

*Climate Change. Overfishing. Pollution. Sustainable Development.* These are just a few of the problems facing resource managers and governments throughout the western Indian Ocean region. The innovative **UNDP/GEF ASCLME Project**, working with its partners and participating countries, offers answers and mechanisms to tackle these and other urgent and pressing problems.

## Introduction

The UNDP/GEF Agulhas and Somali Current Large Marine Ecosystems Project (ASCLME) is active across most of the western Indian Ocean, including the countries of Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa and Tanzania. Supported by a US\$12.2m GEF grant, the Project has succeeded in leveraging over US\$40m in cofinancing through in-country commitments and ongoing contributions from regional and international partners.

## Aims and Objectives

Supporting commitments made in the Millennium Development Goals and at the World Summit on Sustainable Development, the ASCLME Project provides countries with baseline information and ongoing mechanisms to support the **Large Marine Ecosystem** management paradigm.

The “Ecosystem Approach” seeks to manage holistically and place human concerns within the overall management strategy; in short, it aims to achieve maximum benefit without risking damage to the ecosystem’s vital life support services.

In an innovative development, the Project has built national capacity and knowledge through the cooperative compilation of Marine Ecosystem Diagnostic Analyses (MEDAs) by national experts in each of the countries. This comprehensive documentation will pave the way for the compilation of a scientific analysis of the challenges facing the region as a whole; the Transboundary Diagnostic Analysis (TDA). The TDA will include a Causal Chain Analysis which determines the root causes of the problems identified therein. The TDA will in turn inform the Strategic Action Programme (SAP), which sets out a long-term commitment to sustainable management mechanisms through the LME Approach.



These approaches recognise the unique challenges facing each country and the region as a whole, and seek workable solutions that address failures in conventional management methods.

## Long Term Monitoring System

The impacts of Climate Change are likely to hit Africa hardest. Recognising this, the Project has embarked on an ambitious plan to create a network of oceanographic and ocean climate monitoring instrumentation in the region. The network is to be backed by extensive oceanographic research, remotely sensed (satellite) data, and a drive to develop more accurate and finer-scale climate models. Ultimately, these will help decision-makers visualise and monitor the extent and speed with which environmental variability and climate change affect their countries and ecosystem goods and services, helping them to better plan for the future.

## Achievements

The Project has conducted 18 cruises to date, collecting a comprehensive baseline of ecosystem-level data throughout the region (Figure 1).

204 scientists and students have participated in research cruises. A further 31 scientists from the region have attended ASCLME training courses. Training initiatives are vital in the Project’s aim to build regional monitoring and management capacity.

The Project has donated vital oceanographic instrumentation to each of the countries for the purpose of conducting long-term ecosystem monitoring at low cost into the future.

## A Project of Partnerships

The ASCLME Project operates as part of a “family” of 3 GEF-funded projects, which includes the World Bank implemented South West Indian Ocean Fisheries Project (SWIOFP) and the UNEP led Western Indian Ocean Land Based Project (WIO-LaB) which studied land based sources of pollution. All three projects will contribute to the TDA and SAP.

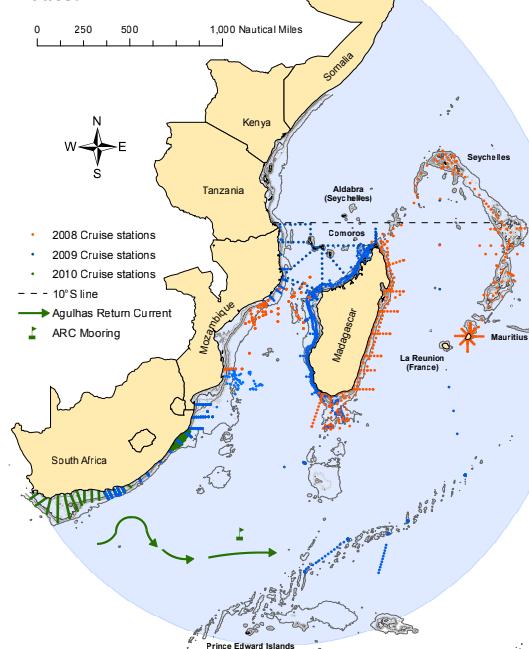
The region already boasts a large number of dedicated NGOs, CBOs and other organisations working in the marine and coastal environment. The Project is actively collaborating with many of them to ensure maximum benefits to the region without duplication of effort.

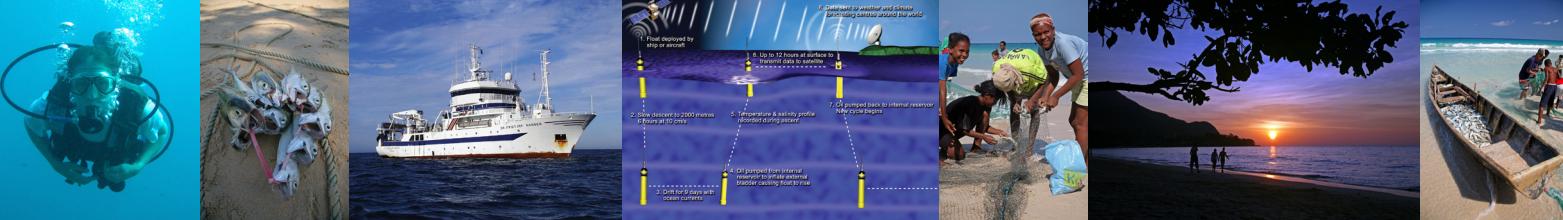
## The ASCLME region supports:

- 4 million tons of fish catches annually;
- US\$943m in annual fisheries revenues;
- The livelihoods of over 56 million people who depend upon marine and coastal resources;
- Tourism linked to healthy marine environments. This accounts for approximately 30-50% of GDP in island states such as Mauritius and Seychelles and is important throughout the region;
- At least 200 species of coral, 11 of mangrove and 12 of seagrass, 1,500 species of fish, 3,000 species of molluscs, 450 species of crabs, 300 species of echinoderm and five of the world’s seven marine turtle species. Overall species composition is enormously rich, exceeding 11,000 species of plants and animals, 60-70% of which are found only in the Indo-Pacific ocean region. Scientists estimate only 50% of the marine species in the region are described.



Figure 1: The ASCLME region and cruise data to date.





The active research cruise programme has attracted international partners such as the United States' National Oceanographic and Atmospheric Administration (NOAA) and the Royal Netherlands Marine Research Institute (NIOZ). These organisations are helping to deploy and maintain sophisticated long term monitoring equipment throughout the region and further enhance regional capacity through joint training activities, access to data and information sharing.

### Involving Local Communities

The ASCLME Project supports efforts to empower local communities to take an informed part in management of the resources upon which they ultimately depend. The Project's efforts in this challenging area are spearheaded by DLIST-ASCLME, which has active demonstration sites in eight western Indian Ocean countries.  
see: <http://www.DLIST-ASCLME.org>

### Science-to-Governance

The Project has realised that a communication barrier often exists between scientists and decision-makers. It is taking steps to address this and ensure that regional scientists work on research topics with a specific aim of informing policy-makers and managers in timeous, focused and understandable formats, and to regularly ask policy-makers what information they require upon which to base sound policy and management decisions. In short, it will demystify science and ensure policy input into the research agenda. This so-called "Science-to-Governance" process requires commitment from both researchers and decision-makers, and we invite both groups to join us in making marine ecosystem research policy-focussed and socio-economically relevant.

### Cost-Benefit Analysis

The LME approach is a significant departure from more traditional management approaches. The Project has comissioned a "Cost-Benefit Analysis" which will weigh up the costs of implementing the LME approach versus the risks of a "business as usual" approach.

### The Future

This phase of the ASCLME Project is due to finish in mid 2011. The Project has built up significant regional and international support and created a tremendous momentum of research and management activities in the region; it is vital this momentum is sustained. Although it is not certain if/when the next round of GEF funding will be activated in the region (unlocking a second phase of the ASCLME Project), the Project is building upon its progress to date through the developing Western Indian Ocean Sustainable

Ecosystem Alliance (WIOSEA), which will act as a regional clearinghouse and coordination body. A key principle of WIOSEA will be to coordinate without undermining the autonomy or responsibility of existing regional organisations and bodies. It will seek to foster stronger partnerships, acquire sustainable funding resources and rally political and social will to effectively implement the LME approach in the WIO region.

With the ultimate goal of preparing governments in the ASCLME region to better manage marine and coastal resources and respond to climate change impacts, the ASCLME Project is at the cutting edge of global efforts to improve the link between science and governance.

### Contacts

Project Director:

[David.Vousden@asclme.org](mailto:David.Vousden@asclme.org)

Policy & Governance Coordinator:

[Magnus.Ngoile@asclme.org](mailto:Magnus.Ngoile@asclme.org)

Tel: +27 46 636 2984 Fax: +27 46 622 6621  
ASCLME House, 18 Somerset Street, Private Bag 1015, Grahamstown, 6140, South Africa.

To learn more, visit our website,

<http://www.asclme.org/>



### Films

The Project has produced two informative films which are available on DVD and YouTube:

*Planning for Change: Managing Marine and Coastal Resources in an Unstable World* (10 min) Available in English, French, Portuguese.

*Rivers of Life, Oceans of Plenty* (26 min) Available in English, French, Portuguese and Kiswahili.

The films explore the challenges of resource management, the benefits of the LME approach as a potential solution to management issues and illustrate activities undertaken by the Project.

<http://www.asclme.org/youtube/>

### Challenges

The continuing threat of **piracy** in the region has prevented the Project from conducting ship-based research in the northern part of the region. To balance this, the Project refocussed its efforts on inshore fisheries and other shore-based activities in the affected area. Piracy also threatens the marine transport industry and economic activities which depend on it (imports/exports).

**Sea level rise** threatens low-lying areas.

**Coastal erosion** from the compounded effects of sea level rise and land use issues threatens many coastal communities.

**Overfishing** threatens food security; unsustainable fishing methods threaten fish stocks, habitats and tourism.

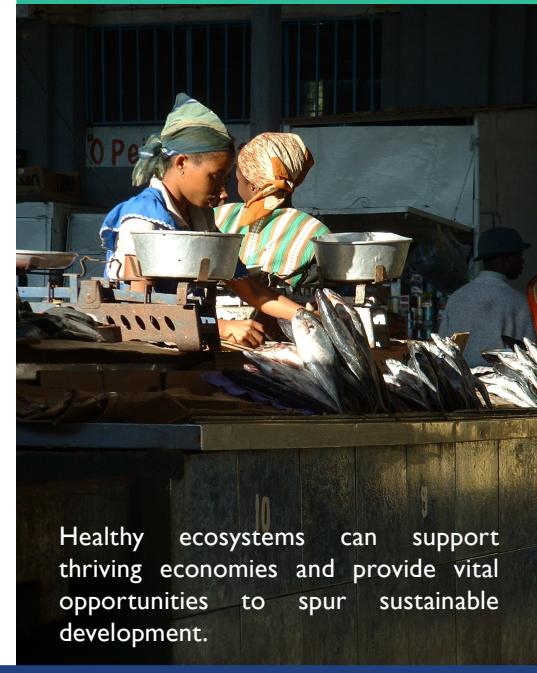
**Biodiversity loss** threatens tourism industry and overall ecosystem health.

**Habitat destruction**, particularly of critical habitats such as mangroves, coral reefs and seagrass beds threatens ecosystem health, fisheries resources and the natural resilience of coasts to severe weather and natural disasters.

**Climate change** poses threats to human health through severe weather events, floods, droughts, heatwaves and disease.

**Salt water innundation** threatens fresh water supplies.

All of these challenges threaten the livelihoods and wellness of coastal communities throughout the region and pose significant challenges to managers and policy-makers. The UNDP/GEF ASCLME Project welcomes the opportunity to work with policy-makers in addressing them.



Healthy ecosystems can support thriving economies and provide vital opportunities to spur sustainable development.