



## Implementation of an Ecosystem Approach to Ocean Governance

By

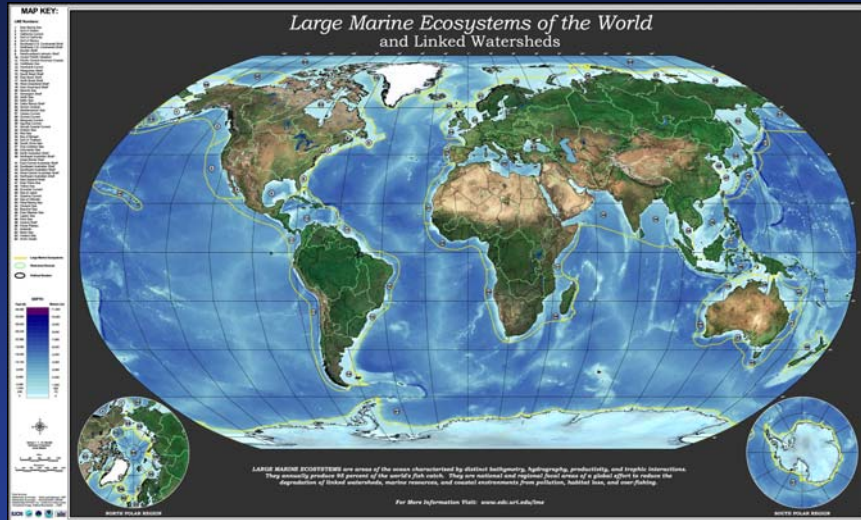
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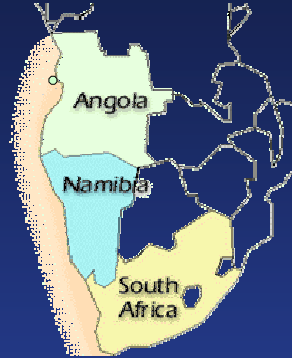


## LARGE MARINE ECOSYSTEMS OF THE WORLD



## Benguela Current LME Programme

- Countries: Angola, Namibia and South Africa
- Duration: 2002 - 2007
- Implementing agency: UNDP
- Executing agency: UNOPS
- GEF: US\$ 15,000,000.00
- In-kind: US\$ 18,000,000.00
- **Goal: Integrated management, sustainable development and protection of the ecosystem**



### THE BENGUELA CURRENT LARGE MARINE ECOSYSTEM

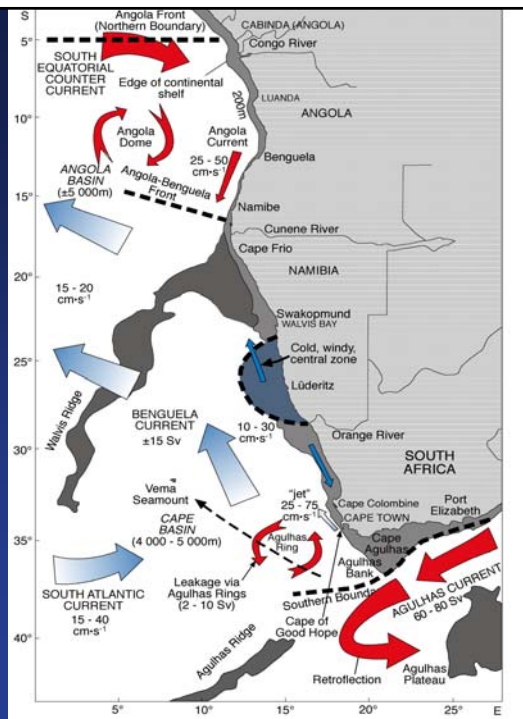
#### CURRENTS AND BOUNDARIES

Angolan Current (warm)

Benguela Current (cold)

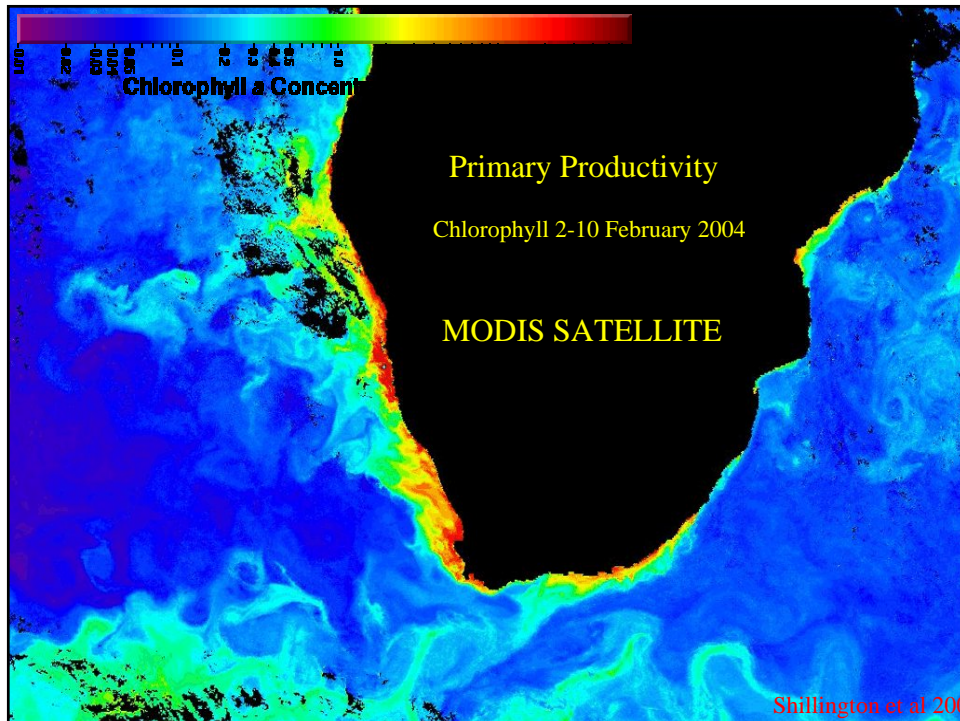
Agulhas Current (warm)

EEZ's of Angola, Namibia and South Africa



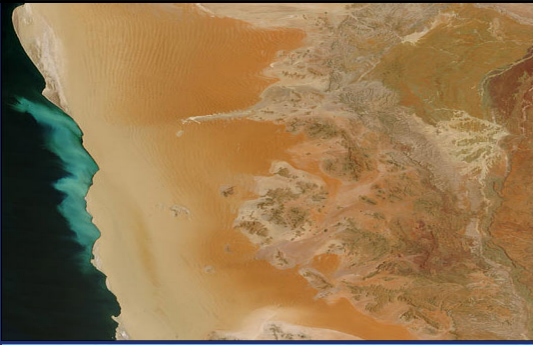
## MARINE RESOURCE UTILISATION

- Commercial fisheries
- Artisanal fisheries
- Diamond mining
- Offshore oil and gas
- Recreational fisheries
- Nature-based tourism



## EXTREME EVENTS

Benguela Nino's  
Harmful Algal Blooms  
Low oxygen  
Sulphur eruptions



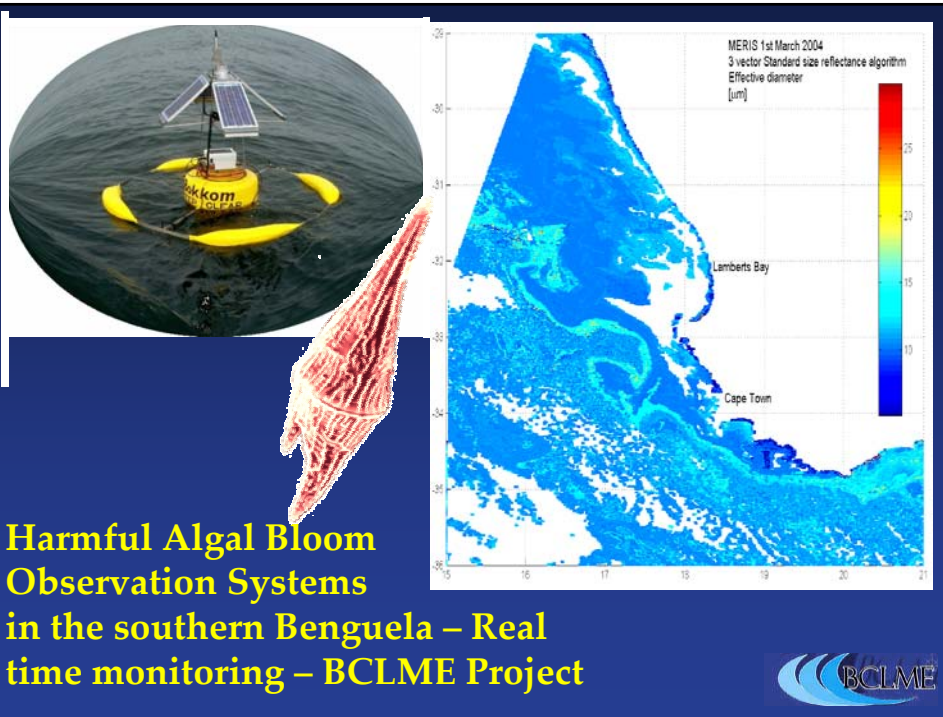
## ENVIRONMENTAL VARIABILITY

- Develop early warning system
- Improve forecasting of extreme events
- Establish baseline data
- Monitor harmful algal blooms
- Assess links to climate change

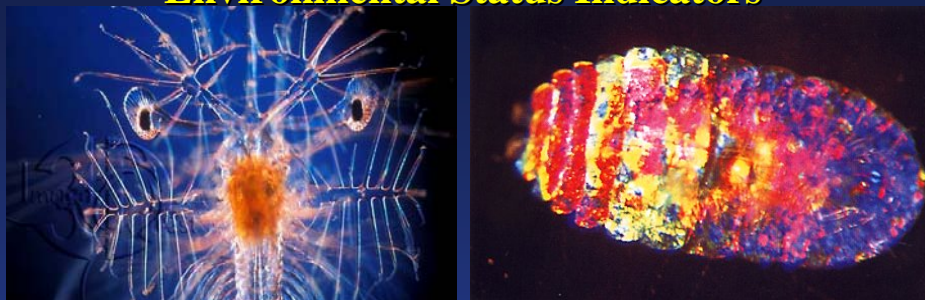


## MARINE BIODIVERSITY

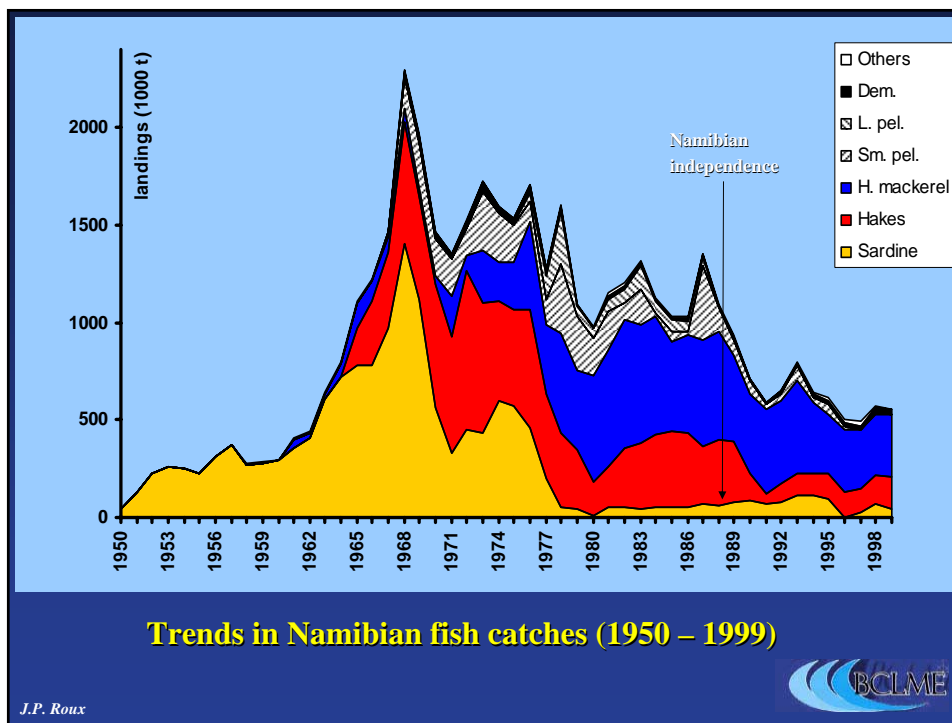
- Map vulnerable species / habitats
- Assess alien species –ballast water
- Conserve marine biodiversity
- Establish marine protected areas



## Benguela Plankton Environmental Status Indicators



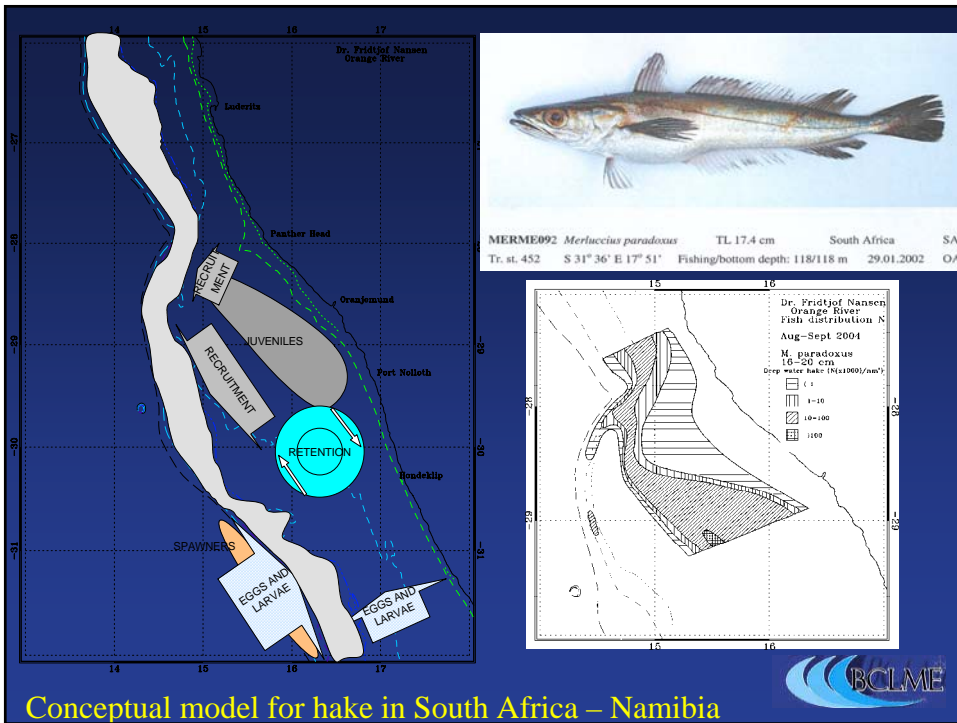
- Regional monitoring lines for zooplankton off South Africa, Namibia and Angola
- Continuous Plankton Recorder (CPR) and Aquashuttle ...deployed in region
- Training (NOAA /Southampton Oceanography)

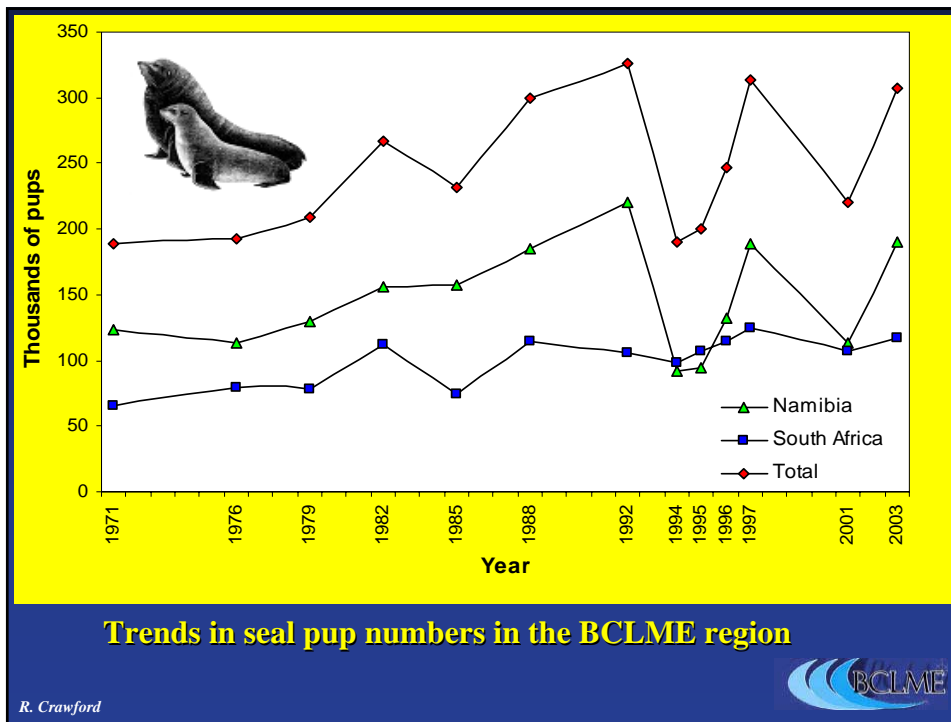




## Ecosystem- Wide Management 2 Key BCLME Projects

- Ecosystem approach to fisheries management (EAF)
- Monitoring of top predators as indicators of ecosystem change









Satellite tagging of Bronze Whaler Shark



## MANAGEMENT OF POLLUTION

- Harmonisation of water quality guidelines
- Regional oil spill contingency plan
- Assessment of land-based sources of marine pollution



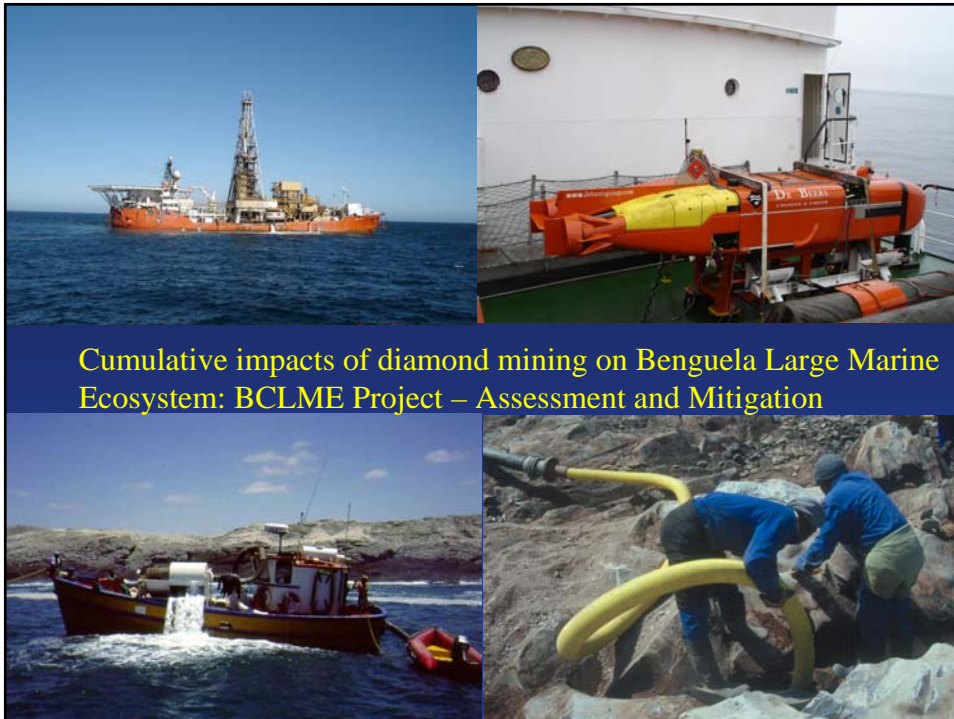
- Transboundary pollution monitoring
- Marine litter programme



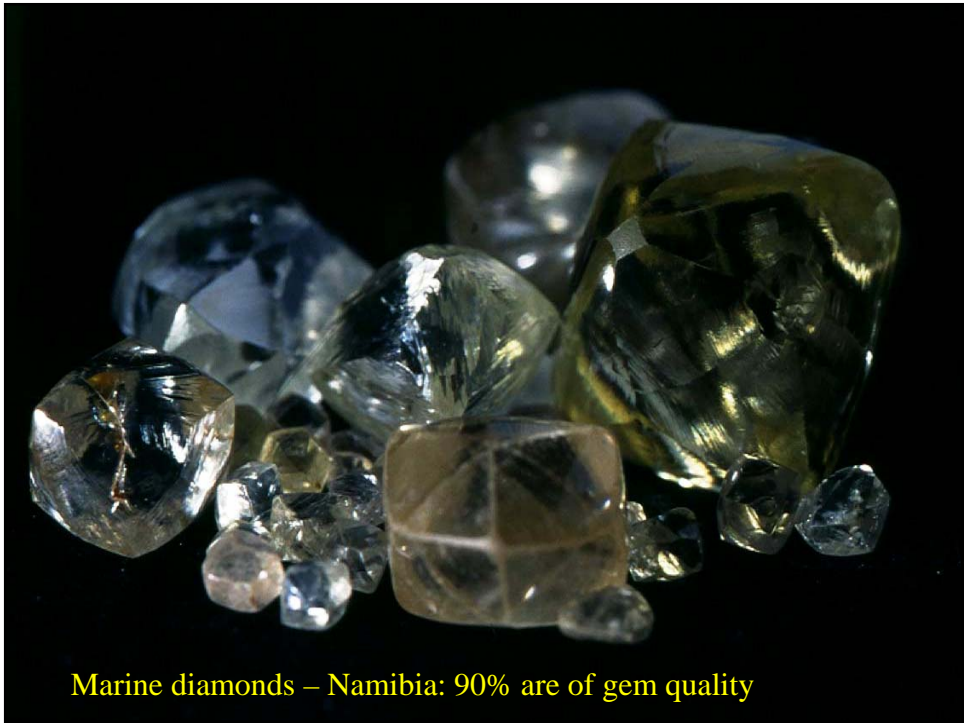
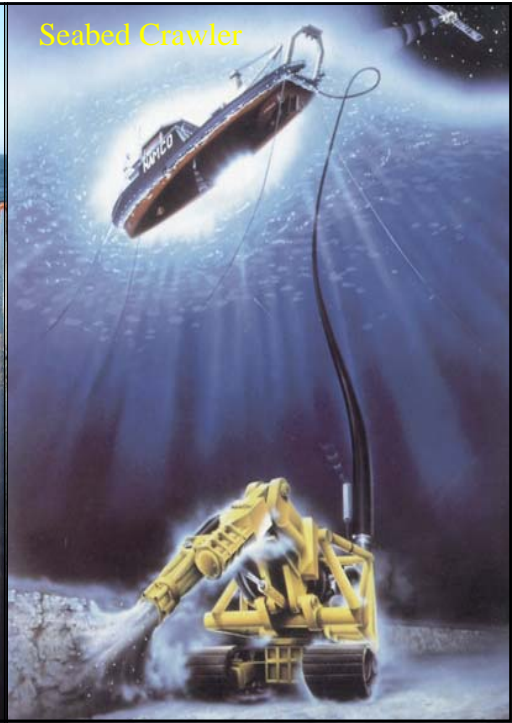
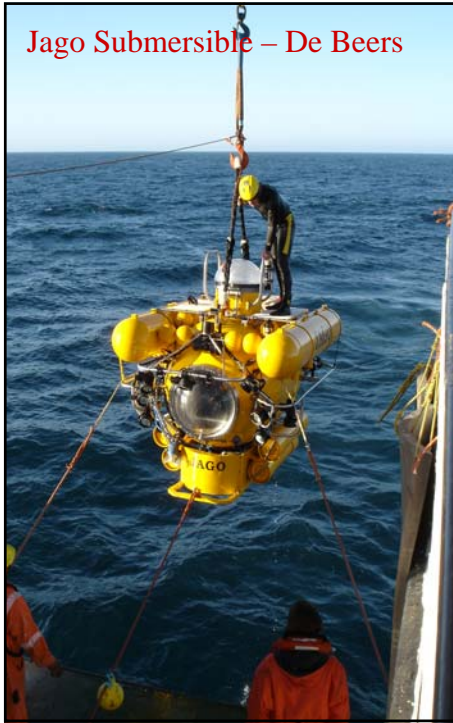
**COASTAL DEGRADATION SHOWING LARGE SCALE IMPACT OF  
DIAMOND MINING NEAR SA-NAMIBIA BOUNDARY**



G. Smith



**Cumulative impacts of diamond mining on Benguela Large Marine  
Ecosystem: BCLME Project – Assessment and Mitigation**





### Development and Implementation of Strategic Plan for Capacity Strengthening



## International Co-operation

- FAO (Ecosystem approach to fisheries –EAF)
- IOC ( Annual consultative meetings, LMEs)
- IOC-GOOS Africa (operational oceanography)
- UNEP (GPA – Pollution, Regional Seas, LMEs)
- NOAA (Global LME’s and consultations)
- GEF IW:LEARN ( LMEs shared experiences and lessons learned )
- Marine science institutes (Norway, France, Germany, USA)



## **Key Regional Instruments and Initiatives**

- SADC Treaty on regional development and integration
- SADC Protocol on Fisheries
- BENEFIT ( partners: Norway - Germany)
- SEAFO (South East Atlantic Fisheries Organisation)
- Monitoring, Control and Surveillance of Fishing Activities ( EU – SADC MCS Programme)
- NEPAD (New Partnership for African Development)



## **Some Key International Instrument**

- UNCLOS (1982) – Law of the Sea
- UNCED (1992) – LME's
- Convention on Biodiversity (1993)
- KYOTO (1995) “Code of Conduct for Responsible Fishing – FAO)
- UN Agreement ‘Straddling and Highly Migratory Fish Stocks (1995)
- UN Millenium Goals (Goal 7 – ensure environment sustainability
- Reykjavik Declaration (2001) “Ecosystem Approach to Fisheries Management”
- WSSD Johannesburg (2002)



## Co-operation with other African LME

- **Guinea Current LME**
  - joint assessment of shared stocks and pollution
  - survey cruises, training , scientific exchange
  - workshops and consultations
- **Canary Current LME**
  - Regional workshop, TDA, consultations
- **Aghulas-Somali Current LME**
  - Regional workshop and consultations



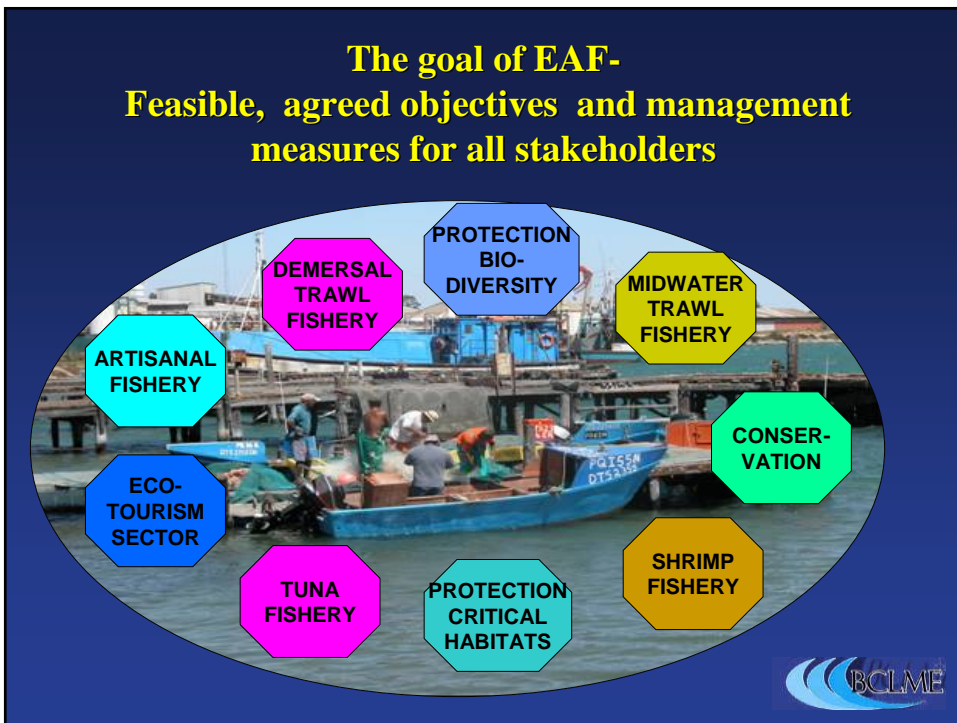
## BENGUELA CURRENT COMMISSION



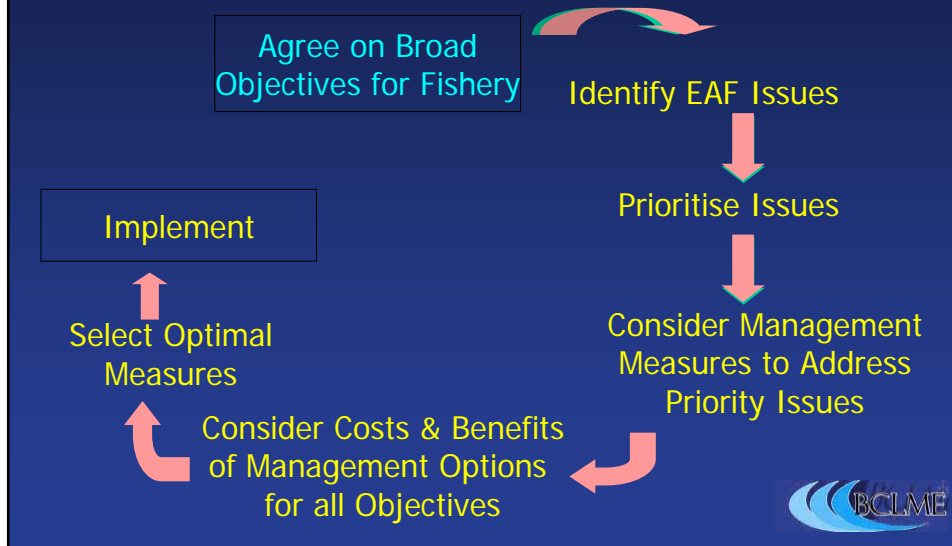
Ecosystem Approaches for Fisheries (EAF) Management in the  
BCLME  
BCLME Project LMR/EAF/03/01



The goal of EAF-  
Feasible, agreed objectives and management  
measures for all stakeholders



## Application of EAF approach FAO



## Assessment of Impacts – EAF

- **Direct Impacts of the Fishery**
  - Target species
  - Bycatch species (including endangered)
  - Impacts on habitat
- **Direct Impacts of the Ecosystem**
  - Environmental variability
  - Regime changes
  - From other human activities
- **Indirect Impacts**
  - Foodchain effects (biological)



## **BCLME EAF Project Objectives**

- i) to investigate the feasibility of EAF management in the BCLME region through examining the existing issues, problems and needs related to EAF; and**
- ii) using the best available scientific and other relevant information, to evaluate different management options for achieving sustainable management of the resources at an ecosystem level.**



## **Project Structure**

- National task groups to enable input from and discussion between stakeholders**
- Science and modelling groups to generate and/or synthesise scientific information to guide consideration of EAF**
- Regional meetings and workshops to enable cooperation and consultation between partner countries**



## Fisheries Considered

Angola	Namibia	South Africa
Demersal trawl	Hakes	Hakes/demersal
Artisanal	Purse seine - small pelagics	Small pelagics
Small pelagics	Midwater trawl - horse mackerel	West coast rock lobster



## Selected Shared Stocks in BCLME

Species	Angola-Namibia	Namibia-South Africa
Deepwater hake		X
Shallow water hake		X
Seabirds and seals	X	X
Kabeljou & other linefish		
Sardine	X	?
Cape horse mackerel	X	?
Large-eye dentex	X	
Deepwater crab	X	X



## Main Elements of the Project

1. Review of implications of existing target-management objectives and strategies (strengths, weaknesses, consequences)
2. Consideration of objectives and changes to management measures & strategies for implementation of EAF (national+regional);
3. Cost-benefit analyses to assist in selection of management options for EAF;
4. Scientific support and information;
5. Towards implementation (decision-making, incentives, research and institutions).



## Progress and Plans

- 2004
  - Meetings of National Task and Science and Modelling Groups to consider gaps and needs.
  - Regional workshop on risk analysis and indicators.
- 2005
  - Preliminary investigations on indicators for EAF.
  - Seven risk analysis workshops in the 3 countries to identify & prioritise EAF issues for selected fisheries.
- 2006
  - Regional workshop - methods for cost-benefit analyses
  - Cost-benefit workshops for all fisheries
  - Studies on incentives, decision-making, indicators
  - Final regional workshop for synthesis and conclusions



## **Project Outputs - Putting it all Together**

- **Identification of most pressing EAF issues in BCLME**
- **Consideration of governance needs and management measures required**
- **Evaluation of costs and benefits of implementation of governance and management for EAF**
- **Facilitating implementation : decision-making, incentives, indicators**
- **Advisory report to BCLME governments**

