

## D. Management of Pollution

Coastal developments and rapid expansion of coastal cities, much of which was unforeseen or unplanned, has created pollution "hot spots" in all three countries, with resultant deterioration in water quality. The problem is aggravated by an increase in marine litter from land and shipping activities. In addition, a substantial volume of oil is transported through the BCLME region and within it, and there is increasing exploration and extraction of oil and gas in the north. There is a significant risk of contamination of large areas of fragile coastal environments from major accidents, damage to coastal infrastructure and to straddling fish stocks.

32. The following joint policy actions to manage marine pollution in the BCLME and minimise ecosystem impacts are agreed:

### a) *Harmonising environmental quality objectives*

The IBCC will endeavour to provide effective regional communication to co-ordinate efforts to control marine pollution, minimise impacts and develop cost-effective solutions. This will include *inter alia* development of regional environmental quality indicators, proposals for marine pollution control and surveillance, regional monitoring/inspection of the coastal zone and regional enforcement of standards. The focus will be on prevention rather than cure. In the case of point source pollution, the member states will by June 2004 develop waste quality criteria for receiving waters.

### b) *Oil pollution contingency plans and regional policy*

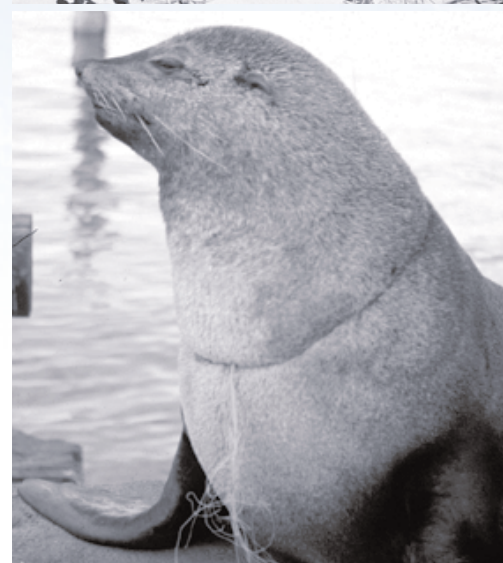
All three countries have or shortly will have oil pollution contingency plans. The IBCC will endeavour to harmonise these plans as far as possible and to develop necessary mechanisms for sharing technology and expertise, and in the event of a major oil spill, for the sharing of clean-up equipment and provision of expert advice. An appropriate regional policy will be developed by 2005 to minimise transboundary (cross-border) impacts of oil pollution from activities in the EEZs of individual countries. Such activities will be co-ordinated by an Activity Centre.

### c) *Implementation of MARPOL 73/78*

The Commission will co-operate with the SADC initiative for devising a common strategy for the implementation of MARPOL 73/78 in the BCLME region.

### d) *Marine litter*

The growing problem of marine litter will be addressed first by a regional public awareness campaign (which will have seafarers as its primary focus); and second by harmonising legislation, enforcement and implementation of standards at a regional level. Locally and nationally, activities will be facilitated and co-ordinated.



## E. Maintenance of Ecosystem Health and Protection of Biological Diversity

Human impact on the ecosystem by way of fishing, increasing pressure on the coastal zone, pollution etc. has negatively affected components of the system, in particular top predators such as marine mammals and coastal birds (e.g. African penguins), which are now threatened or endangered. Several habitats, in particular coastal habitats, have also been perturbed or lost as a consequence of development and other human impacts, such as loss of wetlands, destruction of mangroves and lagoons. These have transboundary consequences and may be important globally. Moreover, there has been a loss of biotic integrity, including changes in community composition, species diversity and the introduction of alien species.

33. In order to retard or reverse habitat alteration and destruction and to protect vulnerable species and biological diversity, the following regional policy actions are agreed to.

### a) *Vulnerable species and habitats*

A regional assessment of the status of the most vulnerable species and habitats will be undertaken collaboratively by December 2003. This assessment will be facilitated by one of the Activity Centres. Member states will endeavour to assemble the necessary baseline data and, where affordable, undertake focused research on perceived causality. A regional marine and coastal early warning system will be developed by December 2004 and incorporated into an action that will specify environmental quality criteria and propose the most appropriate regional structure to address the problems. Implicit in this is the development of mechanisms for co-operation between industries, governments and other stakeholders. A needs assessment to improve coastal management expertise will also be conducted. A suite of appropriate projects for marine and coastal areas suitable for GEF and donor funding will be elaborated during 2002/3. These will include *inter alia* a project to determine the carrying capacity of the BCLME coastal zone for tourism.

### b) *Ballast water policy*

A regional policy on ballast water for the BCLME will be developed in tandem with the existing GEF international ballast water management project. The latter project will include a SADC-wide workshop to raise awareness on the problems associated with ballast water. South Africa can take the lead in this initiative.

### c) *Marine biological diversity conservation*

A regional marine biodiversity conservation management plan will be developed by December 2005. This plan will include a framework for assessment and prediction of the aspects of environmental change, an assessment of genetic diversity implications for marine resource management, and identification of priority marine protected areas, in particular possible transboundary protected areas. Close co-operation will also be maintained with the SADC programme "The Southern African Biodiversity Support Programme". The GEF SIDS Programme for the South Pacific could serve as a useful framework for the identification and development of protected areas. The process of establishing a management plan will be facilitated by an Activity Centre.



## F Capacity Strengthening

The strengthening of human and infrastructure capacity and the maintenance of existing capacity has been identified as a high priority, if not the highest priority, in the region. Existing capacity is stretched to the limit to address national priorities within the BCLME, and there is a serious lack of capacity to address the priority transboundary issues identified in the TDA and highlighted in this SAP. Appropriate strengthening of human and infrastructure capacity in the region is a prerequisite for the sustainable integrated management of the BCLME. This applies at all levels in all transboundary components including, *inter alia*, science and technology based activities and assessment, economic assessment, surveillance, overall management and policy development, and regulation and enforcement.

34. Policy actions proposed to develop and maintain capacity in the BCLME are listed below.

### a) *Strategic plan for capacity strengthening*

A comprehensive collaborative study of human capacity and training and infrastructure needs to address priority transboundary issues will be undertaken during 2003, together with an assessment of the status of existing capacity and trends therein. This needs assessment will use as its point of departure the priority areas identified in the TDA, e.g. transboundary resource assessment and management; environmental assessment and prediction of large-scale extreme events impacting across the BCLME and national boundaries, and the ecosystem consequences of such extreme events; transboundary pollution management; cumulative impact assessment of mining, and system-wide protection of biodiversity. It will harmonise with other programmes and activity areas such as BENEFIT and the Monitoring-Control-Surveillance (MCS) initiative. It will form a basis for the collaborative development of a comprehensive but realistic regional strategic plan for capacity strengthening and maintenance within the context of the BCLME and focusing on transboundary needs, and will be finalised by October 2003.

### b) *Implementation of capacity strengthening strategic plan*

Following acceptance of the regional strategic plan for capacity strengthening and maintenance in the BCLME, each country shall endeavour to implement the strategy to the best of its ability.



# National Strategic Action Plans

35. Each member state shall prepare by June 2003 a national BCLME strategic action plan (10 pages) or other corresponding document, which shall present details of additional national actions to further implement the SAP. These shall include details of responsibilities and specific projects where possible.

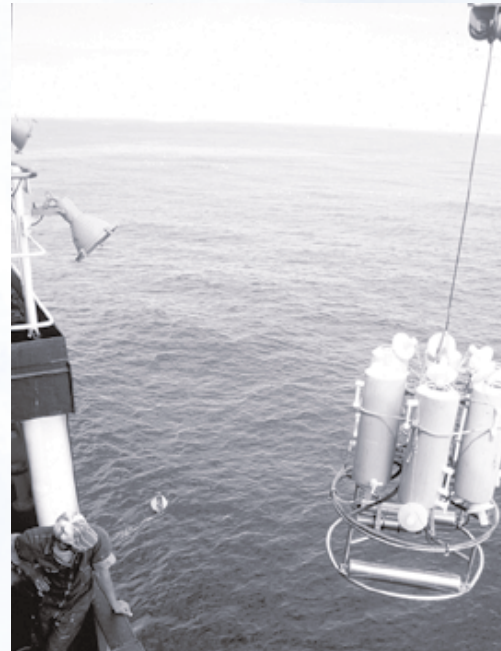
## Finance & Review

### FINANCING THE STRATEGIC ACTION PROGRAMME FOR THE NEXT FIVE YEARS AND REVIEW

36. The countries will seek the necessary funding for the actions agreed upon in this Strategic Action Programme from national, regional and international sources, through private and general public funding or through the application of specific economic instruments, as well as through grants and loans. Specific projects for international funding will be prepared for bilateral or multilateral funding. Donor conferences for assisting in this process shall be held every five years, starting in the year 2003. Specific funding arrangements for the national policies and measures agreed on in this Strategic Action Programme shall be presented in the National SAPs to be adopted by each of the member states.
37. The SAP shall be reviewed from time to time and updated when and where necessary.

## Arrangements for Future Co-operation

38. The implementation of this SAP over a five-year period will produce a revised programme that will lead to long-term measures to sustain and protect the BCLME. 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.
39. It is envisioned that the BCLME Programme will continue to develop strong links with institutions, NGOs and the private sector within member states and the SADC region as a whole, so promoting the overall objective of closer economic integration.



# Annexure I

## THE STRUCTURE OF THE INTERIM BENGUELA CURRENT COMMISSION

The Interim Benguela Current Commission will consist of three representatives from each country, each with a vote. Decisions will be made with majority voting. The terms of office of the Commissioners shall be for six years, one-third retiring after two years and another one-third after four years. A chairperson shall be elected by the Commission and will rotate every two years. There shall be equality between member states; The IBCC will also have non-voting representation from

- a) SEAFO,
- b) UNDP,
- c) UNEP,
- d) SADC,
- e) BENEFIT and
- f) the Secretariat.

The World Bank shall be represented on the IBCC for the duration of the BCLME Programme (five years). Specialists and representatives of other stakeholders and regional or international organisations can be co-opted onto the IBCC from time to time as appropriate.



# Annexure II

## RECOMMENDATIONS TO THE INTERIM BENGUELA CURRENT COMMISSION

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

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 Programme. In all cases, they will, as part of their duties, respond to requests for advice from the PCU and prepare proposals for the PCU's consideration at their own initiative. The groups will include experts from specialised focal points of the member states. The Advisory Groups will work closely with other experts, bodies, institutions and industry as they, or the PCU, deem necessary. Involvement with relevant NGOs is also encouraged, particularly in the improvement of public participation and awareness in all of the focal areas they cover. Particular attention shall also be given to including 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 and, within its work plan, approved on an annual basis by the IBCC, may request assistance from or assign specific tasks to, any institution or expert that it considers appropriate.

The BCLME-PCU will provide general co-ordination for the Advisory Groups, assigning the management of specific tasks to appropriate officers according to their technical specialisation.

The Advisory Groups shall be supported by the PCU and/or as appropriate three Activity Centres (one in each member state) which shall co-ordinate the necessary programme support and the provision of practical technical support for their work. The Activity Centres shall be created through in-kind contributions by member state governments, as well as with significant funding from donors, especially during the first three years.

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.

The Advisory Groups to be located in Activity Centres are defined and listed below.

### **1. Advisory Group on Fisheries and Other 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 co-ordinate calibration/inter-calibrations for transboundary assessments; conduct 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

- 1.1 harmonisation at the regional level of a legal and institutional framework aimed at sustainable use of living marine resources;
- 1.2 improvement of the fisheries resource assessment of the BCLME based on a regional approach;
- 1.3 development of projects for conservation, protection and rehabilitation of living marine resources;
- 1.4 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, government bodies and the private sector.

## 2. Advisory Group on Environmental Variability, Ecosystem Impacts and Improved Predictability

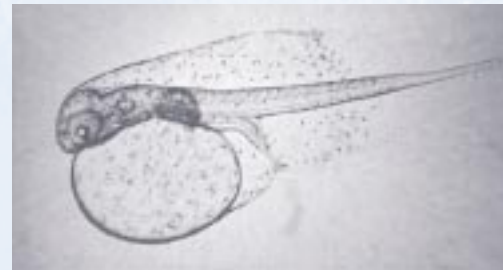
This Group will co-ordinate activities and provide technical support for the development and implementation of an early warning system for variability and change in the physical, chemical and biological environment of the BCLME. Development of models to predict transboundary environmental change and assessment of the ecosystem impacts of environmental variability/change 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 principle for Group activities.

The Group will develop proposals for and co-ordinate

- 2.1 effective state of the environmental assessment of the Benguela Current Large Marine Ecosystem;
- 2.2 modeling 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;
- 2.3 the metocean data buoy (PIRATA) demonstration project in southern Angola-northern Namibia;
- 2.4 rapid environmental assessment techniques using towed undulating oceanographic instruments and satellite remote sensing;
- 2.5 regional training programmes in scientific and technical aspects of environmental monitoring, data processing and modeling of the BCLME;
- 2.6 development of a regional network, contingency plan, public awareness and reporting system for HABs;
- 2.7 mitigation of the impacts of HABs, and community involvement in monitoring.

## 3. Advisory Group on Biodiversity and Ecosystem Health

This Advisory Group will co-ordinate all activities relating to the conservation of biological diversity in the BCLME, and will provide the basis for harmonisation of relevant policies in the three countries which share the ecosystem. Potentially important conservation and marine protected areas, in particular in the proximity of the transboundary regions, will be identified and recommendations made to the PSC/IBCC as appropriate. High on the agenda of this Group will be the involvement of all the stakeholders via a forum so that there can be full participation by all interested and affected parties in the negotiation and development of a biodiversity code of conduct for the region by 2006. This group will of necessity work closely with the Living Marine Resources,



Pollution and Environmental Variability Advisory Groups. The Group is seen as a key instrument to attain the objectives of the BCLME Programme, viz integrated management, sustainable development and protection of the ecosystem.

#### 4. Advisory Group on Marine 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

- 4.1 assessment of water quality in the BCLME area, including identification and comparative evaluation of sources of pollution;
- 4.2 development of regional protocols and agreements with a view to harmonising policies and standards on water and sediment quality, and on the control of marine litter;
- 4.3 development of a regional framework for the monitoring of marine pollution and enforcement of regulations;
- 4.4 assessment of the need for training in marine pollution control, and identification of relevant opportunities and/or development of courses as necessary;
- 4.5 development of a regional oil spill contingency plan;
- 4.6 development of public awareness of marine pollution issues through the production of relevant educational material;
- 4.7 implementation of demonstration projects. In addition, the Advisory Group will liaise and collaborate with relevant regional and international institutions, government bodies, NGOs and the private sector (e.g. industry).

#### 5. Advisory Group on Legal and Maritime Affairs

The Group will monitor and advise the PCU on the emerging legal regimes of the BCLME, measures adopted under it and activities carried out within it, with a view to ensuring

- 5.1 the appropriate development of the regime and its efficacy;
- 5.2 the consistency of the regime with global international law regimes (such as UNCLOS, UNEP, pollution conventions, the Biodiversity Convention, etc.);
- 5.3 the consistency of the regime with regional and other related international law regimes (such as SADC and the projected SEAFO);
- 5.4 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.

#### 6. Advisory Group on Information and Data Exchange

The Group will focus its work on the improvement of information flow and data exchange. In particular, it will oversee

- 6.1 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;
- 6.2 development of an integrated regional data base and Geographic Information System (GIS) for the BCLME;





- 6.3 compilation and updating of a bibliography of the region and a BCLME website;
- 6.4 strengthening the e-mail network and improving Internet connections to the web services for principal data centres and Ministries of Environment, Fisheries and Marine Resources and Energy and Mining for the exchange of information and data including meta-data;
- 6.5 develop a regional Internet facility comprising environmental data, sets of data obtained from various national, regional and international programmes, copies of historical data and datasets from global data centres such as the World Data Centre (WDC), the Global Ocean Observation System-Living Marine Resources (GOOS-LMR) and the Intergovernmental Oceanographic Commission (IOC);
- 6.6 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 programmes such as the International Waters IW:LEARN and TRAIN-SEA-COAST Programmes and also assist other networks in the region.

## 7. Advisory Group on Training and Capacity Development

Training and capacity development is an over-arching activity within the BCLME. Indeed, together with technology and knowledge transfer, it is a cornerstone on which the entire Programme is based, underpinning virtually all activities. Training and capacity development will be high on the agendas of the PCU and Activity Centres as well as the six Advisory Groups listed above, and will be incorporated into the various project activities initiated and supported by the BCLME during the GEF Intervention Phase (2002-2007). In order to maximise the benefits to the region and to ensure proper co-ordination and integration of training and capacity development, a cross-cutting Advisory Group is proposed, the work of which will be facilitated directly by the PCU with the necessary support from the Activity Centres. A Training and Capacity Development Strategy and Implementation Plan will be developed during 2003 (in partnership with BENEFIT where appropriate). The objective of this is to ensure that by 2007, or whenever the BCC is formally established, the necessary expertise exists in each of the participating countries so that the ongoing priority transboundary issues can be professionally addressed and the ecosystem as a whole sustainably managed and protected.

## 8. Activity Centres

A major part of the BCLME Programme activities will be implemented by a network of specialist institutions co-ordinated by Activity Centres. Each Government will agree to host one of these centres. The centres will be based on national institutions selected by the Commissioners at the first meeting of the IBCC or by the Programme Steering Committee. The Activity Centres will work closely with the PCU in order to establish links with the national institutional focal points i.e. specialised institutions selected by Governments to participate in each of the networks. With the support of the PCU, the Activity Centres shall organise Working Parties, conduct training and present recommendations to the Programme Steering Committee.

The three Activity Centres are as follows:

- Activity Centre 1: Living Marine Resources (based in Swakopmund)
- Activity Centre 2: Environmental Variability (based in Cape Town)
- Activity Centre 3: Biodiversity, Ecosystem Health and Pollution (based in Luanda)

*(The functions of the three Activity Centres are defined in the GEF-UNDP Project Document RAF/00/G32/A/IG/3 - PRODOC 2002).*



# Acknowledgements

All photographs courtesy of Marine and Coastal Management or Sue Matthews, with the exception of the following:

CSIR	Page 12	Seawatch buoy
De Beers Marine	Page 5	Drilling rig
	Page 6	Separator
	Page 8	ROV deployment
	Page 11	Diamond sorting, Grab sample, Jago
	Page 19	Heavisides dolphin
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NOAA	Page 12	Storm wave
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Rob Tarr	Page 18	Bokkoms, Treknet fishers, Lobster boats, Fishing at sunset
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The Argus	Page 5	Burning ship, Oiled penguins

