention and Management of Oil Spills. South Africa will work through the IBCC to harmonize this Plan and contingency plans in Namibia and Angola and develop the mechanisms for sharing technology, expertise and clean-up equipment in the region. South Africa will be part of a regional policy, to be developed by 2003, to minimize cross-border impacts of oil pollution.
- South Africa has acted to make EIAs an obligatory prerequisite for all drilling activities. South Africa commits to work within the IBCC to facilitate coordinated actions for the assessment and mitigation of negative impacts on the ecosystem of oil and gas exploration/production.
- Through IBCC, South Africa commits to its participation in a common strategy for implementing MARPOL 73/78 in the BCLME region will be devised by December 2000.
- South Africa has committed to participation in the global GEF ballast water management project.
- South Africa has agreed to be the Host Country for The BCLME Activity Centre for Environmental Variability and Improved Predictability. It is expected that the Centre will be operational by 2000/2001.

In addition to the above, the following policy actions have been undertaken by South Africa which in effect supports the BCLME Programme and the implementation of the Strategic Action Plan (SAP).

- Marine Living Resources Act
This Act, the South African government's major statement on policy related to the conservation and orderly utilization of marine living resources, was promulgated in September 1998. The regulations associated with it and aspects of the Act itself are undergoing review in light of experiences and findings that flow from implementation and research activities and as a result of regional programmes such as the BCLME and BENEFIT.

- Coastal Policy
South Africa is undertaking a total review of its policy on coastal utilization and development. The process, currently in the White Paper phase and targeted for finalization during the year 2000, is subject to ongoing interaction with all stakeholders, which means that outputs from the BCLME process will be able to feed into the process in a meaningful manner prior to promulgation.

- South East Atlantic Fisheries Organisation

SEAFO was evolved as a combined initiative of the three southern African countries bordering the SE Atlantic plus the United Kingdom, for its St Helena dependency. Its aim is to improve management, understanding and control of the straddling living marine resources beyond the 200 mile EEZs of the three countries. The convention is due for ratification during the year 2000, so the BCLME programme will be able to make notable input during the convention's implementation.

- National Environmental Management Act

South Africa's NEMA is being developed as a means of effectively coordinating all policy relating to the use of its air, terrestrial and marine environments, specifically related to preserving the quality of life of its people. Scheduled

for promulgation in 2001, NEMA offers the BCLME initiative a real conduit for influencing national policy in an effective manner.

- Convention of Biological Diversity

South Africa ratified the CBD in 1996 and a discussion document on the conservation and sustainable use of South Africa's biological diversity was widely circulated and discussed prior to incorporation in a draft white paper. Many of the principles of the CBD were incorporated into the Marine Living Resources Act of 1998 to control marine biodiversity issues, such as marine protected areas, overfishing, ecosystem effects of fishing and importation of alien species for aquaria or mariculture. BCLME inputs to the implementation phase of the CBD are crucial.

Annex F2

Description of Baseline Situation in Each of the Countries Participating in the BCLME Programme, List of Major Ongoing and Planned Projects in the Region, and Details as to Relevance to/Linkages between these Projects and the BCLME

The section which follows describes the baseline situation in each of the countries in the Benguela Current region, lists the major ongoing and planned projects and the linkages between these projects and the five components of the BCLME. The accompanying Annex G3 Table also highlights which of the principal issues and problems identified in the TDA, as well as the causality of these, the ongoing and planned baseline projects address. The following text and Table G3 thus expand on Annex A (Incremental Cost Narrative), and also augment Annex B (Incremental Cost/Complete Matrix). As will be evident from Annexes A and B and the accompanying Table G3 to this Annex, the baseline activities are varied and cover the full spectrum, i.e. all identified components, of the BCLME Programme.

The financial and human resources which support the identified baseline activities in the region are derived primarily from national sources. While these national sources are predominantly governmental, private sector input and involvement is substantial (e.g. Annex B) – mainly from the fishing, mining and oil and gas industries. Non-governmental and para-statal institutions play an essential role in the execution of baseline projects by way of providing skilled human resources, high technology infrastructure and regional capacity development. Donor involvement and support comprises a significant fraction of the regional baseline by way of directed funding, advanced technology and infrastructure, training and networking – particularly in Angola and Namibia.

As has been noted previously, the colonial and political past have left the countries of the Benguela Current region with a legacy of fragmented management. Following the liberation struggles, the demise of institutionalised apartheid, and the establishment of democratic societies, collaboration between the three countries to ensure integrated management and sustainable development and protection of the Benguela Current Large Marine Ecosystem became not just desirable, but a regional imperative. The actions which led to the development of the BCLME Programme were to a large extent facilitated by BENEFIT, a regional marine science, technology and training initiative (see TDA for details) which commenced in 1997, and which has done much to engender multi-sectoral collaboration between Angola, Namibia and South Africa and building of trust between the main players. BENEFIT will continue through the life of GEF intervention phase (at least) of the BCLME Programme, and is *de facto* a major **regional** (transboundary) baseline activity. Accordingly, pertinent information on BENEFIT baseline projects are provided under a separate heading, rather than under the individual countries.

Because of the large number of projects relevant to the BCLME Programme undertaken within each of the participating countries (for example, in South Africa's Marine and Coastal Development alone, there are in excess of 150 registered projects), individual projects have been grouped into more generic projects/programmes, country by country, in the accompanying Table G3. For each of these projects/programmes estimates have been provided of the anticipated expenditure during the period 2000-2004, using the best information currently available. In the case of Angola, the baseline cost estimates reflected in Table G3 were updated on 17 November 2000 and relate to the period 2001-2005. It must be noted, however, that while 3 or 5 year targets may exist, governments budget one year at a time, and can revise and change priorities depending on the prevailing political and economic climate. The baseline numbers provided in Table G3 (and also elsewhere in this Expedited Project Document) are estimates, not guaranteed commitments. It must also be pointed out that the governments of Angola, Namibia and South Africa do not at present budget by projects in the sense shown in Table G3, but rather by categories such as human resources (personnel expenses), consumables, equipment, transport, etc. In order to provide meaningful costs associated with the projects/programmes listed in Table G3, baseline cost estimates have been made for each of these from available primary input data in consultation with individual country members of the BCLME Management Committee (who apportioned their country estimates into the generic project groupings). Thus, while there will be a significant variance associated with the costs (US\$) shown in Table G3 for individual projects/programmes, the estimates can be taken as a good guide to the distribution of likely baseline expenditure over the 5 year period (i.e. during the GEF intervention phase of the BCLME Programme).

The linkages shown in Table G3 were determined in consultation with representatives of the governments of the three countries (who had either served on the Management Committee for the BCLME or otherwise had had intimate knowledge of, and involvement in, the BCLME development process). Apart from the utility of Table G3 in demonstrating these linkages between the generic projects/programmes in each country (and in BENEFIT) and the transboundary issues, problem causality, and relevance to the various components of the BCLME Programme, it also highlights some essential differences between the participating governments as to how problems are perceived – even when projects have similar sounding titles. For example, one country may find that lack of capacity/training in a particular field (project) to be a problem, whereas another country may see the project as more relevant for them to a completely different issue – such as environmental variability. What is also evident from Table G3 is that most of the projects/programmes address multiple issues, causes and components of the BCLME rather than a single entity – again demonstrating the extent of the inter-linking within the BCLME matrix.

Key aspects of the baseline situation in each of the three countries plus BENEFIT follow:

Angola

Angola has a long history of living marine resource management based on the concept of sustainable utilization of these resources through the application of appropriate monitoring and assessment (science and technology). Table G3 shows that the management functions span the full range of the transboundary issues identified in the BCLME TDA, and the relevant suites of root causes of problems. It also shows that there is a good balance cost-wise between the management and assessment/monitoring functions, with a wide spread of projects/programmes covering a broad spectrum of activities needed to address the resources and ecosystem per se – ranging from biological studies on living marine resources, through stock assessment and modelling, training, etc. to monitoring and assessment of harmful algal blooms. Again, all of the assessment and monitoring projects address one or more (often several) of the transboundary issues and causes of problems. Of overriding importance is the complexity of the ecosystem and the high degree of variability of the resources and the environment. As is evident in Table G3, the Angolan Government proposes to spend a substantial amount on the monitoring and assessment of living marine resources and ecosystems. An amount of \$2 million is budgeted for protection of marine biodiversity and a further \$3 million for environmental management and its administration. There are substantial amounts for a developing country and illustrates the commitment of the Government to addressing key environmental issues and concerns, e.g. Issue ii (uncertainty regarding ecosystem status and yields), Issue iv (habitat destruction and alteration), Issue v (loss of biotic integrity). As is the case in the majority of the Angolan projects/programmes, a major constraint is the present inadequate capacity to assess ecosystem health – hence the investment by Angola to correct this. Mariculture is in an early development stage, addresses four of the main issues and their causes.

The estimated baseline expenditure by the Angolan government on compliance for the five-year period 2001-2005 is of the order of \$146 million – a realistic amount given the size of the EEZ, the coastline and the diversity of the resources.

As may be anticipated for a country which is now a major producer of oil (now second in Africa only to Nigeria), and with rapid expansion of the oil and gas industry in the coastal zone and within the EEZ planned for the next five years and beyond, it would be expected that there should be substantial government, industry and private sector involvement in addressing environmental issues associated with petroleum extraction activities. This is indeed reflected in the suite of baseline programmes and the associated baseline funding projections over the period (refer to programmes listed under Marine Pollution and Mineral and Energy Resources in Table G3). By way of example, some \$40 million baseline expenditure is estimated for prevention, contingency planning, management and clean-up of oil pollution, with a further \$15 million for environmental impact assessment for oil exploration/extraction activities. Most of this funding will come from industry. Issues addressed include *inter alia* deterioration of water quality (both chronic and catastrophic), habitat destruction and alteration and loss of biotic integrity, and the underlying complexity of the ecosystem and high degree of variability and the ongoing problem of inadequate capacity development and training.

The linkages between the projects/programmes shown in Table G3 and the baseline investments therein, illustrate

the sincerity of the Angolan authorities to addressing the identified transboundary environmental and resource problems and their root causes in the BCLME. Commensurate with this is the wish of Angola to host the Biodiversity/Ecosystem and Pollution Activity Centre for the BCLME Programme. Given the rapid development and industrialisation taking place in the extreme northern part of the Benguela Current region, this is highly appropriate and its implementation will facilitate the building of strong linkages between the country baseline activities and those envisaged through the BCLME Programme.

Namibia

The marine baseline activities in Namibia are extensive, reflecting the relative importance to the country's economy of sustainable utilization and protection of living marine resource, tourism, mining and, in the near future, oil and gas extraction. Since independence in 1990, Namibia has received substantial assistance (both in kind and financial) from international donor agencies towards promoting sustainable management of coastal and EEZ resources. This aid has been instrumental *inter alia* in enabling the Namibian Government to devise far-sighted, environmentally friendly, legislation and appropriate economic instruments and, in pursuance of this objective, to ensure effective implementation and compliance to build capacity and to assess the status and yields of the living marine resources. The primary funding agency has, however, been the Namibian Government per se. Post-independent fisheries policy has been aimed at rebuilding stocks (which had been severely depleted prior to 1990) through conservative harvesting. Innovative partnerships have been established between Government and industry with the objectives of wise resource utilization, optimal development and utilization of human capacity and facilities, and cost-sharing. The Namibian Government recognised at an early stage that co-operation with neighbouring states in science, technology and management was a prerequisite for long term sustainable utilization of marine resources of the BCLME region because of the nature of the resources and the associated transboundary problems. Namibia took the lead in developing co-operative research in the Benguela Current region, and this led to the establishment of the successful regional/transboundary Benguela-Environment-Fisheries-Interaction & Training (BENEFIT) Programme in 1997. Also, in the development of the BCLME Programme, Namibia has been the lead country.

Total baseline investment in Namibia for the BCLME for the period 2000-2004 is estimated at \$112 million, of which the major part (87%) is for living marine resources (both in the EEZ and on the coast). In Table G3, six main projects/programmes relate to management of these resources, including a major programme (\$3.2 million) on capacity development and training aimed at institutional strengthening. Collectively, the management projects/programmes address all seven BCLME issues, several causes of problems, and span all components of the BCLME. Included is a project aimed at promoting the proper management of high seas stocks, both regional and international, which is jointly funded by the Government and NORAD.

Some 60% of Namibia's living marine resource budget is devoted to compliance activities (i.e. monitoring, control and surveillance). These activities are particularly relevant to addressing Issues i (decline in BCLME commercial fish stocks and non-optimal harvesting of living resources) and v (loss of biotic integrity), several of the root causes of problems, and BCLME Component 1 (management and sustainable use of resources). The substantial investment by Namibia in enforcement of fisheries legislation demonstrates the commitment of the country to effective and wise management of renewable resources. This is also demonstrated by Namibia's lead role in marine fisheries within the Southern African Development Community (SADC): The SADC Sector Co-ordinating Unit for Marine Fisheries (which performs an important regional baseline function) is based in Windhoek and is funded by the Namibian Government, together with international donors. This unit addresses all the BCLME transboundary issues, and is central to BCLME Component 1.

Aquaculture (mariculture) comprises a small but developing baseline activity in Namibia with the principal centre being located at Lüderitz. Several problems and their underlying causes identified in the BCLME Programme are addressed by this baseline programme.

Monitoring and assessment of living marine resources (which includes appropriate applied research, both in science and technology) comprises a suite of 12 programmes which address a broad spectrum of issues and problems (see Table G/1). Ship-based surveys (baseline expenditure estimated at \$10 million over the period 2000-2004) of the living resources and the environment, which are jointly funded by Government, NORAD and ICEIDA, provide

essential data required to address Issues i – vii, and are prerequisites for Components 2, 3 and 4 of the BCLME Programme. Again, complexity of the ecosystem, high degree of variability of resources and the environment and inadequate capacity development (A, B) are complicating factors. There is an approximately equal investment in monitoring the state of demersal stocks, of pelagic stocks, and in assessing the influence of the environment on fish distribution and abundance. The relevant linkages with transboundary issues, root causes and the main components of the BCLME Programme are reflected in Table G3.

Namibia has a relatively straight coastline spanning 11° of latitude. Much of the coast is sandy, with few embayments and is sparsely populated. Coastal zone management activities are modest (\$1 million) yet multifaceted, addressing all the BCLME issues, problem causes and components. Except at a few point sources and areas impacted by diamond mining, the Namibia coastal zone is relatively unpolluted. As a consequence, the substantial investment with respect to marine pollution is related to control and management ports (e.g. at Walvis Bay), oil pollution contingency planning and management (both coastal and EEZ). The total estimated expenditure on marine pollution by Namibia for the period 2000-2004 is of the order of \$4 million, which is still a substantial amount given the pristine nature of much of the marine and coastal environment. This illustrates the Government's commitment to prevention of deterioration in water quality – both chronic and catastrophic (Issue iii) – cf. also Component 4 of the BCLME Programme (maintenance of ecosystem, health and management of pollution).

Mining plays an important part in the Namibian economy. In the marine environment diamond mining, both in the coastal zone and on the EEZ seabed, is a substantial industry. The baseline investment in impact assessment of marine diamond mining and for oil and gas exploration will be of the order of \$8.5 million over the next five years. Mining and related activities which disturb the seabed are of concern in terms of habitat destruction/alteration (Issue iv) and loss of biotic integrity (Issue v), particularly in view of the complexity of the ecosystem of high degree of variability (root cause A), and their proper management is addressed directly by Component 4 of the BCLME Programme. What is perhaps a unique feature is that in Namibia the seabed is co-managed by the Ministries responsible for living marine resources and for mining. It is this baseline approach to integrated and responsible management which is seen as a cornerstone for the development of integrated management for the BCLME as a whole, transcending sectoral and geopolitical boundaries.

South Africa

The baseline activities for South Africa are very extensive, totalling approximately US\$200 million for the period 2000-2004, of which the major part (93%) is allocated for sustainable utilisation and management of living marine resources (both within the EEZ and on the coast). This apparent baseline bias towards living resources can be ascribed to three main factors. First, South Africa's rich west and south coast fish resources have been harvested for several centuries, both by way of subsistence and commercial fisheries. These fisheries have been actively researched and managed within the country for more than a century. Second, until relatively recently the western seaboard of South Africa has been sparsely populated and not subjected to major development pressure. Third, except for fishing and diamond mining activities (both along the coast and on the seabed) industrial development has been confined to the Cape Town and Saldanha Bay nodes. That situation is now changing and increasing pressure is being placed on the coast and on the renewable and non-renewable resources.

As already mentioned, South Africa has a long tradition of marine living resource utilisation and management. Prior to the demise of apartheid and the establishment of a democratically elected government in 1994, while the need for these resources to be managed holistically across geopolitical boundaries within the greater Benguela Current ecosystem was recognised, formal collaboration with independent Angola and Namibia (with the objective of system-wide monitoring, assessment and management) was not possible. Notwithstanding this, the strong infrastructure, technology, education and information base which has been established in South Africa over many years is now seen as an important asset for the region as a whole, as transboundary problems are addressed and collectively managed. Monitoring, assessment and management of South Africa's fish resources are financed jointly by Central Government and the fishing industry via the Marine Living Resources Fund. In Table G3, six main projects in South Africa have been identified under marine living resource management. Collectively these address all the issues identified in the TDA process as major problem areas, as well as root causes of the problems. Training and capacity development forms a cornerstone of institutional strengthening nationally, as well as

addressing needs of other BCLME countries. The bilateral donor support programme is playing a key role in *inter alia* the development of equitable policies and in development of advanced monitoring and assessment capacity, including at the ecosystem level. Although the aid is bilateral, the spin-off and networking extends across the geopolitical country boundary.

Approximately 25% of South Africa's baseline budget for living marine resources is devoted to monitoring and assessment activities, including research covering the full spectrum of activities necessary to provide management with the requisite input information on the status of the resources and the environment. South Africa has invested substantially, and will continue to do so, in the assessment of the influence of the environment (including variability and change) on fisheries distribution and abundance. Some US\$6.4M is earmarked for this activity during 2000-2004, and this illustrates the recognition of government and the fishing industry of the importance of incorporating into sustainable resource management those elements (signals) which transcend (internal) geopolitical and (external) ecosystem boundaries. The focus of the environmental project addresses both the problem of ecosystem complexity, the cause (high degree of variability), and inadequate capacity development and training (cf. TDA). Like the environment, knowledge and understanding of the basic biology of the harvested and non-harvested resources is an essential input into resource assessment and sustainable management. This information is applicable throughout the BCLME. Likewise, studies on biodiversity, marine protected areas, as well as techniques to manage at the ecosystem level transcend boundaries, address several issues identified in the TDA and their root causes. The cornerstone of proper marine living resource management is the quantitative assessment of the stock sizes and yields (allowable catches) of the various target species. The utility of this for stocks which straddle or migrate across geopolitical boundaries is self evident – cf. problem of decline in commercial stocks in the BCLME, non-optimal harvesting and loss of biotic integrity (Issues i, v) and their causes – ecosystem complexity/variability and inadequate capacity development.

The broad-based service-type projects, such as ship-based surveys of living resources, technical and information services, communication services etc., provide essential inputs into the resource assessment and management activities and the dissemination of information. Again these are relevant to all the transboundary issues identified in the TDA, and address the various root causes.

Harmful algal blooms are a problem throughout the BCLME region (issue vii), transcending geopolitical boundaries. National monitoring and impact assessment activities contribute directly to system-wide information base needed to establish appropriate response mechanisms. HABs are, likewise, important factors with respect to responsible development of mariculture (which in turn will play an increasing role in creating employment in coastal communities and reducing the pressure on presently exploited resources). Not only is proper mariculture management important in terms of Component 2 (management and sustainable use of BCLME resources) but is equally important in terms of maintenance of ecosystem health (cf. introduction of alien species) and pollution (waste products from mariculture industry which cause localised eutrophication and hypoxia).

Compliance, i.e. surveillance and control/law-enforcement, comprises an essential component of sustainable ecosystem use and management (cf. Components 1 and 2 of the BCLME). The decline in some fish stocks (Issue i) can be attributed to inadequate surveillance and enforcement of legislation as well as poor legal frameworks etc. (problem causality B-G) – so can problems such as habitat destruction, loss of biotic integrity (Issues iv, v). The baseline amount provided for compliance over the period 2000-2004 accounts for nearly 50% of the total budget, indicating South Africa's commitment to eradicating illegal activities in its EEZ and its recognition of the need for proper enforcement at the scale of the BCLME. A major part of the compliance budget is for the acquisition of fisheries patrol vessels. This, together with actions taken by its northern neighbours, will be a key element for the successful implementation of the BCLME Programme *sensu lato*.

Marine pollution control and management, oil pollution contingency planning/management (cf. Components 3 and 4) and coastal zone management (cf. Components 1-5 of the BCLME) together account for just over 5% of the South African baseline budget. Activities associated with the GEF International Ballast Water Project which, although not included in the baseline budget, are very important viz-a-viz issues v (loss of biotic integrity) ecosystem health (issue vi) and the introduction and spread of HAB species (Issues v, vii). DFID is playing a significant role in helping South Africa develop a proper coastal zone management policy, and close links between

this policy and policies which will emerge out of the BCLME initiative are foreseen.

With respect to management of non-renewable resources, in particular diamond mining on the seabed and along the coast and oil/gas extraction, the relevant industries are investing in appropriate impact assessment and monitoring. These activities are relevant to Components 1-4 of the BCLME Programme, address TDA identified Issues iii and iv (deterioration in water quality, habitat destruction) and Problem Causality A and D, particularly the latter (inadequate implementation of available regulatory instruments).

BENEFIT

BENEFIT is a truly transboundary science, technology and training initiative in the Benguela Current region. Conceived and driven by the three countries (Angola, Namibia and South Africa) in partnership with SADC and international donor agencies, BENEFIT has as its overall goal the development of the enhanced science capability required for optimal and sustainable utilization of living resources of the Benguela ecosystem by (i) improving knowledge and understanding of the dynamics of important commercial stocks, their environment and linkages between environmental processes and stock dynamics and (ii) building appropriate human and material capacity for marine science and technology in the countries bordering the Benguela ecosystem.

BENEFIT is funded jointly by the three governments, international donor agencies, industry, The World Bank and the African Development Bank, with an estimated budget of approximately \$18 million spread over five years. The trust and co-operation in science, education and technology which BENEFIT has engendered during the formulation and execution phases (it formally commenced in 1997) has paved the way for the development of similar trust and co-operation between the three countries in respect of sustainable transboundary management of marine resources and the ecosystems as a whole, viz the BCLME Programme.

Existing BENEFIT projects fall into groupings which address the four principal components of the Programme (living resources, environment, linkages, training) – see Table G3. A fifth component is planned for the future, viz science support for sustainable aquaculture development. The main projects are listed in Table G3 and their relevance and linkages to issues, problem causality and component of the BCLME Programme are shown in the Table. All of the projects in the monitoring and assessment of living marine resources component address directly BCLME Issue i (decline in commercial fish stocks and non-optimal harvesting of living resources) and the causes A and B (ecosystem complexity and variability, and inadequate capacity development), and are relevant to Components 1, 2 and 5 of the BCLME. The suite of four BENEFIT environmental projects address *inter alia* the problem of variability-uncertainty and its underlying causes, which is central to Component 3 of the BCLME Programme. Other environmental issues such as deterioration in water quality, harmful algal blooms and loss of biotic integrity are also addressed. Cause and effect of variability in resources and the environment are addressed through the linkage projects, which also examine the very real twin problems (of relevance to sustainable management) of decadal variability and long-term ecosystem changes.

Within BENEFIT, training and capacity development is done **through** science and technology. While much of the training is done by way of hands-on transfer of knowledge and skills, BENEFIT has developed and conducted a large number of specialised training courses and workshops. The training and capacity development component of BENEFIT addresses several of the issues identified in the BCLME TDA and the causes of the problems (see Table G3). As such, it is highly relevant to Components 2, 3 and 4 of the BCLME Programme, and also to some extent to Component 5 (donor co-ordination and fund raising).

Key to Table G3: Viz Component of BCLME, Issues and Problem Causality

Component 1	Project Co-ordination
Component 2	Management & sustainable use of BCLME resources
Component 3	Assessment of environmental variability, ecosystem impacts and improvement of predictability
Component 4	Maintenance of ecosystem health and management of pollution
Component 5	Donor co-ordination and fundraising.

Issues i	Decline in BCLME commercial fish stocks and non-optimal harvesting of living resources.
Issues ii	Uncertainty regarding ecosystem status and yields in a highly variable environment.
Issues iii	Deterioration in water quality – chronic and catastrophic.
Issues iv	Habitat destruction and alteration, including <i>inter alia</i> modification of seabed and coastal zone and degradation of coastscapes.
Issues v	Loss of biotic integrity (changes in community composition, species diversity, introduction of alien species etc.) and threat to biodiversity/endangered and vulnerable species.
Issues vi	Inadequate capacity to assess ecosystem health (resources and environment, and variability thereof).
Issues vii	Harmful algal blooms (HABs).
Problem Causality A	Complexity of ecosystem and high degree of variability (of resources and environment)
Problem Causality B	Inadequate capacity development (human and infrastructure) and training.
Problem Causality C	Poor legal framework at the regional, national and international levels.
Problem Causality D	Inadequate implementation of available regulatory instruments.
Problem Causality E	Inadequate planning at all levels.
Problem Causality F	Insufficient public involvement.
Problem Causality G	Inadequate financial mechanisms and support.

Note For each of the above problem causality categories A – G, there exist a subset of causality elements (refer to TDA for details).

Acronyms used in Annex F2

ADB	African Development Bank
BENEFIT	Benguela-Environment-Fisheries-Interaction-Training (Progamme)
CZ	Coastal zone
DANCED	Danish Co-operation on Environment and Development
DFID	Department for International Development
EEZ	Exclusive economic zone
EU	European Union
FAO	Food and Agricultural Organisation (of the United Nations)
FSP	Fonds de Solidarité Prioritaire (France)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (Germany)
ICEIDA	Icelandic International Development Agency
ICLARM	International Centre for Living Aquatic Resource Management
IRD	Institut de Recherche pour le Développement (France)
NAMPORT	Namibian port authority
NORAD	Norwegian Agency for Development Co-operation
SIDA	Swedish International Development Agency
US AID	United States Aid for International Development

Annex F3
LIST OF RELEVANT BASELINE PROGRAMMES AND PROJECTS (ONGOING AND PLANNED), BY COUNTRY/REGION⁴

COUNTRY OR REGION	PROGRAMME/PROJECT	US\$ (x1000)	YEARS	FUNDING AGENCY	LOCATION	BCLME ISSUES ADDRESSED	PROBLEM CAUSALITY ADDRESSED	COMPONENT OF RELEVANCE
ANGOLA	MARINE LIVING RESOURCE MANAGEMENT	50	2001-2005	Govt.	Region	i – vii	A – G	1 – 5
	§ Effective intra- and inter-project coordination and support through the establishment of a PCU	200	2001-2005	Govt.	EEZ & CZ	i – vii	A, B, C, D, G	2, 4
	§ Legislation: development and harmonisation	4519	2001-2005	Govt.	EEZ & CZ	i – vii	A, B, C, G	2 – 5
	§ Management and administrative support services	650	2001-2005	Govt., NORAD	EEZ & CZ	i, ii, v, vi	A, B, C, E, G	2
	§ Development and implementation of a master plan for the fisheries sector	7500	2001-2005	FIDA, Govt.	EEZ & CZ	i, ii, iv, vi	A, B, G	2
	§ Sustainable development of fisheries communities	129	2001-2005	FAO, Govt.	EEZ	i, ii, v, vi	A	2
	§ Support of fisheries data collection and recording system	600	2001-2005	Govt., FAO	CZ	i, ii, v, vi	A, B, G	2
	§ Sustainable development of small scale fisheries	800	2001-2005	Govt., NORAD	EEZ & CZ	vi	B	2 – 4
	§ Training and capacity development							
	MONITORING AND ASSESSMENT OF LIVING MARINE RESOURCES	1425	2001-2005	Govt.	EEZ	i, vi	A, B, G	2, 4
	§ Biological studies of living marine resources	5000	2001-2005	NORAD, Govt.	EEZ	i, ii, iv, v, vi	A	2
	§ Ship-based surveys of living marine resources	1425	2001-2005	Govt.	EEZ	ii, vi	A, B	3
	§ Environmental influence on fisheries distribution and abundance	2645	2001-2005	Govt.	EEZ & CZ	i – vii	A, B	2 – 4
	§ Research management and administration	1000	2001-2005	Govt., Industry	EEZ	ii	A	2
	§ New marine resources (feasibility assessment)	475	2001-2005	Govt., NORAD	EEZ & CZ	i, vi	A, B	2
	§ Stock assessment and modelling	200	2001-2005	Govt., NORAD	EEZ & CZ	vi	B	2 – 4
	§ Training							
	MONITORING AND ASSESSMENT OF ECOSYSTEMS	400	2001-2005	Govt., Industry	EEZ & CZ	iii – vi	A, B	2 – 4
	§ Environmental impact assessment	2000	2001-2005	Govt.	EEZ & CZ	v, vi	A, B, G	4
	§ Biodiversity and marine protected areas	500	2001-2005	Govt.	EEZ & CZ	i – vii	A, F	2, 4
	§ Environmental education, publications, media	3145	2001-2005	Govt.	EEZ & CZ	ii – vi	A, B	2 – 4
	§ Environmental management and administrative support	200	2001-2005	Govt., BENEFIT	EEZ & CZ	vi, vii	A	2 – 4
	§ Monitoring and assessment of harmful algal blooms	475	2001-2005	Govt.	CZ	i, v, vi, vii	A, B, G	2
		500	2001-2005	Govt., Industry	CZ	i, v, vi, vii	A, B, G	2
	MARICULTURE DEVELOPMENT							
	§ Mariculture research	6500	2001-2005	Govt.	EEZ & CZ	i, v, vi	A, B, C, D	2, 4
ANGOLA (CONT.)								

⁴ Refer to preceding text in Annex G2 for key to numbering of issues, problem causality and component of BCLME Programme

	§ Responsible development of mariculture	1500	2001-2005	Govt.	EEZ & CZ	i, v, vi	A, B, C	2, 4
		4800	2001-2005	Govt.	EEZ & CZ	i, v, vi	A	2
	COMPLIANCE							
	§ Monitoring, control and surveillance	5814	2001-2005	Govt.	EEZ & CZ	i – vii	A, G	2 – 4
	§ Administrative support for compliance	2500	2001-2005	Govt., donor (?)	EEZ	i, ii, vi	A	2
	§ Patrol vessel and aircraft	6400	2001-2005	Govt.	CZ	iv	A, B, G	2, 4
	INFRASTRUCTURE							
	§ Administrative infrastructure	5000	2001-2005	Govt., Industry	CZ	iii – vii	A, C, D, G	3, 4
	§ Research vessel	8000	2001-2005	Govt., Industry	EEZ & CZ	iii – vii	A, B, C, D, G	3, 4
	§ Coastal structures (harbours, bridges etc.)	40 000	2001-2005	Govt., Industry	EEZ & CZ	iii – vii	A, E	2 – 4
	MARINE POLLUTION							
	§ Coastal pollution prevention programme							
	§ Marine pollution prevention and management	2000	2001-2005	Govt., Industry	CZ	i – vii	A – E	2, 4
	§ Oil pollution prevention measures (prevention, contingency planning, management, clean-up)							
	COASTAL ZONE MANAGEMENT							
	§ Coastal zone management	500	2001-2005	Govt., Industry	EEZ & CZ	iii, iv	A, B	2, 4
		15 000	2001-2005	Govt., Industry	EEZ & CZ	iii, iv	A, B	2, 4
		500	2001-2005	Govt., Industry	EEZ & CZ	iii, iv	A, B	2, 4
	MINERAL AND ENERGY RESOURCES (INCLUDING OIL AND GAS)							
	§ Management of minerals and energy resources	2000	2001-2005	Govt., Industry	EEZ & CZ	i – vii	A, B, G	1 – 5
	§ Impact assessment of oil and gas extraction	12 000	2001-2005	Govt., Industry	EEZ & CZ	i – vii	A	2 – 4
	§ Impact assessment and monitoring of marine mining							
	SUPPORT SERVICES							
	§ Communication and information services (library, publications)							
	§ Technical support services							

COUNTRY OR REGION	PROGRAMME/PROJECT	US\$ (x1000)	YEARS	FUNDING AGENCY	LOCATION	BCLME ISSUES ADDRESSED	PROBLEM CAUSALITY ADDRESSED	COMPONENT OF RELEVANCE
NAMIBIA	MARINE LIVING RESOURCE MANAGEMENT	1800	2000-2004	Govt.	EEZ & CZ	i – vii	A, B	1 – 5
	§ Integrated management and administrative support services (living marine resources)	800	2000-2004	Govt., NORAD	EEZ, regional	i, ii	A, B, C, G	1 – 5

NAMIBIA (CONT.)	§	Cooperation on management of high seas stocks (regional and international)	3204	2000-2004	Govt., NORAD, GTZ, DFID	National	i – vii	B	2 – 4
	§	Training and capacity development	1207	2000-2004	Govt., ICIEDA, NORAD, GTZ	National	i – vii	A, B, C	2 – 4
	§	Policy, planning and resource economics	600	2000-2004	Govt., GTZ	National	i – vii	B, C	1 – 5
	§	Development of legislation	250	2000-2004	Govt.	Regional	i – vii	A – G	1, 5
	§	Effective intra- and inter-project coordination and support through establishment of a PCU							
		MONITORING AND ASSESSMENT OF LIVING MARINE RESOURCES	4617	2000-2004	Govt.	EEZ & CZ	i – vii	A, B	1 – 5
			3627	2000-2004	Govt., Industry, NORAD	EEZ	i, iv, v	A, B	2, 3
			2969	2000-2004	Govt., Industry, EU, IRD	EEZ	i, ii, v	A, B	2, 3
	§	Research management and administration	824	2000-2004	Govt., Industry	EEZ & CZ	i, iii, iv, v, vi	A, B	2 – 4
	§	Monitoring state of demersal fish stocks	499	2000-2004	Govt., NORAD, Industry	EEZ, regional	i, ii, iv, v, vi	A, B, C	2 – 5
	§	Monitoring state of pelagic fish stocks	0	0	0	0	0	0	0
	§	Monitoring state of crustacean resources	658	2000-2004	Govt.	EEZ & CZ	i	A, B	2
	§	Straddling stock management and regional cooperation	1340	2000-2004	Govt.	EEZ & CZ	i, iv, v	A, B	2 – 4
	§	Quantitative resource assessment	329	2000-2004	Govt.	EEZ & CZ	v, vi	A, B	2 – 4
	§	Studies on selected top predators (seals, sea birds)	3793	2000-2004	Govt., GTZ, IRD	EEZ & CZ	ii	A, B	3, 4
	§	Sustainable ecosystem management	10 000	2000-2004	Govt., NORAD, ICEIDA	EEZ	i, ii, iv, v, vi, vii	A, B	2 – 4
	§	Environmental influence on fish distribution and abundance	489	2000-2004	Govt.	National	i – vii	B	1 – 5
	§	Ship-based surveys of living resources and environment	1301	2000-2004	Govt., DFID, ICLARM, GTZ	EEZ & CZ	i – vii	A, B	2, 3
	§	Information services and support							
	§	Technical support services	785	2000-2004	Govt., Industry	CZ	i, iii, v, vi, vii	A – G	2 – 4
		AQUACULTURE DEVELOPMENT							
	§	Responsible development of aquaculture	0	0	0	0	0	0	0
			49778	2000-2004	Govt., NORAD, Industry	EEZ & CZ	i, v, vii	B – E	2
		MONITORING, CONTROL AND SURVEILLANCE	8784	2000-2004	Govt.	CZ	i, v, vii	B – F	2
			0	0	0	0	0	0	0
	§	Sea-based monitoring, control and surveillance	200	2000-2004	Govt., France, ICEIDA	Regional	i – vii	A – G	1, 2, 5
	§	Land-based monitoring, control and surveillance							
		SADC MARINE FISHERIES COORDINATION	301	2000-2004	Govt., NORAD	EEZ	i – vii	A – G	4
			2373	2000-2004	NAMPORT	CZ	iii	A, B	4
	§	SADC Sector Coordinating Unit for Marine Fisheries	1500	2000-2004	Govt., Industry, SIDA	EEZ & CZ	iii	A – G	2 – 4
		MARINE POLLUTION							
	§	Pollution control and management (EEZ)	1045	2000-2004	Govt., DANCED	CZ	i – vii	A – G	1 – 5
	§	Pollution control and management (ports)							
	§	Oil pollution contingency planning and management							
			516	2000-2004	Govt.	EEZ & CZ	iv, v	B, G	2, 4
			7280	2000-2004	Industry	EEZ & CZ	iv, v	A	2, 4
		COASTAL ZONE MANAGEMENT							
	§	Sustainable development and utilization of the coast (cf environment and tourism)	1250	2000-2004	Industry	EEZ & CZ	iv, v	A	2, 4

	MINERALS AND ENERGY RESOURCES § Management of minerals and energy resources § Impact assessment and monitoring of marine diamond mining § Impact assessment and monitoring of activities re oil and gas							
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COUNTRY OR REGION	PROGRAMME/PROJECT	US\$ (x1000)	YEARS	FUNDING AGENCY	LOCATION	BCLME ISSUES ADDRESSED	PROBLEM CAUSALITY ADDRESSED	COMPONENT OF RELEVANCE
SOUTH AFRICA	MARINE LIVING RESOURCE MANAGEMENT	14896	2000-2004	Govt. and Industry	EEZ & CZ	i, ii, iv, v, vi, vii	A – G	1 – 5
	§ Integrated management and administrative support services (living marine resources)	1984	2000-2004	Govt. and Industry	CZ	i, ii, iv, v, vi, vii	B	2
	§ Training and capacity development	4328	2000-2004	Govt. and Industry	EEZ	i, iv	A, B, G, E	2, 3, 5
	§ Economics and resource development	588	2000-2004	Govt. and Industry	EEZ & CZ	i, ii, iv, v	B, C, D, E, G	2, 5
	§ Resource rights allocations	3312	2000-2004	NORAD, IRD, USAID	EEZ	i – vii	B, G	5
	§ Bilateral donor support programme	50	2001-2004	Govt.	Regional	i – vii	A – G	1
	§ Effective intra- and inter-project coordination and support through establishment of a PCU							
SOUTH AFRICA (CONT.)	MONITORING AND ASSESSMENT OF LIVING MARINE RESOURCES	2807	2000-2004	Govt. and Industry	EEZ & CZ	i – vii	A, B	1 – 5
	§ Research management and administration	6446	2000-2004	Govt. and Industry	EEZ & CZ	i, ii, iii, vi, vii	A, B	2, 3
	§ Environmental influence on fisheries distribution and abundance	8836	2000-2004	Govt. and Industry	EEZ & CZ	i, ii	A, B	2
	§ Age, growth and reproduction of living marine resources	484	2000-2004	Govt. and Industry	EEZ & CZ	i, ii, iv, v, vi	A, G	2, 4
		2613	2000-2004	Govt. and Industry	EEZ & CZ	i, ii, vi	A, B, C, D	2
	§ Biodiversity and marine protected areas	1935	2000-2004	Govt. and Industry	EEZ & CZ	i, v	A, B, C, E, G	2, 4
	§ Development of sustainable ecosystem management	1377	2000-2004	Govt. and Industry	EEZ & CZ	i, v	A, B	2
	§ Sustainable development of subsistence fisheries	14516	2000-2004	Govt. and Industry	EEZ	i – vii	A, G	2 – 4
	§ Resource assessment and modeling	9818	2000-2004	Govt. and Industry	EEZ & CZ	i – vii	A – G	2 – 4
	§ Ship-based surveys of living resources and environment	1984	2000-2004	Govt. and Industry	EEZ & CZ	i – vii	A – G	1 – 5
	§ Technical and information services (electronics, engineering, IT)							
	§ Communication services (library, reprographics, publications, editorial, media, environmental education)	290	2000-2004	Govt. and Industry	CZ	vii	A, B, G	3, 4
	§ Monitoring and assessment of harmful algal blooms (HABs)	3128	2000-2004	Govt. and Industry	CZ	i, iii, iv, v, vii	B, C, E, G	2, 4
	MARICULTURE DEVELOPMENT	34572	2000-2004	Govt. and Industry	EEZ & CZ	i, iii, iv, v, vii	B – G	1, 2
	§ Responsible development of mariculture	62965	2000-2004	Govt. and Industry	EEZ	i	B – G	1, 2
		1129	2000-2004	Govt. and Industry	EEZ & CZ	i, v	B, C, G	1, 2

	COMPLIANCE							
	§ Monitoring, control and surveillance	2061	2000-2004	Govt.	EEZ & CZ	iii, iv, v	C	3, 4
	§ Patrol vessel replacement programme	6187	2000-2004	Govt. and Industry	EEZ & CZ	iii, iv, v	A, C	3, 4
	§ Vessel monitoring system	9000	2000-2004	Local govt. and Industry	CZ	iii, iv, v	C	3, 4
	MARINE POLLUTION							
	§ Marine pollution control and management	2000	2000-2004	Govt. and DFID	CZ	i, ii, iii, iv, v	A, B, C, D, E	1 – 5
	§ Oil pollution contingency planning and control							
	§ Improvement of water quality							
	COASTAL ZONE MANAGEMENT	267	2000-2004	Govt.	EEZ & CZ	iii, iv	C, E, F	1 – 4
	§ Coastal zone management	1351	2000-2004	Industry	EEZ & CZ	iii, iv	A, D	1 – 4
	MINERALS AND ENERGY RESOURCES	1250	2000-2004	Industry	EEZ & CZ	iii, iv	A, D	1 - 4
	§ Management of minerals and energy resources							
	§ Impact assessment and monitoring of marine diamond mining							
	§ Impact assessment and monitoring of oil and gas extraction							

COUNTRY OR REGION	PROGRAMME/PROJECT	US\$ (x1000)	YEARS	FUNDING AGENCY	LOCATION	BCLME ISSUES ADDRESSED	PROBLEM CAUSALITY ADDRESSED	COMPONENT OF RELEVANCE
BENEFIT	MONITORING AND ASSESSMENT OF LIVING MARINE RESOURCES	9613	2000-2004	Govts., NORAD, ICEIDA, FAO	Regional	i	A, B	1, 2, 5
	§ Biological characteristics of the Benguela resources				Regional	i	A, B, C, G	1, 2, 5
	§ Stock definition: stock distribution and segregation project				Regional	i	A, B	1, 2, 5
	§ Assessment of stock abundance and recruitment				Regional	i	A, B, G	1, 2, 5
	§ Improvement of stock assessment methodology				Regional	i, ii, iv, v	A, B	1, 2, 5
	§ Factors affecting stock dynamics				Regional	i	A, B	1, 2, 5
	§ Stock dynamics and modelling project				0	0		
	ASSESSMENT OF ENVIRONMENTAL VARIABILITY	2593	0 2000-2004	0 Govts., GTZ, IRD/FSP	Regional	ii	0 A, B, G	0 1, 3, 5
	§ BENEFIT remote sensing programme				Regional	ii, iii, vii	A, B, G	3 – 5
	§ Shipborne monitoring of the Benguela Current system				Regional	ii, iii, v, vii	A, B, G	3, 5
	§ Monitoring of the Benguela coastal zone				Regional	ii, v	A, B, G	1-5
	§ Process studies and trophic dynamics	2592	0 2000-2004	0 Govts., GTZ, IRD/FSP, NORAD	0	0	0	0
					1			
					Regional	i, ii, iii	A, B, G	1-5

RESOURCE-ENVIRONMENT LINKAGES § Cause-effect linkages between resources and environment § Decadal studies and long-term ecosystem changes AQUACULTURE § Science support for sustainable aquaculture development TRAINING AND CAPACITY DEVELOPMENT § Science and technology training programme § Training of inspectors and observers in basic data collection § Post-harvest technology application § Technical English education § Demonstration projects and pilot studies (training application)					Regional	i, ii, iv, v	A, B, G	1-5
	See text	? -2004	Govts., Industry, Donors		Regional	i, iii, iv, v, vii	B, E, F, G	1, 2, 4, 5
	3317	2000-2004	Govts., NORAD, DFID, GTZ, ADB, IRD/FSP, World Bank		Regional	i-vii	A, B, E	2 – 5
					Regional	i, ii, v, vi	B, D, E, F, G	2, 5
					0	0	0	0
					Regional	i, iii	B	2 – 5
					Regional	vi	B, E	2 – 4
					Regional	i-vii	B, F, G	2 – 4

Attachment 1
Detailed Project Budget
Input

BL	DESCRIPTION	BL TOTAL	TOTAL	TOTAL	p/m
			Activities	AOS	
10	PROJECT PERSONNEL				
11	International Experts				
11-01	Chief Technical Advisor	710,200	670,000	40,200	60
11-02	International Consultant(LME Expert)	190,800	180,000	10,800	12
11-03	International Consultant(Resources)	424,000	400,000	24,000	40
11-04	International Consultant(Oceanography)	180,200	170,000	10,200	17
11-05	International Consultant(Ecosystem)	10,600	10,000	600	1
<u>11-99</u>	<u>Sub-Total</u>	<u>1,515,800</u>	<u>1,430,000</u>	<u>85,800</u>	
13	Administrative Support				
13-01	PCU Administrator	159,000	150,000	9,000	60
13-02	PCU Secretary	79,500	75,000	4,500	60
13-03	Activity Center Directors	508,800	480,000	28,800	180
13-04	National Secretaries	190,800	180,000	10,800	180
<u>13-99</u>	<u>Sub-Total</u>	<u>938,100</u>	<u>885,000</u>	<u>53,100</u>	
15	Monitoring and Evaluation/TPRs				
15-01	Duty Travel	196,100	185,000	11,100	
<u>15-99</u>	<u>Sub-Total</u>	<u>196,100</u>	<u>185,000</u>	<u>11,100</u>	
16	Mission Costs/Travel				
16-01	Mission Costs /PCU	121,900	115,000	6,900	
16-02	Mission Costs /Activity Costs	159,000	150,000	9,000	
16-03	Mission Costs /Living Resources Asst.	360,400	340,000	20,400	
16-04	Mission Costs /Mining/Drilling Impacts	84,800	80,000	4,800	
16-05	Mission Costs /Mariculture	53,000	50,000	3,000	
16-06	Mission Costs /Vulnerable Species Asst.	53,000	50,000	3,000	
16-07	Mission Costs Non-harvested Species Asst.	53,000	50,000	3,000	
16-08	Mission Costs /Environment(Variability/Predictability)	339,200	320,000	19,200	
16-09	Mission Costs /Environment(Capacity Building)	63,600	60,000	3,600	
16-10	Mission Costs /HABs	21,200	20,000	1,200	
16-11	Mission Costs /Water Quality	169,600	160,000	9,600	
16-12	Mission Costs /Major Oil Spill	10,600	10,000	600	
16-13	Mission Costs /Habitat Destruction/Reserves	58,300	55,000	3,300	
16-14	Mission Costs /Biodiversities	58,300	55,000	3,300	
<u>16-99</u>	<u>Sub-Total</u>	<u>1,605,900</u>	<u>1,515,000</u>	<u>90,900</u>	

BL	DESCRIPTION	BL TOTAL	TOTAL Activities	TOTAL AOS	p/m
17	National Consultants				
17-01	Consultant(Living Resources)	180,200	170,000	10,200	68
17-02	Consultant (Mining/Drilling Impacts)	54,060	51,000	3,060	20
17-03	Consultant (Mariculture)	31,800	30,000	1,800	12
17-04	Consultant (Vulnerable Habitats)	54,060	51,000	3,060	20
17-05	Consultant (Non-harvested Species)	43,460	41,000	2,460	16
17-06	Consultant (Environment/Predictability)	106,000	100,000	6,000	40
17-07	Consultant (HABs)	31,800	30,000	1,800	12
17-08	Consultant (Water Quality)	127,200	120,000	7,200	48
17-09	Consultant (Habitat Expert)	63,600	60,000	3,600	24
17-10	Consultant (Biodiversity)	43,990	41,500	2,490	16
<u>17-99</u>	<u>Sub-Total</u>	<u>736,170</u>	<u>694,500</u>	<u>41,670</u>	
19	<u>COMPONENT TOTAL</u>	<u>4,992,070</u>	<u>4,709,500</u>	<u>282,570</u>	
20	CONTRACTS				
20-01	Living Resources	2,167,700	2,045,000	122,700	
20-02	Mining/Drilling Impacts	275,600	260,000	15,600	
20-03	Mariculture	190,800	180,000	10,800	
20-04	Vulnerable Habitats	265,000	250,000	15,000	
20-05	Non-harvested Species	498,200	470,000	28,200	
20-06	Environment(Variability/Predictability)	1,436,300	1,355,000	81,300	
20-07	Environment(Capacity Building)	42,400	40,000	2,400	
20-08	HABs	127,200	120,000	7,200	
20-09	Water Quality	408,100	385,000	23,100	
20-10	Major Oil Spills	31,800	30,000	1,800	
20-11	Habitat Destruction/Reversal	233,200	220,000	13,200	
20-12	Biodiversity	153,700	145,000	8,700	
<u>20-99</u>	<u>Sub-Total</u>	<u>5,830,000</u>	<u>5,500,000</u>	<u>330,000</u>	
29	<u>COMPONENT TOTAL</u>	<u>5,830,000</u>	<u>5,500,000</u>	<u>330,000</u>	
30	Training				
32-01	Workshops	230,790	217,726	13,064	
32-02	In-Services	215,959	203,735	12,224	
32-03	Study Tours	169,600	160,000	9,600	
32-04	Formal Study	169,600	160,000	9,600	
32-99	Sub-Total	<u>785,949</u>	<u>741,461</u>	<u>44,488</u>	
39	<u>COMPONENT TOTAL</u>	<u>785,949</u>	<u>741,461</u>	<u>44,488</u>	
45	EQUIPMENT				
45-01	Living resource Specialist Instruments	339,200	320,000	19,200	
45-02	Mining/Drilling Assessment (Asst.) Equipment	106,000	100,000	6,000	
45-03	Vulnerable Species Asst. Equipment	53,000	50,000	3,000	

BL	DESCRIPTION	BL TOTAL	TOTAL Activities	TOTAL AOS	p/m
45-04	Non-harvested Species Asst. Equipment	212,000	200,000	12,000	
45-05	Environment Monitoring Equipment	1,081,200	1,020,000	61,200	
45-06	Water Quality Equipment	106,000	100,000	6,000	
45-07	Computers (PCU)	37,100	35,000	2,100	
45-08	Computers (Activity Center)	90,630	85,500	5,130	
45-09	Vehicle (CTA) x 1	46,640	44,000	2,640	
45-10	Vehicles (Activity Center) x 3	111,300	105,000	6,300	
45-11	Operating Costs (PCU)	127,200	120,000	7,200	
45-12	Office Furniture (PCU)	9,540	9,000	540	
45-99	Sub-Total	2,319,810	2,188,500	131,310	
49	COMPONENT TOTAL	2,319,810	2,188,500	131,310	
50	MISCELLANEOUS				
51	Sundries				
51-01	PCU	65,720	62,000	3,720	
52-02	Activity Center Directors	79,500	75,000	4,500	
51-03	Administrative/Secretarial Contract Support	40,242	37,964	2,278	
51-04	Support Services (Activity Center)	106,000	100,000	6,000	
51-05	Living Resources Asst.	233,200	220,000	13,200	
51-06	Mining/Drilling Impacts	42,400	40,000	2,400	
51-07	Mariculture	10,600	10,000	600	
51-08	Vulnerable Species Asst.	21,200	20,000	1,200	
51-09	Non-harvested Species Asst.	53,000	50,000	3,000	
51-10	Environment(Variability/Predictability)	312,700	295,000	17,700	
51-11	HABs	31,800	30,000	1,800	
51-12	Water Quality	53,000	50,000	3,000	
51-13	Habitat Destruction/Reversal	47,700	45,000	2,700	
51-14	Biodiversity	36,163	34,116	2,047	
51-99	Sub-Total	1,133,225	1,069,080	64,145	
52	Reports				
52-01	Program Audits	26,500	25,000	1,500	
52-02	Steering Committee Meetings	26,447	24,950	1,497	
52-99	Sub-Total	52,947	49,950	2,997	0
59	COMPONENT TOTAL	1,186,172	1,119,030	67,142	0
99	GRAND TOTAL	15,114,000	14,258,491	855,509	886

BL	DESCRIPTION	2001	p/m	AOS	2002	p/m	AOS	2003	p/m	AOS
			p/m			p/m			p/m	
10	PROJECT PERSONNEL									

BL	DESCRIPTION	2001		AOS	2002		AOS	2003		AOS
			p/m			p/m			p/m	
11	International Experts									
11-01	Chief Technical Advisor	175000	12	10500	150000	12	9000	150000	12	9000
11-02	International Consultant(LME Expert)	60000	4	3600	60000	4	3600	60000	4	3600
11-03	International Consultant(Resources)	80000	8	4800	80000	8	4800	80000	8	4800
11-04	International Consultant(Oceanography)	50000	5	3000	40000	4	2400	40000	4	2400
11-05	International Consultant(Ecosystem)	5000	0.5	300	5000	0.5	300			0
<u>11-99</u>	<u>Sub-Total</u>	<u>370,000</u>		<u>22200</u>	<u>335,000</u>		<u>20,100</u>	<u>330,000</u>		<u>19800</u>
13	Administrative Support									
13-01	PCU Administrator	30000	12	1800	30000	12	1800	30000	12	1800
13-02	PCU Secretary	15000	12	900	15000	12	900	15000	12	900
13-03	Activity Center Directors	96000	36	5760	96000	36	5760	96000	36	5760
13-04	National Secretaries	36000	36	2160	36000	36	2160	36000	36	2160
<u>13-99</u>	<u>Sub-Total</u>	<u>177,000</u>		<u>10,620</u>	<u>177,000</u>		<u>10,620</u>	<u>177,000</u>		<u>10620</u>
15	Monitoring and Evaluation/TPRs									
15-01	Duty Travel	18,000		1080	18,000		1080	63,000		3780
<u>15-99</u>	<u>Sub-Total</u>	<u>18,000</u>		<u>1,080</u>	<u>18,000</u>	<u>0</u>	<u>1,080</u>	<u>63,000</u>	<u>0</u>	<u>3,780</u>
16	Mission Costs/Travel									
16-01	Mission Costs /PCU	30000		1800	30000		1800	30000		1800
16-02	Mission Costs /Activity Costs	30000		1800	30000		1800	30000		1800
16-03	Mission Costs /Living Resources Asst.	60000		3600	100000		6000	60000		3600
16-04	Mission Costs /Mining/Drilling Impacts	20000		1200	30000		1800	10000		600
16-05	Mission Costs /Mariculture	15000		900	15000		900	10000		600
16-06	Mission Costs /Vulnerable Species Asst.	10000		600	10000		600	10000		600
16-07	Mission Costs Non-harvested Species Asst.	5000		300	5000		300	20000		1200
16-08	Mission Costs /Environment(Variability/Predictability)	60000		3600	80000		4800	60000		3600
16-09	Mission Costs /Environment(Capacity Building)	12000		720	12000		720	12000		720
16-10	Mission Costs /HABs	6000		360	6000		360	4000		240
16-11	Mission Costs /Water Quality	32000		1920	32000		1920	32000		1920
16-12	Mission Costs /Major Oil Spill	4000		240	4000		240	2000		120
16-13	Mission Costs /Habitat Destruction/Reserves	10000		600	10000		600	15000		900
16-14	Mission Costs /Biodiversities	10000		600	15000		900	10000		600
<u>16-99</u>	<u>Sub-Total</u>	<u>304,000</u>	<u>0</u>	<u>18,240</u>	<u>379,000</u>	<u>0</u>	<u>22,740</u>	<u>305,000</u>	<u>0</u>	<u>18,300</u>
17	National Consultants									
17-01	Consultant(Living Resources)	50000	20	3000	30000	12	1800	30000	12	1800
17-02	Consultant (Mining/Drilling Impacts)	11000	4	660	10000	4	600	10000	4	600
17-03	Consultant (Mariculture)	10000	4	600	5000	2	300	5000	2	300

BL	DESCRIPTION	2001		AOS	2002		AOS	2003		AOS
			p/m			p/m			p/m	
17-04	Consultant (Vulnerable Habitats)	11000	4	660	10000	4	600	10000	4	600
17-05	Consultant (Non-harvested Species)	8500	3	510	10000	4	600	7500	3	450
17-06	Consultant (Environment/Predictability)	25000	10	1500	20000	8	1200	20000	8	1200
17-07	Consultant (HABs)	12500	5	750	12500	5	750	5000	2	300
17-08	Consultant (Water Quality)	25000	10	1500	30000	12	1800	25000	10	1500
17-09	Consultant (Habitat Expert)	12500	5	750	12500	5	750	12500	5	750
17-10	Consultant (Biodiversity)	9000	3	540	10000	4	600	7500	3	450
17-99	Sub-Total	174,500		10,470	150,000		9,000	132,500		7,950
19	COMPONENT TOTAL	1,043,500		62,610	1,059,000		63,540	1,007,500		60,450
20	CONTRACTS									
20-01	Living Resources	400000		24000	445000		26700	400000		24000
20-02	Mining/Drilling Impacts	50000		3000	60000		3600	50000		3000
20-03	Mariculture	50000		3000	50000		3000	30000		1800
20-04	Vulnerable Habitats	50000		3000	50000		3000	50000		3000
20-05	Non-harvested Species	50000		3000	50000		3000	170000		10200
20-06	Environment(Variability/Predictability)	250000		15000	355000		21300	350000		21000
20-07	Environment(Capacity Building)	8000		480	8000		480	8000		480
20-08	HABs	50000		3000	50000		3000	20000		1200
20-09	Water Quality	50000		3000	50000		3000	185000		11100
20-10	Major Oil Spills	10000		600	10000		600	10000		600
20-11	Habitat Destruction/Reversal	60000		3600	60000		3600	60000		3600
20-12	Biodiversity	25000		1500	45000		2700	25000		1500
20-99	Sub-Total	1,053,000	0	63,180	1,233,000	0	73,980	1,358,000	0	81,480
29	COMPONENT TOTAL	1,053,000		63,180	1,233,000		73,980	1,358,000		81,480
30	Training									
32-01	Workshops	43558		2613.48	43558		2613.48	43538		2612.28
32-02	In-Services	40747		2444.82	40747		2444.82	40747		2444.82
32-03	Study Tours	32000		1920	32000		1920	32000		1920
32-04	Formal Study	32000		1920	32000		1920	32000		1920
32-99	Sub-Total	148,305		8898.3	148,305		8,898	148,285		8,897
39	COMPONENT TOTAL	148,305		8,898	148,305		8,898	148,285		8,897
45	EQUIPMENT									
45-01	Living resource Specialist Instruments	120000		7200	200000		12000	0		0
45-02	Mining/Drilling Assessment (Asst.) Equipment	50000		3000	50000		3000	0		0
45-03	Vulnerable Species Asst. Equipment	5000		300	5000		300	20000		1200
45-04	Non-harvested Species Asst. Equipment	20000		1200	20000		1200	100000		6000
45-05	Environment Monitoring Equipment	300000		18000	300000		18000	400000		24000
45-06	Water Quality Equipment	20,000		1200	40,000		2400	20,000		1200
45-07	Computers (PCU)	15,000		900	5,000		300	5,000		300

BL	DESCRIPTION	2001		AOS	2002		AOS	2003		AOS
			p/m			p/m			p/m	
45-08	Computers (Activity Center)	22,500		1350	7,500		450	7,500		450
45-09	Vehicle (CTA) x 1	30,000		1800	3,000		180	3,000		180
45-10	Vehicles (Activity Center) x 3	75,000		4500	6,000		360	6,000		360
45-11	Operating Costs (PCU)	30,000		1800	30,000		1800	30,000		1800
45-12	Office Furniture (PCU)	5,000		300	1,000		60	1,000		60
45-99	Sub-Total	692,500		41,550	667,500		40,050	592,500		35,550
49	COMPONENT TOTAL	692,500		41,550	667,500		40,050	592,500		35,550
50	MISCELLANEOUS									
51	Sundries									
51-01	PCU	15000		900	15000		900	15000		900
52-02	Activity Center Directors	15000		900	15000		900	15000		900
51-03	Administrative/Secretarial Contract Support	8,424		505.44	7,385		443.1	7,385		443.1
51-04	Support Services (Activity Center)	20000		1200	20000		1200	20000		1200
51-05	Living Resources Asst.	60000		3600	40000		2400	40000		2400
51-06	Mining/Drilling Impacts	8000		480	8000		480	8000		480
51-07	Mariculture	2000		120	2000		120	2000		120
51-08	Vulnerable Species Asst.	4000		240	4000		240	4000		240
51-09	Non-harvested Species Asst.	10000		600	10000		600	10000		600
51-10	Environment(Variability/Predictability)	50000		3000	95000		5700	50000		3000
51-11	HABs	6000		360	6000		360	6000		360
51-12	Water Quality	10000		600	10000		600	10000		600
51-13	Habitat Destruction/Reversal	5000		300	5000		300	15000		900
51-14	Biodiversity	6000		360	6000		360	8000		480
51-99	Sub-Total	213,424		13,165	243,385		14,603	210,385		12,623
52	Reports									
52-01	Program Audits	5,000		300	5,000		300	5,000		300
52-02	Steering Committee Meetings	5,000		300	5,000		300	5,000		300
52-99	Sub-Total	10,000	0	600	10,000	0	600	10,000	0	600
59	COMPONENT TOTAL	223,424	0	13,765	253,385	0	15,203	220,385	0	13,223
99	GRAND TOTAL	3,160,729		190,004	3,361,190		201,671	3,326,670		199,600

BL	DESCRIPTION	2004		AOS	2005		AOS
			p/m			p/m	
10	PROJECT PERSONNEL						
11	International Experts						
11-01	Chief Technical Advisor	110000	12	6600	85000	12	5100
11-02	International Consultant(LME Expert)			0			0

BL	DESCRIPTION	2004		AOS	2005		AOS
11-03	International Consultant(Resources)	80000	8	4800	80000	8	4800
11-04	International Consultant(Oceanography)	20000	2	1200	20000	2	1200
11-05	International Consultant(Ecosystem)			0			0
<u>11-99</u>	<u>Sub-Total</u>	<u>210,000</u>		<u>12600</u>	<u>185,000</u>		<u>11,100</u>
13	Administrative Support						
13-01	PCU Administrator	30000	12	1800	30000	12	1800
13-02	PCU Secretary	15000	12	900	15000	12	900
13-03	Activity Center Directors	96000	36	5760	96000	36	5760
13-04	National Secretaries	36000	36	2160	36000	36	2160
<u>13-99</u>	<u>Sub-Total</u>	<u>177,000</u>		<u>10,620</u>	<u>177,000</u>		<u>10,620</u>
15	Monitoring and Evaluation/TPRs						
15-01	Duty Travel	18,000		1080	68,000		4080
<u>15-99</u>	<u>Sub-Total</u>	<u>18,000</u>	<u>0</u>	<u>1,080</u>	<u>68,000</u>	<u>0</u>	<u>4,080</u>
16	Mission Costs/Travel						
16-01	Mission Costs /PCU	15000		900	10000		600
16-02	Mission Costs /Activity Costs	30000		1800	30000		1800
16-03	Mission Costs /Living Resources Asst.	60000		3600	60000		3600
16-04	Mission Costs /Mining/Drilling Impacts	10000		600	10000		600
16-05	Mission Costs /Mariculture	5000		300	5000		300
16-06	Mission Costs /Vulnerable Species Asst.	10000		600	10000		600
16-07	Mission Costs Non-harvested Species Asst.	10000		600	10000		600
16-08	Mission Costs /Environment(Variability/Predictability)	60000		3600	60000		3600
16-09	Mission Costs /Environment(Capacity Building)	12000		720	12000		720
16-10	Mission Costs /HABs	2000		120	2000		120
16-11	Mission Costs /Water Quality	32000		1920	32000		1920
16-12	Mission Costs /Major Oil Spill			0			0
16-13	Mission Costs /Habitat Destruction/Reserves	10000		600	10000		600
16-14	Mission Costs /Biodiversities	10000		600	10000		600
<u>16-99</u>	<u>Sub-Total</u>	<u>266,000</u>	<u>0</u>	<u>15,960</u>	<u>261,000</u>	<u>0</u>	<u>15,660</u>
17	National Consultants						
17-01	Consultant(Living Resources)	30000	12	1800	30000	12	1800
17-02	Consultant (Mining/Drilling Impacts)	10000	4	600	10000	4	600
17-03	Consultant (Mariculture)	5000	2	300	5000	2	300
17-04	Consultant (Vulnerable Habitats)	10000	4	600	10000	4	600
17-05	Consultant (Non-harvested Species)	7500	3	450	7500	3	450
17-06	Consultant (Environment/Predictability)	20000	8	1200	15000	6	900
17-07	Consultant (HABs)			0			0

BL	DESCRIPTION	2004		AOS	2005		AOS
17-08	Consultant (Water Quality)	20000	8	1200	20000	8	1200
17-09	Consultant (Habitat Expert)	12500	5	750	10000	4	600
17-10	Consultant (Biodiversity)	7500	3	450	7500	3	450
17-99	Sub-Total	122,500		7,350	115,000		6,900
19	COMPONENT TOTAL	793,500		47,610	806,000		48,360
20	CONTRACTS						
20-01	Living Resources	400000		24000	400000		24000
20-02	Mining/Drilling Impacts	50000		3000	50000		3000
20-03	Mariculture	30000		1800	20000		1200
20-04	Vulnerable Habitats	50000		3000	50000		3000
20-05	Non-harvested Species	100000		6000	100000		6000
20-06	Environment(Variability/Predictability)	200000		12000	200000		12000
20-07	Environment(Capacity Building)	8000		480	8000		480
20-08	HABs			0			0
20-09	Water Quality	50000		3000	50000		3000
20-10	Major Oil Spills			0			0
20-11	Habitat Destruction/Reversal	20000		1200	20000		1200
20-12	Biodiversity	25000		1500	25000		1500
20-99	Sub-Total	933,000	0	55,980	923,000	0	55,380
29	COMPONENT TOTAL	933,000		55,980	923,000		55,380
30	Training						
32-01	Workshops	43538		2612.28	43534		2612.04
32-02	In-Services	40747		2444.82	40747		2444.82
32-03	Study Tours	32000		1920	32000		1920
32-04	Formal Study	32000		1920	32000		1920
32-99	Sub-Total	148,285		8,897	148,281		8,897
39	COMPONENT TOTAL	148,285		8,897	148,281		8,897
45	EQUIPMENT						
45-01	Living resource Specialist Instruments			0			0
45-02	Mining/Drilling Assessment (Asst.) Equipment			0			0
45-03	Vulnerable Species Asst. Equipment	10000		600	10000		600
45-04	Non-harvested Species Asst. Equipment	30000		1800	30000		1800
45-05	Environment Monitoring Equipment	20000		1200			0
45-06	Water Quality Equipment	10,000		600	10,000		600
45-07	Computers (PCU)	5,000		300	5,000		300
45-08	Computers (Activity Center)	24,000		1440	24,000		1440
45-09	Vehicle (CTA) x 1	5,000		300	3,000		180

BL	DESCRIPTION	2004		AOS	2005		AOS
45-10	Vehicles (Activity Center) x 3	9,000		540	9,000		540
45-11	Operating Costs (PCU)	20,000		1200	10,000		600
45-12	Office Furniture (PCU)	1,000		60	1,000		60
45-99	<u>Sub-Total</u>	<u>134,000</u>		<u>8,040</u>	<u>102,000</u>		<u>6,120</u>
49	<u>COMPONENT TOTAL</u>	<u>134,000</u>		<u>8,040</u>	<u>102,000</u>		<u>6,120</u>
50	MISCELLANEOUS						
51	Sundries						
51-01	PCU	10000		600	7000		420
52-02	Activity Center Directors	15000		900	15000		900
51-03	Administrative/Secretarial Contract Support	7,385		443.1	7,385		443.1
51-04	Support Services (Activity Center)	20000		1200	20000		1200
51-05	Living Resources Asst.	40000		2400	40000		2400
51-06	Mining/Drilling Impacts	8000		480	8000		480
51-07	Mariculture	2000		120	2000		120
51-08	Vulnerable Species Asst.	4000		240	4000		240
51-09	Non-harvested Species Asst.	10000		600	10000		600
51-10	Environment(Variability/Predictability)	50000		3000	50000		3000
51-11	HABs	6000		360	6000		360
51-12	Water Quality	10000		600	10000		600
51-13	Habitat Destruction/Reversal	10000		600	10000		600
51-14	Biodiversity	8116		486.96	6000		360
51-99	<u>Sub-Total</u>	<u>200,501</u>		<u>12,030</u>	<u>195,385</u>		<u>11,723</u>
52	Reports						
52-01	Program Audits	5,000		300	5,000		300
52-02	Steering Committee Meetings	5,000		300	4,950		297
52-99	<u>Sub-Total</u>	10,000	0	600	9,950	0	597
59	<u>COMPONENT TOTAL</u>	<u>210,501</u>	0	<u>12,630</u>	<u>205,335</u>	0	<u>12,320</u>
99	GRAND TOTAL	2,219,286		133,157	2,184,616		131,077

Attachment 2
Detailed Project Timeline/Narrative

REF. NO.	DESCRIPTION / ACTIVITY	2001 / 2002												2002 / 2003											
		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
10	PROJECT PERSONNEL																								
11	International Experts																								
11-01	Chief Technical Advisor																								
11-02	International Consultant (LME Expert)																								
11-03	International Consultant (Resources)																								
11-04	International Consultant (Oceanography)																								
11-05	International Consultant (Ecosystem)																								
13	Administrative Support																								
13-01	PCU Administrator																								
13-02	PCU Secretary																								
13-03	National Managers																								
13-04	National Secretaries																								
15	M&E/TPR's/PSC Meetings																								
15-01	Duty Travel																								
16	Mission Costs/Travel																								
16-01	Mission Costs/PCU																								
16-02	Mission Costs/Activity Centre Costs																								
16-03	Mission Costs/Living Resources Asst.																								
16-04	Mission Costs/Mining/Drilling Impacts																								
16-05	Mission Costs/Mariculture																								
16-06	Mission Costs/Vulnerable Species Asst.																								
16-07	Mission Costs/Non-harvested Species Asst.																								
16-08	Mission Costs/Environment (Variability/Predictability)																								
16-09	Mission Costs/Environment (Capacity Building)																								
16-10	Mission Costs/HABs																								
16-11	Mission Costs/Water Quality																								
16-12	Mission Costs/Major Oil Spill																								
16-13	Mission Costs/Habitat Destruction/Reserves																								
16-14	Mission Costs/Biodiversities																								
17	National Consultants																								
17-01	Consultant (Living Resources)																								
17-02	Consultant (Mining/Drilling Impacts)																								

REF. NO.	DESCRIPTION / ACTIVITY	2001 / 2002												2002 / 2003											
		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
17-03	Consultant (Mariculture)																								
17-04	Consultant (Vulnerable Habitats)																								
17-05	Consultant (Non-harvested Species)																								
17-06	Consultant (Environment/Predictability)																								
17-07	Consultant (HABs)																								
17-08	Consultant (Water Quality)																								
17-09	Consultant (Habitat Expert)																								
17-10	Consultant (Biodiversity)																								
20	CONTRACTS																								
21	Living Resources																								
22	Mining/Drilling Impacts																								
23	Mariculture																								
24	Vulnerable Habitats																								
25	Non-harvested Species																								
26	Environment (Variability/Predictability)																								
27	Environment (Capacity Building)																								
28	HABs																								
29	Water Quality																								
30	Major Oil Spills																								
31	Habitat Destruction/Reversal																								
32	Biodiversity																								
34	TRAINING																								
34-01	Workshops																								
34-02	In-Services																								
34-03	Study Tours																								
34-04	Formal Study																								
45	EQUIPMENT																								
45-01	Living Resource Specialist Instruments																								
45-02	Mining/Drilling Assessment (Asst.) Equipment																								
45-03	Vulnerable Species Asst. Equipment																								
45-04	Non-harvested Species Asst. Equipment																								
45-05	Environment Monitoring Equipment																								
45-06	Water Quality Equipment																								

REF. NO.	DESCRIPTION / ACTIVITY	2001 / 2002												2002 / 2003											
		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
45-07	Computers (PCU)																								
45-08	Computers (Activity Centre)																								
45-09	Vehicle (CTA) X1																								
45-10	Vehicles (Activity Centre)X3																								
45-11	Operating Costs (PCU)																								
45-12	Office Furniture (PCU)																								
50	MISCELLANEOUS																								
51	Sundries (PCU)																								
51-01	Sundries (Activity Centre)																								
51-02	Support Services (Activity Centre)																								
51-03	Living Resources Asst.																								
51-04	Mining/Drilling Impacts																								
51-05	Mariculture																								
51-06	Vulnerable Species Asst.																								
51-07	Non-harvested Species Asst.																								
51-08	Environment (VariabilityPredictability)																								
51-09	HABs																								
51-10	Water Quality																								
51-11	Habitat Destruction/Reversal																								
51-12	Biodiversity																								

REF. NO.	2003 / 2004												2004 / 2005												2005 / 2006											
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
10																																				
11																																				
11-01																																				
11-02																																				
11-03																																				

REF. NO.	2003 / 2004	2004 / 2005	2005 / 2006
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REF. NO.	2003 / 2004	2004 / 2005	2005 / 2006
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Narrative re. the BCLME Timeline

The accompanying timeline has been structured to reflect the timing and duration of actions and activities specified in the BCLME five-year budget. Rather than adhere to calendar years, the timeline commences with the appointment of the CTA (most likely to be 1 April 2001) and then runs for a further 60 months, with breaks shown at intervals of 12 months. (In essence, the intervals correspond to the government financial years in the participating countries). The precise commencement and duration of some of the activities (e.g. consultants) will remain uncertain until such time as the CTA takes up his/her position, that the PSC is appointed and the IBCC starts to function. Nevertheless, the timeline does show the probable distribution of effort and programme actions/activities. Some activities are intermittent and span the full period of the GEF intervention phase, and these are shown as a lighter grey shading.

A suite of comprehensive timeline charts will be completed jointly by the CTA and the international and national consultants, together with the PSC, once the BCLME Programme has commenced. These will provide comprehensive project planning matrices in the form required for proper management (and accountability) of the individual activities. (For example, within the environment variability component alone there are likely to be somewhere between 50 and 100 separate actions which will need to be specified and time managed. It is expected that other components will require a similar approach).

Attachment 3

Monitoring and Evaluation Details

As a result of the emphasis placed on results-based management, it has become mandatory for all GEF projects to develop a detailed Monitoring & Evaluation workplan at the inception of the activities. For purposes of this project, the monitoring and evaluation overall plan will begin with the development of IW critical indicators as described in paragraph 71. of this document. Unique among IW projects, this project has already undergone an exercise in M&E that was undertaken in December of the year 2000. This M&E exercise was unique as it was conducted prior to implementation of the full project. The results of the evaluation appear in this document as Attachment 4. The M&E workplan will allow for a critical assessment of project performance by showing the schedule of the activities, their cost and the expected outputs and achievements according to the established benchmarks and milestones. The workplan will be the main tool for monitoring and evaluating the progress of the project.

While distinct, Monitoring and Evaluation are yet “interactive and mutually supportive” activities.

Monitoring is a continuous process of collecting and analyzing information to measure the progress of a project toward expected results. Monitoring provides managers and participants with regular feedback that can help determine whether a project is progressing as planned.

Evaluations are periodic assessments of project performance and impact. Evaluations also document what lessons are being learned from experience.

Generally, individuals involved in managing a project are charged with monitoring. By contrast, individuals independent of project operations conduct evaluations.

Reporting is the systematic and timely provision of essential information. It is an integral part of the monitoring and evaluation function.

Monitoring, reporting and evaluation are management functions which could also be described as observing project progress (monitoring), documenting the observed information (reporting) and assessing on the basis of the above (evaluating).

Monitoring and systematic reporting must be undertaken for all regular and medium-size projects regardless of duration and budget. A chart describing standard M&E practices, timing of activities, and responsibilities for those activities follows.

Standard M&E Activities, Timeframes, and Responsibilities⁵

ACTIVITY	RESPONSIBILITIES	TIMEFRAMES
1. Drafting Project Planning Documents: Prodoc, Logframe (including indicators)	Project proponent , together with UNDP/GEF staff, project development specialists and other stakeholders	During project design stage
2. M&E Plan	Project proponent , together with UNDP/GEF staff, project development specialists and other stakeholders	During project design stage
3. Inception Report	Project Implementation Team	At the beginning of project implementation
4. Work Plan	Project Implementation Team	Annually
5. Annual Programme/ Project Report (APR)	The Governments, UNDP Country Office , Executing Agency, Project Team, UNDP/GEF Task Manager ⁶ , and Target Groups	Annually
6. Tripartite Review (TPR)	The Governments, UNDP Country Office , Executing Agency, Project Team, UNDP/GEF Task Manager, and Target Groups	Annually
7. Tripartite Review Report	UNDP Country Office	Annually, immediately following TPR
8. Project Implementation Review (PIR)	UNDP Country Office , UNDP/GEF headquarters, Project Team, GEF's M&E team, UNDP/GEF Task Manager	Annually, between June and September
9. Mid-term, Final and Ex-post evaluations	Project team, UNDP/GEF headquarters , UNDP/GEF Task Manager, UNDP Country Office	At the mid-point and end of project implementation; Ex-post, about two years after project completion
10. Terminal Report	UNDP Country Office , UNDP/GEF Task Manager, Project Team	At least one month before the end of the project
11. Audit	Executing Agency , UNDP Country Office, Project Team	At least once in the life of the project (see section on audit)

⁵ The unit in bold has the lead responsibility.

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⁶ *UNDP/GEF Task Managers* is a broad term that includes regional advisors, sub-regional coordinators, and GEF project in the region or in HQ.

Attachment 4

Monitoring and Evaluation Results BCLME GEF Project December, 2000

Site Visit Report of GEF M & E Mission To Benguela Current International Waters Project

Christophe Crepin and Alfred M. Duda

Summary

Significance-The Benguela Current is one of the 50 large marine ecosystems (LMEs) identified around the globe that hug the continental shelves and that account for about 94% of ocean fisheries that are harvested. It is a highly fluctuating upwelling area (linked to the global climate) that is the second most productive ocean fishery according to some accounts and has important biodiversity in terms of birds, seals, and penguins depending on the fishery as well. The fishery was overexploited in recent colonial times and has not yet recovered sufficiently, and it suffers from periodic conditions of oxygen depletion and toxic algal blooms that seem to be worsening with changing climatic conditions. Hence the need to establish a joint management regime for the LME so that one or several of the countries do not overexploit the fisheries and degrade the biodiversity during changing climatic regimes. Oil/gas extraction and diamond mining also stress the living resources. The Benguela covers portions of the Angola, South Africa, and the entire Namibia coastline out to the limit of their Exclusive Economic Zones.

Strategic Results Achieved Quickly-In accordance with the Programs Study, the BCLME project was chosen for review under the cohort of IW projects in which one GEF IA assisted the countries with initial strategic work under the Operational Strategy. While the Project Document had just been completed and the project was not yet under implementation during the mission, the decision to undertake a visit was made based on the successful completion during the Block B preparation of processes recommended in the Operational Strategy for producing a Transboundary Analysis (sometimes called a transboundary diagnostic analysis-TDA) and a Strategic Action Programme(SAP). No other projects in OP 8 have accomplished this effort during preparation or so quickly. While several projects in OP 9 have produced SAPs during Block B preparation, they were for preventive actions associated with OP 9 rather than the complex situations characteristic of OP 8.

Processes Undertaken-The preparation process resulted in completion of a SAP/TDA (signed by several Ministers from each of the three nations) only 17 months after the initial workshop for stakeholders in August 1998. During the course of preparation, four Management Committee Meetings were held with an average of 3 participants from Angola, 5 from Namibia, and 4 from S. Africa, including an average of 6 others in attendance from IAs and other institutions. Two well attended workshops (97 for the first and 43 for the more focused second) were held nine months apart to conduct the consultation processes necessary to undertake the strategic work, and small groups collaborated during the interim to polish the strategic products (TDA and SAP). The project brief that Council approved contains the TDA (establishing several top priorities for activity among all the different environmental and transboundary concerns), the SAP(signed by several sectoral ministers from each of the three countries detailing joint commitments), and a list of country-specific policy/legal/ institutional reforms the Ministers pledge to implement in each country during the project that address the few priorities and are responsive to the SAP.

GEF IW M & E Indicators-These country-specific commitments are quite important M & E process indicators for GEF in the international waters focal area. The ministerial signatures on the TDA/SAP and the country-specific actions represent sufficient evidence that a shared political commitment, some might say a shared vision, has been achieved that minimizes risk for the full project that supports agreed incremental costs of SAP implementation. In

addition, the completion of a TDA that establishes just a few transboundary priorities from the many environmental issues, the adoption of the SAP outlining regional actions all countries buy into and of country-specific actions, and the inter-ministerial collaboration in each nation as evidenced by several ministries serving on the Management Group and signing the SAP are all important regional GEF IW process indicators.

Next to the Danube, this is the most complete package of successfully accomplished strategic work as called for by the GEF Operational Strategy. While the SAP package does not contain as many specific milestones and targets as the Mediterranean's SAP for land-based pollution, they both have a number of commitments for the near-term, five year timeframe. The Mediterranean has the advantage of having many more specific targets for the moderate (10 year) and long-term (25 year) timeframes which have resulted from two decades of joint institutional cooperation under the Barcelona Convention. The Benguela initiative, after only 17 months, did pretty well in focusing on just a few key priorities per the Operational Strategy consistent with OP 8. Completion of this strategic work under the Operational Strategy can be considered the IW equivalent of “enabling activities” that GEF funds in the climate change and biodiversity focal areas.

Key Elements—Several key elements seemed to have characterized the preparation process spearheaded by UNDP as mentioned by the twenty some staff that the reviewers spoke with from the 3 nations. First, there was a shared ecosystem with significant commercial value that all 3 countries recognized. A science program (BENEFIT) was created prior to BCLME with donors that linked the science community together in the 3 countries, sponsored joint sampling cruises and training activities so that the individuals could get to know each other and begin to develop trust among each other. Several individuals originally associated with the science community proposed during the establishment of BENEFIT that a management-related multicountry program was also needed to translate the information provided by science into the sectoral actions of each country. GEF preparation funding was utilized to develop this management approach and it was driven by support from the science community, support from UNDP in Namibia, and a strong CTA accepted by all three countries who kept the processes going during Block B preparation.

Additionally, a management committee with inter-ministerial participation from each country (fisheries, environment, oil/gas/mining) ensured cross-sectoral dialogue and buy-in during preparation. A strong outside facilitator utilized participative processes popularized by GTZ during both well-attended priority setting workshops with a wide range of attendees to develop a true bottom-up consensus on elements of the TDA and then SAP that could overcome the loudly expressed opinions of a few people; this resulted in widespread, inter-ministerial and stakeholder buy-in. Finally, and probably most importantly, two consultants with UNDP who knew the IW focal area processes and who had been involved with other IW projects that led to a TDA and then a SAP provided the group meetings with correct information about what the TDA and SAP processes were about and enforced the view toward needed policy/legal/institutional reforms as management measures rather than more collection of science information as the focus of GEF-eligible interventions. As in most IW projects, continuity with well-informed ambassadors familiar with GEF IW and strong leadership (the CTA) were crucial to successful completion of the processes, which most interviewees found indispensable in establishing the priority setting and broad-based inter-ministerial buy-in for the needed reforms in the SAP.

Bottom Line-While the project is not yet under implementation, preparation with the assistance of one GEF IA (UNDP) went well with timely completion of strategic work recommended by the GEF Operational Strategy in the IW focal area for OP 8 projects. In this case, policy/legal/institutional reforms and capacity building to implement them seem to be the key interventions needed to address the transboundary issues. Since assisting with these are part of UNDP's comparative advantage in the GEF, not having the other IAs involved was no shortcoming and linkages are being formed with other IA projects being proposed for GEF support in the area. If investments requiring governments to utilize lending mechanisms were an important part of the solution, then perhaps multiple IA involvement would have been beneficial as for the Danube and Black Sea cases. The attention of STAP is drawn to the role of the local science community in completion of the necessary strategic work. The project also has several minor components that can help address the other stresses on the transboundary water environment in a modest way. Of note is the biodiversity component that provides funding to link with future coastal zone biodiversity projects. Such explicit linkage components are also needed in the biodiversity coastal projects to ensure coordination and collaboration.

1. Specification of Project Visited (Title, Executing Agency name);

Regional (Angola, Namibia, South Africa): Implementation of the Strategic Action Programme Toward Achievement of the Integrated Management of the Benguela Current Large Marine Ecosystem; UNDP-UNOPS

2. Status of the Project Visited (PDF, FP, Date of Commencement, Date of Completion);

PDF B Completed; Project Brief Approved by GEF Council, Project Document Nearing Completion

3. Dates of Visit and Location(s);

November 27 to December 5, 2000; Swakopmund and Windhoek, Namibia and Capetown, South Africa;

4. Names of members of the Visiting Team;

Christophe Crepin, World Bank and Alfred M. Duda, GEF Secretariat

5. Names of individuals and organizations visited/consulted/interviewed;

Please see List of Persons Consulted in Attachment I

6. Brief summaries of individual meetings between visitors and project principals/organizations;

Meetings were held mostly on an individual basis. Exceptions were with UNDP staff in Windhoek, with several fisheries staff in Swakopmund, with the Permanent Secretary and her staff in Windhoek, and with Marine and Coastal Fisheries staff in Capetown. In addition, a substantive meeting was held in Budapest at the GEF Biennial International Waters Conference in October with the 3 BCLME National Coordinators. Results of the interviews are integrated into the different sections of this trip report.

7. Overview of conclusions drawn:

7.1 Does the GEF Project represent an appropriate response to regional and other intergovernmental priorities relating to international waters? If there are limitations, what are they?

Although not originally intended, the project turned out to be a collective response to many different transboundary stresses which involve international, intergovernmental processes that have established commitments on behalf of countries or that may do so once they mature into more specific conventions. In fact, the agreed SAP highlights MARPOL 73/78, the UN Agreement on Straddling and Highly Migratory Fish Stocks, the FAO Conduct for Responsible Fishing, the UNFCCC, the CBD, UNCLOS, the GPA for the Protection of the Marine Environment from Land-based Activities, the Abidjan Convention, and the developing S. Atlantic Fisheries Convention. In terms of transboundary priority issues, the highly variable fisheries that fluctuate with climatic changes, the biodiversity implications of these fisheries, and GPA implications related to mining activities are all key driving forces. In essence, this IW project represents the establishment of a joint, transboundary institution and the institutional linkages to national sectoral institutions (as an international body in terms of the UN Convention on the Law of the Sea) that are needed by the three nations to sustainably manage this highly variable, shared resource as a collective response to inevitable climatic fluctuations, biodiversity priorities, habitat alteration and pollution loading. One potential limitation may be coordination with SEAFC, but the convention is not yet signed and the

interim Benguela Current Commission is not yet established (Prodoc soon to be submitted for GEF CEO endorsement).

7.2 Do the existing descriptions or specifications of OP 8, 9 and 10 permit the development and submission of projects, including pilot stage activities that address regional and other intergovernmental priority issues? If there are deficiencies or significant limitations, what are they?

Most of the proponents/stakeholders outside implementing agencies are, most of the time, not fully aware of GEF OPs contents and therefore not able to comment much on them. Interviewees indicated that once they understood the OP and what GEF's strategy was, it made sense. The OPs seem fine but there is a need for the countries' stakeholders, at least during first phase of project preparation, to go through a learning curve with respect to what is the true strategic objectives of the OPs, what is and what is not GEF eligible and how the GEF support should connect with/ catalyze other activities. More specifically, it was felt that operational guidance/ lessons learned note on TDA/SAP would greatly help proponents at the local level and save time and transactions costs.

7.3 Does the existing IW Project addressing priorities within a given geographical region have appropriate communication and connection (including collaboration) with other projects in the area, both other IW projects and those of other agencies interested in international waters issues? If there are deficiencies, what are they?

Very much so here with the BCLME project, in particular with reference to BENEFIT. The BENEFIT program (BENguela Environment, Fisheries, Information and Training programme) was initially conceived at the same 1995 meeting in Namibia at which the need for a joint ecosystem management program was identified by the 3 nations. BENEFIT moved much more rapidly with German and Norwegian funding and was intended to focus on science/training for the 3 Benguela system countries. However, it may not be clear how the day to day collaboration will occur in the future after the BCLME project begins. Donors to the BENEFIT Program were initially worried by the BCLME initiative, however, communication got better during preparation of the BCLME project. Complementarity between the donor-funded research/science oriented activities (BENEFIT) and the management oriented programme (BCLME) should be strengthened over the course of the implementation of BCLME.

7.4 Are there conflicts or duplications among the GEF Project and those being undertaken by other agencies? If so, what are they and how can they be avoided?

Not only are there no conflicts but a developing GEF OP 2 biodiversity project under preparation by the government of Namibia with World Bank assistance on integrated coastal zone management has utilized strong communication with BENEFIT and the BCLME to ensure that it supports complementary actions. Development of this project should be tracked to document possible best practice in how an IW project in OP 8 can link with a coastal biodiversity project to accomplish coordinated and complementary results. An additional OP 2 coastal project has been identified by South Africa for possible GEF support for the Cape Peninsula area. The World Bank, as it responds to the request, has expressed its intention to involve BCLME and BENEFIT in the preparation process so that complementary actions may result in more complete conservation of the coastal biodiversity. Finally, a UNDP-IMO project that demonstrates alternative management measures to minimize transfer of alien species in ballast water was planned with collaboration of BCLME in mind. In fact, the port selected by South Africa is on the Benguela LME and is located in the largest lagoon(estuarine) system. South Africa had other choices for ports but chose this one because of the sensitivity of the lagoon, the large amount of ballast water, and linkages to BCLME. The project also has several minor components that can help address the other stresses on the transboundary water environment in a modest way. Of note is the biodiversity component which provides funding to link with future coastal zone biodiversity projects. Such explicit linkage components are also needed in the biodiversity coastal projects to ensure coordination and collaboration.

7.5 Has there been adequate use of local scientific expertise in the design or review of the project? Are there any deficiencies in this respect that should be corrected?

The utilization of science expertise in the three countries has been exemplary. In fact, the existence of the BENEFIT network in the 3 countries, the trust that has developed among the collaborators, and the driving force that was provided in each country by the science community is postulated as being a critical factor in the short timeframe for formulation and adoption of the SAP at the ministerial level. One issue to monitor in project implementation should be the role of BENEFIT in serving as a science advisory arm to the Interim Benguela Current Commission. The project brief indicates that this is planned and this feature is of significance to GEF in that similar science bodies have been useful in Europe and North America to the joint waterbody management institutions. Three GEF projects now have such advisory panels, Lake Victoria, the Lake Chad Basin project and the BCLME. Early in preparation, some members of the science community in the countries had envisioned BCLME providing more research and scientific funding for them. During the workshops, this was clarified to underscore the role of BCLME as a management mechanism to translate the scientific information from BENEFIT into joint management institutions and ultimately the sectoral institutions of each nation. Ensuring that management is the focus of BCLME rather than science will be important to establish as implementation begins.

7.6 Was the STAP Roster Review of the project appropriate and useful in refining the project proposal. If not, what were its deficiencies?

The STAP roster review was provided to the Benguela Management Committee and was discussed at length according to the answer we received from country officials when we asked this question. It was reportedly useful for the physical oceanography types as it helped to improve the physical basis for understanding and monitoring the Benguela system, but the reviewer did not have a great deal of experience in dealing with the high frequency variability associated with upwelling systems. These fluctuations have to be separated from the longer term but more powerful variability that actually changes the ecosystem dynamics according to project staff. Consequently, the country officials found the STAP roster review to be limited.

7.7 Would greater STAP involvement in the monitoring of project implementation and performance be useful? If so, what type of additional STAP involvement would be appropriate?

The GEF Secretariat has suggested repeatedly to STAP that a priority in the IW focal area for STAP should be how to encourage, nurture, and mentor science advisory groups to the individual projects. STAP may wish to track the activity of these different science panels in international waters projects and eventually review their acceptance and utility.

7.8 Has local governmental and intergovernmental institution “buy in” been appropriate and successful? Are there any indications of why it was successful, or only partially successful, in the region in question?

Yes, buy in has been appropriate and successful according to everyone interviewed. This was originally built on relationships in the existing BENEFIT science program. Additionally, a management committee with inter-ministerial participation from each country (fisheries, environment, oil/gas/mining) ensured cross-sectoral dialogue and buy-in during Block B preparation. A strong outside facilitator utilized participative processes popularized by GTZ during both well-attended priority setting workshops with a wide range of attendees to develop a true bottom-up consensus on priorities in the TDA and then SAP that could overcome the loudly expressed opinions of a few people and this resulted in widespread stakeholder buy-in. Finally, and probably most importantly, two consultants with UNDP who knew the IW focal area processes and who had been involved with other IW projects that led to a TDA and then a SAP provided the group meetings with correct information about what the TDA and SAP processes were about and enforced the view toward needed policy/legal/institutional reforms as management measures rather than more collection of science information as the focus of GEF-eligible interventions. As in most IW projects, continuity with well-informed ambassadors familiar with GEF IW and strong leadership (the CTA) were crucial to successful completion of the processes, which most interviewees found indispensable in establishing the priority setting and broad-based inter-ministerial buy-in for the needed country reforms in the SAP.

7.9 What measures of success can be applied to the project under study in respect to:

Process indicators;

Stress reduction indicators; and

Environmental status indicators.

The project is not yet under implementation. Indicators are to be developed as part of project implementation during the first year or so as the countries begin to undertake joint management. However, several important regional process indicators have been achieved. First, a transboundary analysis was jointly produced by the three countries that identified several high priority transboundary issues to be addressed. Second, inter-ministerial participation did occur in each country as part of project preparation. Third, a SAP consisting of regional actions and country actions that need to be taken to address the few priorities was produced participatively and the political commitment of signatures at the ministerial level were successfully obtained for the SAP. Finally, the elements of the SAP and the resulting project brief do contain the commitment to establish a joint management institution as part of the project and through a legal committee of the three nations to produce the legal regime (convention framework) for establishing a sustainable institution for joint management.

7.10 Are there any significant project implementation difficulties that could be resolved at the Implementing Agency level? If so, what are they and how could they be resolved?

There are no implementation difficulties. Two issues may be worthy of note, one of them is resolved and the other will be the subject of attention during implementation. The one that seems to be resolved is the time gap or delay that existed between approval of the project brief in February 2000 and completion of the Project Document (Prodoc) in early December. UNDP Namibia has been responsible for the project; personnel changes at the UNDP office resulted in a decision not to renew the Regional Coordinator to complete the Prodoc following approval of the brief. The responsibility was given to the Namibian Government and the subsequent long delay resulted. Hopefully, resolution of the delay will be forthcoming with the lesson that continuity in leadership at the CTA level should be assured through to project endorsement by GEF in order to minimize delays. New people and contracts with preferred local staff often can not be expected to expedite complex international waters projects.

The second issue relates to the need to conduct dialogue with subnational levels of government and communities about the project. GEF IW projects should engage 3 levels of institutions: multi-country level, inter-ministerial national level in each country, and the subnational/community level. While stakeholders in the fishing, oil/gas, diamond mining, and shipping industries were involved in preparation, the subnational/community levels were not mobilized. This is not a fatal flaw; in fact, most of those interviewed understood the importance of this next level of outreach and awareness building and this should be pursued in the first year of project implementation.

7.11 To what extent has the project demonstrated, or has the potential to demonstrate, a “catalytic” influence on other activities in the region or on the topic? Are there any pointers to what makes such catalysis successful?

Several key elements of project preparation were important and are repeated here: First, there was a shared ecosystem with significant commercial value that all 3 countries recognized. A science program (BENEFIT) was created prior to BCLME with donors that linked the science community together in the 3 countries, sponsored joint sampling cruises and training activities so that the individuals could get to know each other and begin to develop trust among each other. Several individuals originally associated with the science community proposed during the establishment of BENEFIT that a management-related multi-country program was also needed to translate the information provided by science into the sectoral actions of each country. GEF preparation funding was utilized to develop this management approach and it was driven by support from the science community, support from UNDP in Namibia, and a strong CTA accepted by all three countries who kept the processes going during Block B preparation.

Additionally, a management committee with inter-ministerial participation from each country (fisheries, environment, oil/gas/mining) ensured cross-sectoral dialogue and buy-in during preparation. A strong outside

facilitator utilized German participatory processes (---,ZOPP) during both well-attended priority setting workshops with a wide range of attendees to develop a true bottom-up consensus on elements of the TDA and then SAP that could overcome the loudly expressed opinions of a few people and this resulted in widespread buy-in. Finally, and probably most importantly, two consultants with UNDP who knew the IW focal area processes and who had been involved with other IW projects that led to a TDA and then a SAP provided the group meetings with correct information about what the TDA and SAP processes were about and enforced the view toward needed policy/legal/institutional reforms as management measures rather than more collection of science information as the focus of GEF-eligible interventions. As in most IW projects, continuity with well-informed ambassadors familiar with GEF IW and strong leadership (the CTA) were crucial to successful completion of the processes, which most interviewees found indispensable in establishing the priority setting and broad-based inter-ministerial buy-in for the needed reforms in the SAP.

Bottom Line-While the project is not yet under implementation, preparation with the assistance of one GEF IA (UNDP) went well with timely completion of strategic work as recommended by the GEF Operational Strategy in the IW focal area for OP 8 projects. In this case, policy/legal/institutional reforms and capacity building to implement them seem to be the key interventions needed to address the transboundary issues. Since assisting with these are part of UNDP's comparative advantage in the GEF, not having the other IAs involved was no shortcoming and linkages are being formed with other IA projects being proposed for GEF support in the area. If investments requiring governments to utilize lending mechanisms were an important part of the solution, then perhaps multiple IA involvement would have been beneficial as for the Danube and Black Sea cases. One unknown is the extent to which fishing fleet overcapacity is a threat to sustaining the fisheries. The TDA does not address this point. If the reforms are not sufficient to sustain the fisheries and fleet overcapacity is an issue, perhaps a lending institution was necessary.

List of Personnel Interviewed:

Angola

Ms. Maria de Lourdes Sardinha, National Coordinator, BCLME, Ministry of Fisheries and Environment, Luanda, Angola

Namibia

Mrs. Nangula Mbako, Permanent Secretary, Ministry of Fisheries and Marine Resources, Windhoek, Namibia

Dr. Hashali Hamukuaya, Deputy Director, MFMR, National Coordinator, BCLME, Windhoek

Dr. Burger Oelofsen, Director, MFMR, Windhoek

Dr. Gabi Schneider, Director, Geological Survey of Namibia, Ministry of Mines and Energy, Windhoek

Dr. Phoebe Barnard, National Coordinator, Biodiversity Programme, Ministry of Environment and Tourism, Windhoek

Dr. Bronwen Currie, Head, Intertidal Section, National Marine Information Center, MFMR, Swakopmund, Namibia

Dr. David Boyer, Chief, Offshore Resources, National Marine Information Center, MFMR, Swakopmund

Dr. Jacqui Badcock, UNDP Resident Representative, Windhoek

Ms. Esther Hoveka, Asst Res Rep, UNDP, Windhoek

Ms. Linda Vanherck, Programme Officer, UNDP, Windhoek

Dr. Charles Hocutt, Exec Officer, BENEFIT Programme, Swakopmund

South Africa

Dr. Monde Mayekiso, Chief Director, Sea Fisheries, Marine and Coastal Management, Dept of Environmental Affairs and Tourism, Capetown, S. Africa

Dr. Niel Malan, Deputy Director, Marine and Coastal Management, Dept of Envir Affairs and Tourism, Capetown

Dr. Larry Hutchins, Chief Specialist Scientist, Sea Fisheries Institute, National Coordinator, BCLME, Min of Envir Affairs and Tourism, Capetown

Dr. Lynn Jackson, Assistant Director, Marine Pollution, Dept of Envir Affairs and Tourism, Capetown

Dr. Denzil Miller, Sr Specialist Scientist, Marine and Coastal Management, Dept of Envir Affairs and Tourism, Capetown

Dr. Grant Pitcher, Sea Fisheries Institute, Marine and Coastal Management, Dept of Envir Affairs and Tourism, Capetown

Dr. Hans Verheye, Sr Specialist Scientist, Marine and Coastal Management, Dept of Envir Affairs and Tourism, Capetown

Mr. Ian McLachlan, Concession Manager, South Africa Petroleum Agency, Capetown

Dr. Vere Shannon, Oceanography Dept., Univ of Capetown, Capetown

Mr. Chris Davis, Technical Advisor to MCM, DFID, Fisheries and Aquatic Resources Group, Capetown

By Telephone or E-Mail

Dr. Mick J. O'Toole, formerly Regional Coordinator and Chief Technical Advisor for Block B Grant for BCLME project, UNDP, Windhoek

Dr. Andrew Hudson, Principal Tech Advisor, International Waters, UNDP, New York

Dr. David LaRoche, Consultant, International Waters, UNDP, New York

Attachment 5

Reporting Requirements and Legal Context

Ongoing project reporting will be provided in accordance with established UNDP procedures and will be provided by the UNDP Country Office with support from UNDP- GEF. Overall supervision of the Project will be the responsibility of the Project Director.

Reporting

The Project support Unit will be responsible for the preparation and submission of the following reports:

- (a) *Inception Report (IR)*

The inception report is to be prepared by the Project CTA with the assistance of the project experts as relevant. The IR will be prepared no later than three months after project start-up and will include a detailed Workplan and Budget for the duration of the project, progress to date on project establishment and start-up activities and any proposed amendments to project activities or approaches. The report will be circulated to all the parties who will be given a period of one calendar month in which to respond with comments or queries. The report will also be reviewed by UNDP - GEF to ensure consistency with the objectives and activities indicated in the Project Document.
- (b) *Annual Programme/Project Report (APR)*

The Annual Project Report (APR) is designed to obtain the independent views of the main stakeholders of a project on its relevance, performance and the likelihood of its success. The APR aims to: a) provide a rating and textual assessment of the progress of a project in achieving its objectives; b) present stakeholders' insights into issues affecting the implementation of a project and their proposals for addressing those issues; and c) serve as a source of inputs to the Tripartite Review (TPR). The main project stakeholders participate in the preparation of the APR.

The APRs will be prepared every six months during the first year of the project, and then annually. The APRs will detail activities undertaken since the last APR, milestones reached, key results and achievements, problems encountered and any other issues that need to be highlighted.
- (c) *Periodic Status Reports*

As and when called for by the Project Director (CTA), the government or UNDP, the Project CTA will prepare Status Reports, focusing on specific issues or areas of activity as stipulated by the querant. The request for a Status Report will be in written form, and will clearly state the issue or activities which need to be reported on. These reports can be used as a form of specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. The parties are requested to minimise their requests for Status Reports, and when such are necessary will allow reasonable timeframes for the preparation of these Reports.
- (d) *Technical Reports*

Technical Reports are detailed documents covering specific areas of analysis or scientific specialisations within the overall project. As part of the Inception Report the Project Director/CTA will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants as Final Reports for their technical inputs, and should be comprehensive, specialised analyses of clearly-defined areas of research within the framework of the project and its sites.

(e) *Project Publications*

Project Publications will form a key method of crystallising and disseminating the results and achievements of the Project. These publications will be scientific or informational texts on the activities and achievements of the Project, in the form of books, journal articles or multimedia publications. These Publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The Project Director/CTA will determine if specific Technical Reports merit formal publication, and will also (in consultation with the government and other parties and with the help of external specialists and staff where necessary) plan and produce these Publications in a consistent and recognisable format and identity. These Publications will form the most visible public output of the Project, and as such should be prepared and presented to the highest scientific and technical standards.

(f) *Project Terminal Report*

During the last three months of the project the Project Director/CTA will prepare the Project Terminal Report. This comprehensive report will summarise all activities, achievements and outputs of the Project, lessons learnt, objectives met and missed, structures and systems implemented, etc. and will be the definitive statement of the Project's activities over the five-year duration. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

(g) *Other Publications and Publicity Activities*

In order to ensure international dissemination of project results, **a high-quality publication of results** will be prepared, based upon the Project Terminal Report and previous Project Publications. Finally, it will be useful to hold at least one *international workshop* at which policy makers in neighbouring countries can be made aware of the country's progress in achieving the project's goals.

Tripartite Review (TPR)

The tripartite review (TPR) is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to Tripartite Review (TPR) at least once every twelve months by representatives of the Government, the executing agency and UNDP, and the first such meeting to be held within the first twelve months of the start of full implementation. The Project Support Unit shall prepare an Annual Project Report (APR) and to submit to UNDP. The APR must be ready two weeks prior to the TPR.

The APR will be used as one of the basic documents for discussions in the TPR meeting. The National Project Director/CTA presents the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The NPD/CTA also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Six-monthly APR's will be provided during the first two years of the project to ensure that design and inception activities are closely monitored, and subsequently the APR will be done on an annual basis. Separate reviews of each state component may also be conducted if necessary. Monitoring and Evaluation Indicators will be built into the project in consultation with UNDP.

Terminal Tripartite Review (TTR)

The terminal tripartite review is held in the last month of project operations. The Project support Unit is responsible in preparing the Terminal Report, and to submit to UNDP. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least two months prior to the terminal tripartite review. The Terminal Report will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its immediate objectives and contributed to the broader environmental objective, and decides whether any actions are still necessary.

Project Implementation Review (PIR)

A major tool for monitoring the GEF portfolio and extracting lessons is the annual GEF Project Implementation Review (PIR). The PIR has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects.

The PIR is mandatory for all GEF projects that have been under implementation for at least one year at the time that the exercise is conducted. A project becomes legal and implementation activities can begin when all parties have signed the project document. The PIR questionnaire is sent to the UNDP country office, usually around the beginning of June. It is the responsibility of the Project Director/CTA to complete the PIR questionnaire, with the oversight of the UNDP Country Office.

Mid-term Evaluation

An independent Mid-Term Evaluation will be undertaken at the end of the second year. The Mid-Term Evaluation will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organisation, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document.

Final Evaluation

An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at early signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The organisation, terms of reference and timing of the final evaluation will be decided after consultation between the parties to the project document.

Regular Monitoring and Evaluation

The project will also be closely monitored by the UNDP Country Office through quarterly meetings or more frequently as deemed necessary with the National project Director (CTA). This will allow to take stock and to trouble shoot of any problems pertaining to the project quickly to ensure smooth implementation of project activities.

Section I: Legal Context

This project document shall be the instrument envisaged in the Supplemental Provisions to the Project Document. The host-country implementing agency shall for the purpose of the Supplemental Provisions to the Project Document, refer to the co-operating agency described in the Supplemental Provisions.

All activities stipulated in the Project Document shall be implemented accordingly. However, should there be a need to make changes/modifications to any of the agreed activities, all signatories of the Project Document must concur, before such changes are made.

The following amendments may be made to the original Project Document, even if they are signed only by the UNDP Resident Representative, provided the latter assumes that all other signatories of the Project Document have no objections to the amendments:

- Revisions in, or additions to, any of the Annexes of the Project Document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance.
- Revisions which do not result in a major changes in the project's immediate objectives or outputs, and which are attributable to a reordering of the activities or inputs in order to improve the realisation of the objectives or the outputs.
- Necessary yearly revisions which are made to reorganise the provision of already scheduled inputs, to reflect an increase in the cost of expert services or other services due to inflation.

The executing agent designated on the cover page to this project document has been duly delegated by UNDP and the government coordinating authority to carry out this project and accordingly will follow UNDP and UNOPS accounting, financial reporting and auditing procedures set forth in the following documents as may be amended by UNDP from time to time.

- The Accounting and financial reporting procedures set out in UNDP Programming Manual and UNOPS Handbook
- The UNDP Audit Requirements set out in the UNDP Programming Manual.

The above documents are an integral part of this project document although incorporated herein only by reference. They have already been provided to the government and said executing agent.

Auditors to the project will be officially designated. Such auditors, and/or other officially appointed auditors shall undertake periodic management and financial audits of the project in accordance with UNDP auditing procedures. In addition, all accounts maintained by UNOPS for UNDP resources may be audited by the UNDP internal Auditors and/or the United Nations Board of Auditors or by public accountants designated by the United Nations Board of Auditors.

Attachment 6

Institutional Arrangements

Preface

It should be noted that the GEF project described in this project document is intended to serve, in part, as a substantial capacity-building tool for the permanent establishment of the Benguela Current Large Marine Ecosystem Programme, a Programme that will be the joint responsibility of the three participating countries, Angola, Namibia and South Africa. While the activities of the GEF project will dominate much of the work of the BCLME over the next five years, it is intended that the countries will in parallel be working to create a permanent Benguela Current Commission and, during the life of the project, be establishing an Interim Benguela Current Commission which will gradually assume responsibility for the long term sustainability of the BCLME. For this reason, the organogram, which is part of this Attachment, places over-riding importance of the role of the countries themselves through their commitment for a long-term BCLME program.

Implementing Agency

The UNDP will be the GEF Implementing Agency for this project. The UNDP is one of the formally designated GEF Implementing Agencies and is accountable to the GEF for all aspects of project implementation.

Executing Agency

The Executing Agency for the project will be the United Nations Office for Project Services or UNOPS. UNOPS has the comparative advantage of experience in the successful management of UNDP-GEF International Waters projects. Additionally, UNOPS personnel are well-positioned to offer to the project program Coordination Unit the expert services that it will require to ensure adherence to standard UNDP practice with regard to, among other things, the hiring of personnel, the transport of personnel to duty stations, recruitment processes, contracting, equipment purchase and disposition rules and regulations, and the coordination of monitoring and evaluation functions.

Project Steering Committee

The Project Steering Committee will be comprised of a representative of the GEF Implementing Agency, three members from each of the participating countries, and a representative of the SADC and of BENEFIT. In addition to the above, the three country members of the PSC shall serve as part of a selection committee for the CTA. A representative from UNOPS will participate in the SCM, only upon invitation from the PSC. The more precise functions of the PSC are to be found in the Terms of Reference which follow this Annex.

Program Coordination Unit

The Program Coordination Unit, or PCU, will provide a coordination and management structure for the development and implementation of the UNDP-GEF BCLME Program in accordance with the rules and procedures of GEF/UNDP and based on the general guidance provided by the Project Steering Committee (PSC). The PCU is comprised of the CTA, Office Manager, Secretary, and contract personnel as necessary including contractors to assure the overall accounting needs of the PCU.

The CTA shall be responsible for the overall coordination of all aspects of the Benguela Large Marine Ecosystem (BCLME) GEF Project in general and in particular. He/she shall liaise directly with designated officials of the Participating Countries, the Implementing Agency, the Executing Agency, UNDP Country Offices, existing and potential additional project donors, National Focal Points, and others as deemed appropriate and necessary by the PSC or by the CTA him/her self. The budget and associated work plan will provide guidance on the day-to-day implementation of the approved Project Document and on the integration of the various donor funded parallel initiatives. He/she shall be responsible for delivery of all substantive, managerial and financial reports from and on behalf of the Project. He/she will provide overall supervision for all GEF staff in the Program Coordination Unit.

Activity Centers

A network of specialist institutions coordinated through the PCU will implement a major part of the BCLME Program activities through the creation and use of Activity Centers. There will be three Activity Centers created as

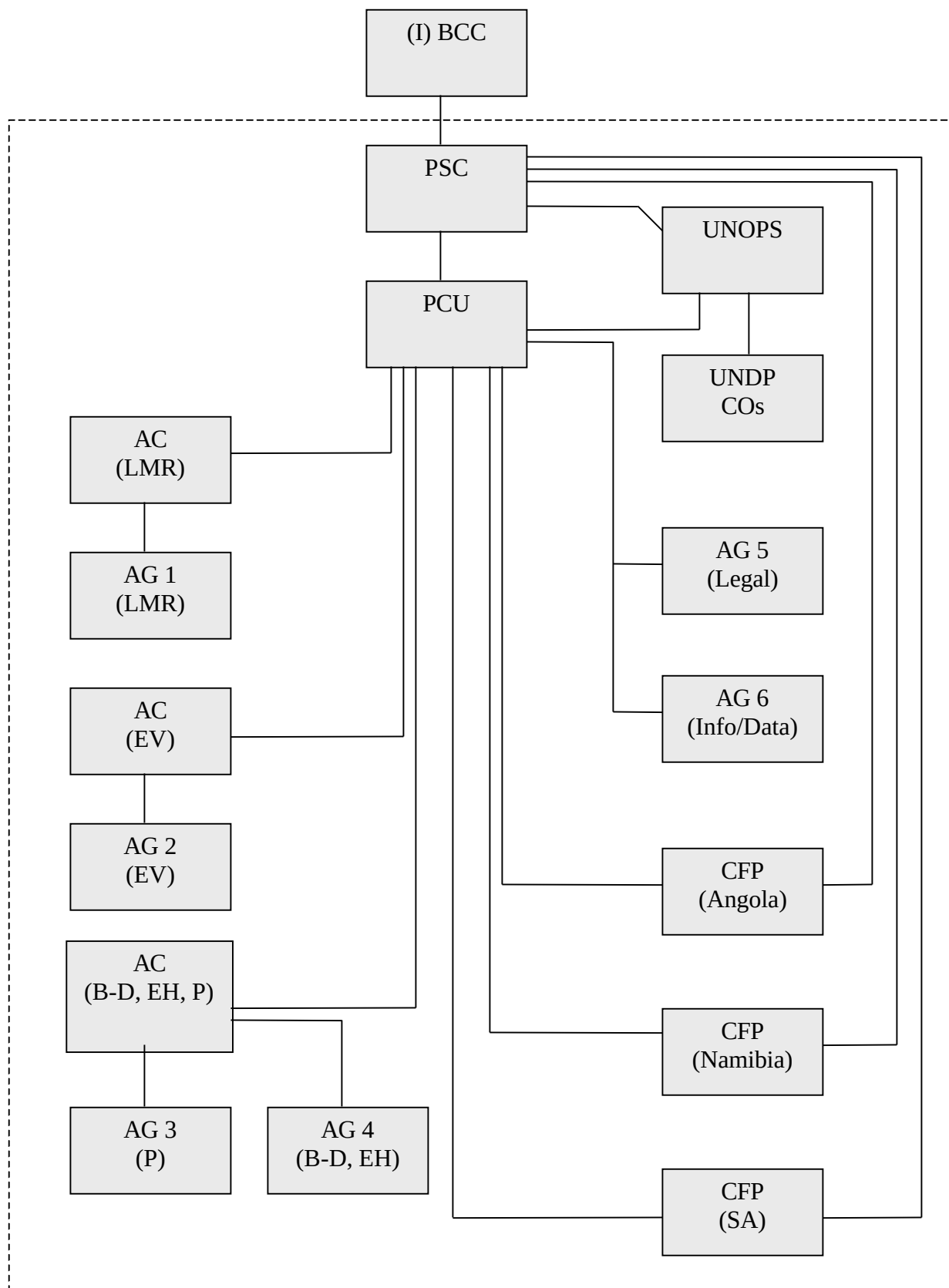
part of project implementation, one in each Participating Country. The centers will be based in national institutions selected by the Commissioners at the first meeting of the IBCC, or by the Program Steering Committee. The Activity Centers shall be created through in-kind contributions by Participating Country governments, as well as with significant funding from donors, especially during the first three years. There will be an Activity Center for issues related to Living Marine Resources. This Activity Center will be located in Namibia. A second Activity Center will be instituted to focus on issues related to Environmental Variability. This second Activity Center will be located in South Africa. A third Activity Center will focus on issues related to Biodiversity, Ecosystems and Pollution. This third Activity Center will be located in Angola. Each Activity Center will have a Director. Working with and through the CTA, the three Activity Center Directors will be responsible for developing and coordinating the work of the Activity Centers and assisting the various Advisory Groups assigned to their respective Activity Centers.

Advisory Groups

Each of the above Activity Centers will be assisted by the creation of Advisory Groups. The membership of the Advisory Groups will be approved by the PSC, and nominations will be made by the CTA after consultation with each of the Participating Countries. The purpose of the Advisory Groups is to provide the Secretariat or the PCU with the best possible advice and information on topics key to implementation of the BCLME Strategic Action Program. There will be six Advisory Groups. They will include Advisory Groups on Living Marine Resources, Ecosystem Variability and Ecosystem Health Impacts, Biodiversity, Ecosystems and Pollution, Legal and maritime Affairs, and Information and Data Exchange. The exact locations for and responsibilities of the Advisory Groups is described in the following Terms of Reference.

Following is an organogram depicting the relationships between and among the various project institutions:

BCLME PROGRAMME ORGANOGRAM



Attachment 7
Terms of Reference
BCLME Program

Program Coordination Unit (PCU)

Duration: 5 Years

Location: Windhoek, Namibia

Background: The PCU will provide a coordination and management structure for the development and implementation of the UNDP-GEF BCLME Program in accordance with the rules and procedures of GEF/UNDP and based on the general guidance provided by the Project Steering Committee (PSC). The PCU is comprised of the CTA, Administrator, Secretary, Driver and contract personnel as necessary including contractors to assure the day-to-day accounting needs of the PCU.

Tasks:

- Facilitate networking between and among project entities, national officials (Angola, Namibia and South Africa), Implementing Agency personnel, cooperating partners such as BENEFIT, UNDP Country Offices, National Focal Points, existing and potential co-financers, other related GEF projects, and others as appropriate and necessary;
- Organize technical cooperation activities between and among the Activity Centers in the three participating countries for capacity-building, project related policy, management and donor activities;
- Organize project related consultative meetings for introducing and implementing program activities (including arrangements for such necessities as simultaneous translation and the production of documents in English and Portuguese);
- Collect and dissemination of information on policy, economic, scientific and technical issues related to the BCLME program;
- Prepare progress reports (administrative and financial) concerning program activities;
- Prepare and arrange the logistics necessary to annual TPR Review Meetings;
- Establishment of and assistance in networking between specialized institutions in participating countries and technical specialists from elsewhere;
- Assure effective and efficient Program management (financial, logistical and strategic).

Terms of Reference
Project Steering Committee (PSC)

Duration: Five Years

Background:

The Project will have a Project Steering Committee comprised of representatives of the GEF Implementing Agencies, three members from each of the participating countries, and a representative of the SADC and of BENEFIT. UNOPS will send representative to participate in the SCM only upon invitation from the members of the PSC. More specifically the PSC shall:

- Assume oversight responsibility for the project
- Meet at least on an annual basis or at the call of the Chair, who shall be selected by the country representatives of the PSC.
- Provide general guidance and direction to the Project;
- Assist in identifying and allocating Project support for activities consistent with Project objectives;
- Annually review and assess the progress of the Project and its components;
- Annually review and approve the work plan and updated budgets of the Project and its activities;
- Provide strategic direction on the work plan;
- Provide guidance to the PCU in coordinating and managing the Project and its activities;
- Create mechanisms for interaction with the Private Sector, NGOs and other stakeholder communities; and
- Continue to seek additional funding to support the outputs and activities of the project.

In addition to the above, the three country members of the PSC (one from each country) shall serve as part of a selection committee for the CTA.

Terms of Reference Chief Technical Advisor (CTA)

Duration: 3 Year Fixed Term

Date required: August 2001 (Estimated)

Duty station: Windhoek, Namibia, with travel in the project region as deemed necessary (Angola, South Africa), and travel to other International locations consistent with these Terms of Reference.

Project Purpose: The long-term objective of the project is to undertake the array of priority measures identified in the Transboundary Diagnostic Analysis (TDA) and the Strategic Action program (SAP), in conjunction with the ongoing activities of the participating countries, donors, regional organizations, private industry, NGOs, and other affected interests. Major outputs will include provision of effective inter and intra project coordination and support through establishment of a Program Coordination Unit (PCU) and the identification and provision of resources for a Lead Agency in each of the participating countries. The project makes provision for the transfer of increasing amounts of responsibility and ownership of project activities as implementation proceeds. Other outputs include creating mechanisms for, and steps to be undertaken, to effect the sustainable management and use of the resources of the BCLME; assessment of environmental variability, ecosystem impacts, and improvement of predictability, preliminary steps to maintain BCLME ecosystem health and effectively control of pollution; and support to recruit new, additional donors and increase the level of co-finance during the life of the project and increased funding for the post-project programs and activities of the newly created Benguela Current Commission (BCC). The creation of the BCC, which must be negotiated among the participating countries, and immediate creation of the Interim Benguela Current Commission (IBCC), are highlights of the country-prepared and endorsed SAP. Seven Ministers have formally signed the SAP. At the substantive level, special emphasis in this project is being given to effecting the sustainable management and use of the resources of the BCLME and on assessment of environmental variability, ecosystem impacts, and improvement of predictability of system dynamics. Outputs and activities related to pollution and the coastal zone, issues whose transboundary impacts are limited at this point but likely to grow in future, are modest in nature but deemed critical to include as they sustain the broad level of interministerial participation that has characterized country efforts to date. Including a limited number of pollution and coastal zone activities is also necessary to the project objective of taking an integrated approach to the BCLME.

General Responsibilities:

The CTA shall be responsible for the overall coordination of all aspects of the Benguela Large Marine Ecosystem (BCLME) GEF Project in general and in particular. He/she shall liaise directly with designated officials of the Participating Countries, the Implementing Agency, the Executing Agency, UNDP Country Offices, existing and potential additional project donors, National Focal Points, and others as deemed appropriate and necessary by the PSC or by the CTA him/her self. The budget and associated work plan will provide guidance on the day-to-day implementation of the approved Project Document and on the integration of the various donor funded parallel initiatives. He/she shall be responsible for delivery of all substantive, managerial and financial reports from and on behalf of the Project. He/she will provide overall supervision for all GEF staff in the Program Coordination Unit.

Specific Duties

The CTA will have the following specific duties:

- Manage the GEF Components of the PCU, its staff, budget and imprest fund;
- Prepare an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Steering Committee and in close consultation and coordination with National Focal Points, GEF Partners and relevant donors;
- Coordinate, monitor and be responsible to the PSC for implementation of the work plan;

- Ensure consistency between the various program elements and related activities provided or funded by other donor organizations;
- Prepare and oversee the development of Terms of Reference for consultants and contractors;
- Coordinate and oversee preparation of the substantive and operational reports from the Program;
- Foster and establish links with other related GEF programs and, where appropriate, with other relevant regional International Waters programs;
- Be an ex-officio member of the PSC and be responsible for the preparation, organization, and follow-up necessary to the effective conduct of PSC business; and
- Submit quarterly reports of relevant project progress and problems to the PSC.

Qualifications:

- post-graduate degree (preferably a Ph.D.) in the Marine Sciences, Environmental Management, or a directly related field (e.g. fisheries management, natural resources economics, etc.);
- Extensive experience in fields related to the assignment. At least ten years experience as a senior project manager. Demonstrated diplomatic and negotiating skills;
- familiarity with the goals and procedures of international organizations preferred, in particular those of the GEF and its partners (UNDP, UNEP, the World Bank, the African Development Bank, and current and future potential additional donors);
- excellent English speaking and writing skills; and
- existing speaking and reading capability in, or the strong commitment to learn to speak and read, Portuguese;
- previous work experience in one or more of the participating countries preferred, and previous work experience in the region on issues related to the project very favorably considered;
- ability and willingness to travel extensively; and
- demonstrable skills in information technology.

Terms of Reference Administrator

Duration: Three Year Fixed-Term Appointment

Location: Windhoek, Namibia

General Description:

Under the supervision of the CTA, the Administrator will:

- Manage the day-to-day operations of the PCU, particularly with respect to technical services, staff support;
- With additional contractual support as necessary, assure that necessary financial, procurement (including importation, permits, etc.) and personnel matters are addressed; Prepare internal and external correspondence for the PCU, maintain files and assist in the preparation of documentation for meetings;
- Use the Internet and conduct research on availability of scientific, legal and technical information on topics related to the project implementation at all sites;
- Co-ordinate and assist in travel arrangements of project personnel;
- Prepare press releases, statements and speeches on the project activities;
- Undertake such other duties as may be assigned by the CTA.

Skills and Experience Required:

- Tertiary education preferred (equivalent as experience considered).
- Several years' experience of work in international organizations/agencies, governmental offices, research or training organizations.
- Proficiency in English; good knowledge of Portuguese a significant advantage.
- Demonstrable skills in Information Technology e.g. word processing, spreadsheet preparation, etc.
- Reliability, initiative, and a methodical approach and attention to detail.
- Ability to work under general guidance or independently.
- Willingness to work substantial periods of overtime at short notice.

Terms of Reference BCLME Activity Centers

Duration: 5 Years

Location: One Activity Center in each of the Participating Countries

Background:

A network of specialist institutions coordinated through the PCU will implement a major part of the BCLME Program activities through the creation and use of Activity Centers. There will be three Activity Centers created as part of project implementation, one in each Participating Country. The centers will be based in national institutions selected by the Commissioners at the first meeting of the IBCC, or by the Program Steering Committee. The Activity Centers shall be created through in-kind contributions by Participating Country governments, as well as with significant funding from donors, especially during the first three years. There will be an Activity Center for issues related to Living Marine Resources. This Activity Center will be located in Namibia. A second Activity Center will be instituted to focus on issues related to Environmental Variability. This second Activity Center will be located in South Africa. A third Activity Center will focus on issues related to Biodiversity, Ecosystem Health and Pollution. This third Activity Center will be located in Angola.

The Activity Centers will:

- each have an Activity Center Director and secretary which shall be nationals of the host country;
- perform its functions under the direct supervision of the CTA;
- receive the services of necessary national experts and international consultants;
- serve as the headquarters for the activities of designated project Advisory Groups;
- work closely with the PCU in order to establish links with the national institutional focal points i.e. specialized institutions selected by Governments to participate in each of the networks;
- with the support of the PCU, organize Working Groups, conduct training, and present recommendations to the Program Steering Committee through the PCU;
- provide capacity strengthening and networking for their respective activities.

Terms of Reference Advisory Groups

Duration: Five Years

Background/Purpose:

Each of the above Activity Centers will be assisted by the creation of Advisory Groups. The membership of the Advisory Groups will be approved by the PSC, and nominations will be made by the CTA after consultation with each of the Participating Countries. The purpose of the Advisory Groups is to provide the Secretariat or the PCU with the best possible advice and information on topics key to implementation of the BCLME Strategic Action Program. The Advisory groups are required to translate a part of the overall budget into specific projects and activities that will address the issues and problems. While these issues have been broadly described at the 2nd workshop, they need to be made very specific before activities start. This requires the technical expertise of the advisory groups. Advisory Groups will be formed to, *inter alia*:

1. Look at the problems and issues identified in the TDA/SAP.
2. Look at existing projects and activities undertaken by the national Governments, BENEFIT, bilateral aid programs and private enterprises.
3. Identify further gaps or elements missing from existing programs in order that the cross boundary elements are properly addressed.
4. Prioritise these incremental activities.
5. Delegate a task or working group to produce a project proposal or activity or set up terms of reference too contract the activity out. (There may be problems with intellectual copyright here and this issue will need to be addressed by the appropriate project personnel; scientists, at least, are often reluctant to devise projects for others to do; managers cannot adequately specify what needs to be done).
6. These TOR will require members from all three countries to meet, prioritise all the issues surrounding the main theme, and disburse funds between the three countries.

In all cases Advisory Groups shall, as part of their duties:

- at the first meeting of each Advisory Group, nominate and appoint an Advisory Group Chairman and Co-Chairman;
- respond to requests for advice from the PCU and prepare proposals for the PCUs consideration at their own initiative;
- include experts from specialized focal points of the member states;
- work closely with other experts, bodies, institutions and industry as they, or the PCU, deem necessary;
- involve relevant NGOs and other stakeholders as deemed necessary as a means of improving public participation and awareness in all of the focal areas they cover; and
- give particular attention to the inclusion of experts in environmental law, environmental economics and public awareness, where appropriate.

Each Advisory Group shall seek to make best use of expertise and institutional capacity within the region. Advisory Group work plans will be approved on an annual basis by, initially, the PSC and, when it is created and functioning, the IBCC. Each Advisory Group may request assistance from, or assign specific tasks to, any institution or expert that it considers appropriate.

The BCLME-Activity Centers will, in consultation with the PCU, provide general co-ordination for the Advisory Groups, assigning the management of specific tasks to appropriate officers according to their technical specialization. The Advisory Groups shall be further supported by the three Activity Centers (one in each member state) by way of the co-ordination of program activities and the provision of practical technical support for their work.

Advisory Groups shall liaise with each other where appropriate and joint groups may be set up from time-to-time, particularly on such issues as resource assessment, fisheries development, ecosystem health, environmental variability and environmental impact assessment.

Specific Advisory Groups shall include:

1. The Advisory Group on Living Marine Resources

The Group will co-ordinate activities and provide technical support for the sustainable management, utilisation and protection of fisheries and other living marine resources of the BCLME. The Advisory Group will gather the basic source of information related to transboundary commercial fish stocks and management strategies including means of capture, installed capacity and protection measures and will be co-ordinate calibration/inter-calibrations for transboundary assessments; socio-economic assessments and serve as a regional forum for stock assessment advice. Information would also be collected on other potentially important living marine resources that are currently not harvested, as well as mariculture projects. These data will be gathered from all national authorities and should document past changes in the production and stock of the region and their relationship to changes in the Benguela Current ecosystem. They will provide the basic source of information for future management strategies, and for the implementation of any future fisheries convention.

The Group will develop proposals and, where appropriate, co-ordinate (1) harmonisation at the regional level of a legal and institutional framework aimed at sustainable use of living marine resources; (2) improvement of the fisheries resource assessment of the BCLME based on a regional approach; (3) development of projects for conservation, protection and rehabilitation of living marine resources; (4) in consultation as appropriate with other groups, development of specific techniques for mariculture that do not harm the environment or the biological diversity. The Group will collaborate with regional and international institutions, governmental and non-governmental bodies and the private sector.

This Advisory Group will be coordinated by, and shall report to the Director of, the Living Marine Resources Activity Center located in Namibia.

2. The Advisory Group on Environmental Variability

This Group will co-ordinate activities and provides technical support for the development and implementation of an early warning system for variability and change in the physical, chemical and biological environment of the BCLME. Development of models to predict transboundary environmental change and assess the overall health of the ecosystem will form a primary role of this Group. The implementation of new techniques for rapid assessment of the Benguela Current ocean and coastal environments will also be pursued. Cost-effectiveness will be a guiding principal for group activities.

The Group will develop proposals for and co-ordinate (1) effective state of the environmental assessment of the Benguela Current Large Marine Ecosystem; (2) modelling of the Benguela Current ecosystem and the interaction between the physical, chemical and biological parameters with a view to improving predictability of extreme events and system wide change; (3) the metocean data buoy (PIRATA) demonstration project; (4) the assessment of environmental variability and change and the impacts thereof on living marine resources and the ecosystem as a whole; (5) rapid environmental assessment techniques using towed undulating oceanographic instruments and satellite remote sensing; (6) regional training programs in scientific and technical aspects of environmental monitoring, data processing and modeling of the BCLME; (7) development of a regional network, contingency plan and reporting system for HABs; (8) mitigation impacts of HABs and community involvement in monitoring.

The work of this Advisory Group shall be coordinated through the Activity Center for Environmental Variability to be located in South Africa.

3. The Advisory Group on Pollution

The Group will co-ordinate, and provide technical support for, project activities aimed at the prevention, reduction, control and monitoring of all sources of transboundary pollution in the BCLME area. Such activities will include (1) assessment of water quality in the BCLME area, including identification and comparative evaluation of sources of pollution; (2) development of regional protocols and agreements with a view to harmonizing policies and standards on water and sediment quality, and on the control of marine litter; (3) development of a regional framework for the monitoring of marine pollution and enforcement of regulations; (4) assessment for the needs for training in marine pollution control, and identification of relevant opportunities and/or development of courses as necessary; (5) development of a regional oil spill contingency plan; (6) development of public awareness of marine pollution issues through the production of relevant educational material and; (7) implementation of demonstration projects.

The work of this Advisory Group shall be coordinated through the Activity Center for Environmental Variability, Ecosystem Health and Pollution, to be located in Angola.

4. The Advisory Group on Biodiversity and Ecosystem Health

The Group will co-ordinate, and provide technical support for, project activities aimed (1) production of indices of ecosystem health integrating fisheries, environmental variability, biodiversity and pollution; (2) an assessment of biodiversity status in conjunction with the Living Marine Resources Activity Center; (3) identification of currently threatened communities/species/habitats and (4) a proposed system of coastal protected areas. In addition, the Advisory Group shall also liaise and collaborate with relevant regional and international institutions.

The work of this Advisory Group shall also be coordinated through the Activity Center for Environmental Variability, Ecosystem Health and Pollution, to be located in Angola.

5. The Advisory Group on Legal and Maritime Affairs

The Group will monitor and advise the PCU (Secretariat) on the emerging legal regimes of the BCLME, measures adopted pursuant to and activities carried out within them. These activities will be carried out with a view to ensuring (1) the appropriate development of the regime and its efficacy; (2) the consistency of the regime with global international law regimes (such as UNCLOS, UNEP, pollution conventions, the Biodiversity Convention, etc. (3) the consistency of the regime with regional and other related international law regimes (such as SADC and the projected SEAFO); (4) that harmonisation of national policies within the system are similarly consistent. The Group will, where requested to do so by the PCU, (Secretariat or a Member State) examine the compatibility of any national measure taken by any Member State with a view to assessing its consistency with the system and advising thereon.

The work of this Advisory Group shall be coordinated in a manner to be determined by the Participating Countries.

6. The Advisory Group on Information and Data Exchange

This group will focus its work on the improvement of information flow and data exchange. In particular, it will oversee (1) Updating the existing Benguela Current information on fisheries, oceanography, environmental variability and ecosystem health, diamond mining and other minerals and deposits, offshore oil and gas exploration and production, coastal developments, and socio-economics; (2) develop an integrated regional data base and Geographic Information System (GIS) for the BCLME; (3) compile and update a bibliography of the region and a BCLME website; (4) strengthen the e-mail network and improve Internet connections to the web services for principal data centers and Ministries of Environment, Fisheries and Marine Resources, Energy, Mining and Petroleum for the exchange of information and data including meta-data; (5) develop a regional Internet facility comprising environmental data, sets of data obtained from various national, regional and international programs, copies of historical data and datasets from global data centers such as the World Data Center (WDC), the Global Ocean Observation System-Living Marine Resources (GOOS-LMR) and the Intergovernmental Oceanographic Commission (IOC); (6) co-operate with an NGO network in data exchange; Furthermore it will organise training on

data exchange, promote and support UN agency sponsored distance-learning programs such as the International Waters IW:LEARN and TRAIN-SEA-COAST Programs and also assist other networks in the region.

The work of this Advisory Group shall be coordinated by the PCU.

Terms of Reference

Activity Centre Directors

Duration: Three Year Fixed Term Appointment

Location: One Activity Center Director in Each Participating Country

Background:

A network of specialist institutions coordinated through the PCU will implement a major part of the BCLME Program activities through the creation and use of Activity Centers. There will be three Activity Centers created as part of project implementation, one in each Participating Country. The centers will be based in national institutions selected by the Commissioners at the first meeting of the IBCC, or by the Program Steering Committee. The Activity Centers shall be created through in-kind contributions by Participating Country governments, as well as with significant funding from donors, especially during the first three years. There will be an Activity Center for issues related to Living Marine Resources. This Activity Center will be located in Namibia. A second Activity Center will be instituted to focus on issues related to Environmental Variability. This second Activity Center will be located in South Africa. A third Activity Center will focus on issues related to Biodiversity, Ecosystem Health and Pollution. This third Activity Center will be located in Angola.

The countries have also decided that an Activity Center Director will be named to head each of the Activity Centers.

General Responsibilities:

Working with and through the CTA, the three Activity Center Directors will be responsible for developing and coordinating the work of the Activity Centers and assisting the various Advisory Groups assigned to their respective Activity Centers. More specifically the Activity Center Directors shall:

- serve as the direct link between the work of the Activity Center, the Advisory Groups working through the respective Activity Centers, and the PCU;
- serve as a Senior Advisor to each of the Advisory Groups attached to his/her Activity Center;
- assist each of the Advisory Groups in the development of work plans for his/her Advisory Groups and the production of work products associated with those work plans;
- be responsible for the timely and efficient development, production and distribution of the work products of the Advisory Groups attached to his/her Activity Center;
- serve as a principal on-site, project Liaison to Participating Country representatives;
- ensure that the PCU and the PSC receive periodic updates of progress and problems of work associated with the work of Advisory Groups attached to his/her Activity Center.

Qualifications:

Each Activity Center Director shall:

- be a national of the country in which the Activity Center is located;
- have an advanced degree in a field related to the work of the Advisory Groups attached to his/her Activity Center (years of experience in a field related to the work of the Advisory Groups may be substituted for lack of an advanced degree at the discretion of the hiring individual or committee);
- have significant experience in a field related to the work of the Advisory Groups attached to his/her Activity Center;
- have the ability to converse and write in English, with the ability to converse and write in Portuguese seen as a distinct advantage (for the Angola based Activity Center, fluency and writing competence in Portuguese and English);

**Terms of Reference
Administrative Assistant to
Activity Center Director**

Term: Initial Three-Year Contract

Location: One Secretary for Each of 3 Activity Centers

General Job Description

The Secretary, working under the close supervision of the Activity Center Director, and in close liaison with the PSC Office Manager, will have responsibility for a variety of tasks essential to maintaining the efficient operation of the Activity Center. These include communications tasks, assisting with travel arrangements and general secretarial duties. The post requires language abilities, experience with PCs, good communication skills, and a capacity for clearly discerning priorities under irregular work pressure. The incumbent will be required to keep regular working hours in order to ensure the proper manning of the Activity Center.

Duties

1. Communication tasks

The incumbent will be responsible for the external communication of the Activity Center. This includes: (a) managing telephone, fax and electronic mail communication and the Activity Center address book; (b) updating the mailing; and (c) organizing outgoing official mail, particularly the mailing of all circulars, invitations to meetings and meeting reports.

2. Staff travel

The Secretary will organize staff travel in close cooperation with the appropriate personnel in the PCU. He/she will assist the staff and consultants with the advance planning of travel, investigating routes, connections and hotel arrangements. He/she will also assist project staff with the travel plans for external meetings. He/she shall organize hotel arrangements and program of activities for participants in meetings organized by the Activity Center.

3. General Secretarial Duties

The incumbent will be requested to assist with the maintenance of project files and the photocopying of specific documents and be responsible for the transcription and distribution of meeting minutes. He/she will also prepare and type texts for the project staff where there is an urgent need and where the work plan permits.

4. Other duties as may be assigned by the Activity Center Director.

Skills and Experience Required

- proven computer skills;
- for the Namibia and South Africa based Activity Centers, fluency in English with spoken and written ability in Portuguese a strong asset; in the Angola Activity Center, fluency in Portuguese and English;
- familiarity with subject matter relevant to the project will be considered favorably.

Abbreviated Terms of Reference

Short-Term International Consultants

Short-term international consultants will give technical inputs to the Outputs and specific Activities of the project, act as resource persons, and give methodological guidance in organizing meetings and workshops. International expertise will be required in the following general categories (detailed Terms of References will be prepared by the CTA during project implementation):

- LME expertise
- Marine resources
- Oceanography
- Ecosystem Health and Impacts
- Other Areas as may be deemed necessary by the CTA

Abbreviated Terms of Reference Short and Long Term National Professionals

National Professionals and Consultants, for both short and long term assignments, will be recruited from qualified candidates from the participating countries to work at the national and regional levels. National Consultants will play an important role in the SAP planning process so that SAP is country-driven and can reinforce the responsibility of the participating countries to produce a coherent strategic plan for sustainable environmental management in the Region. The following National Professionals and Consultants will be recruited. The detailed Terms of References will be prepared by the CTA during project implementation.

National Professionals and Consultants will be recruited, as available, to assist the work of the project in the following technical areas:

- Living Resources
- Mining and Drilling Impacts
- Mariculture
- Vulnerable Habitats
- Non-harvested Species
- Environmental Predictability
- Capacity Building
- HABs
- Water Quality
- Habitat Problems/Opportunities
- Biodiversity
- Other areas as may be deemed necessary by the CTA.