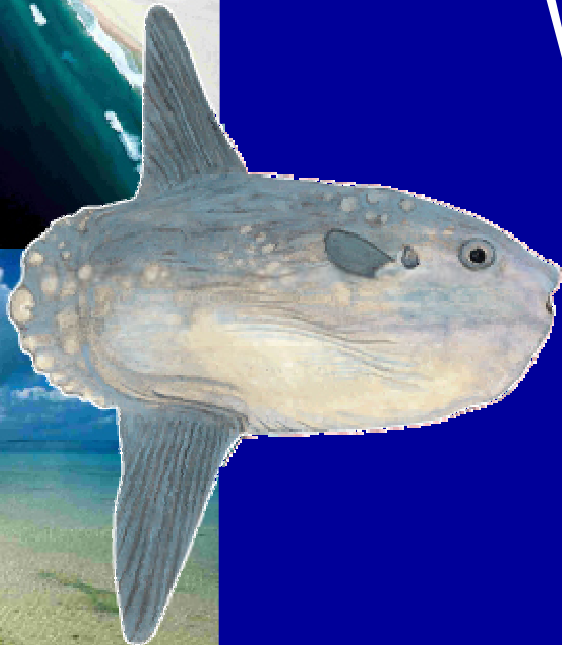


Agulhas and Somali Current Large Marine Ecosystems Project



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Priorities for Large Marine Ecosystems Management and Governance in the Western Indian Ocean



The GEF LME Partnership in the western Indian Ocean consists of three partner projects:

WIOLaB (UNEP): Addressing land-based activities

SWIOFP (World Bank): Southwest Indian Ocean Fisheries Project

ASCLME Project (UNDP): Addressing all other coastal and oceanic activities including offshore ecosystem assessment, coastal livelihoods and community engagement, coastal artisanal and subsistence fisheries, persistent organic pollutants, larval transport, spawning and nursery areas

As with all LME Projects, the primary objectives are the TDA(s) and SAP(s) leading to sustainable governance

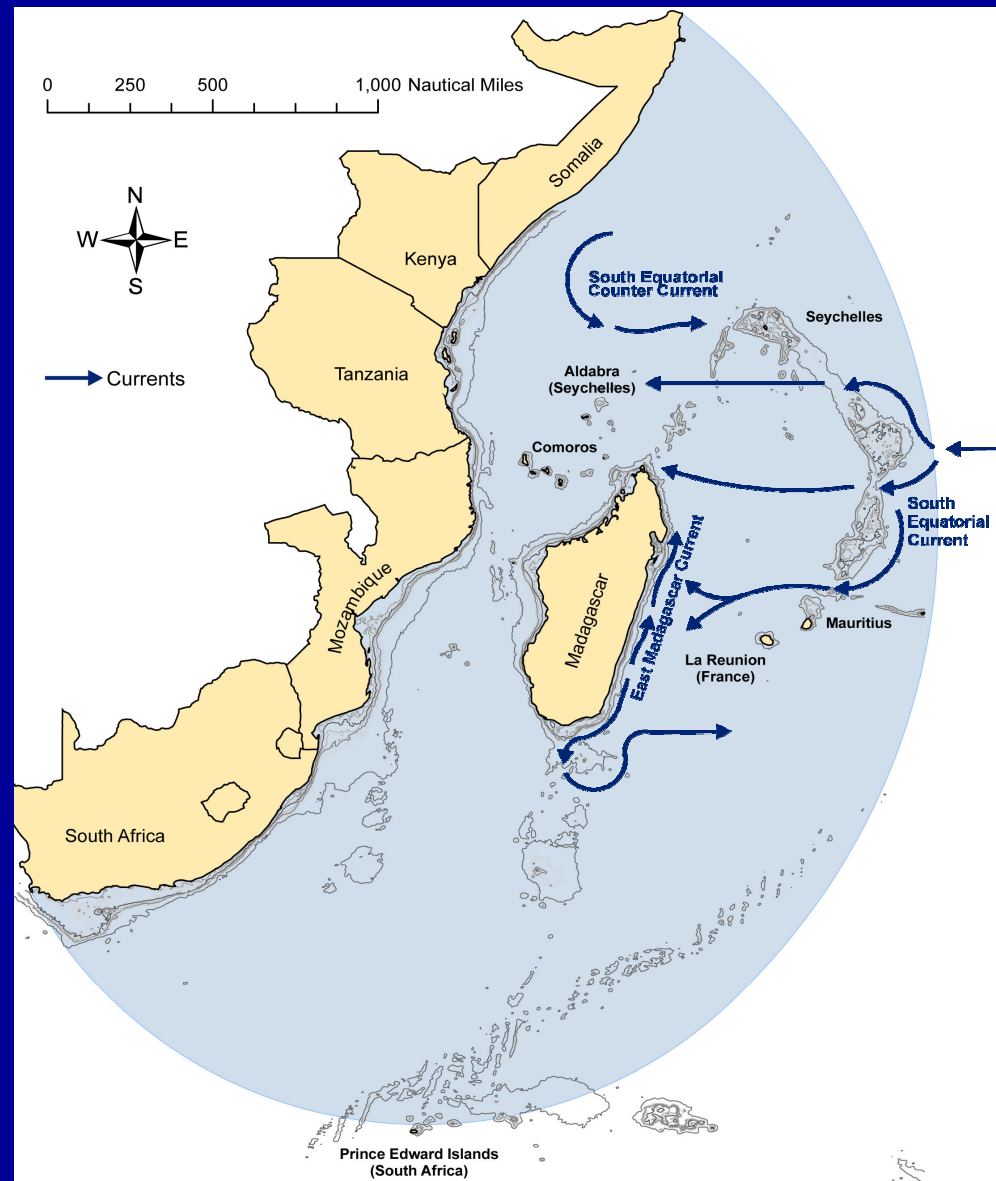
The ASCLME Project Boundaries and Current Systems

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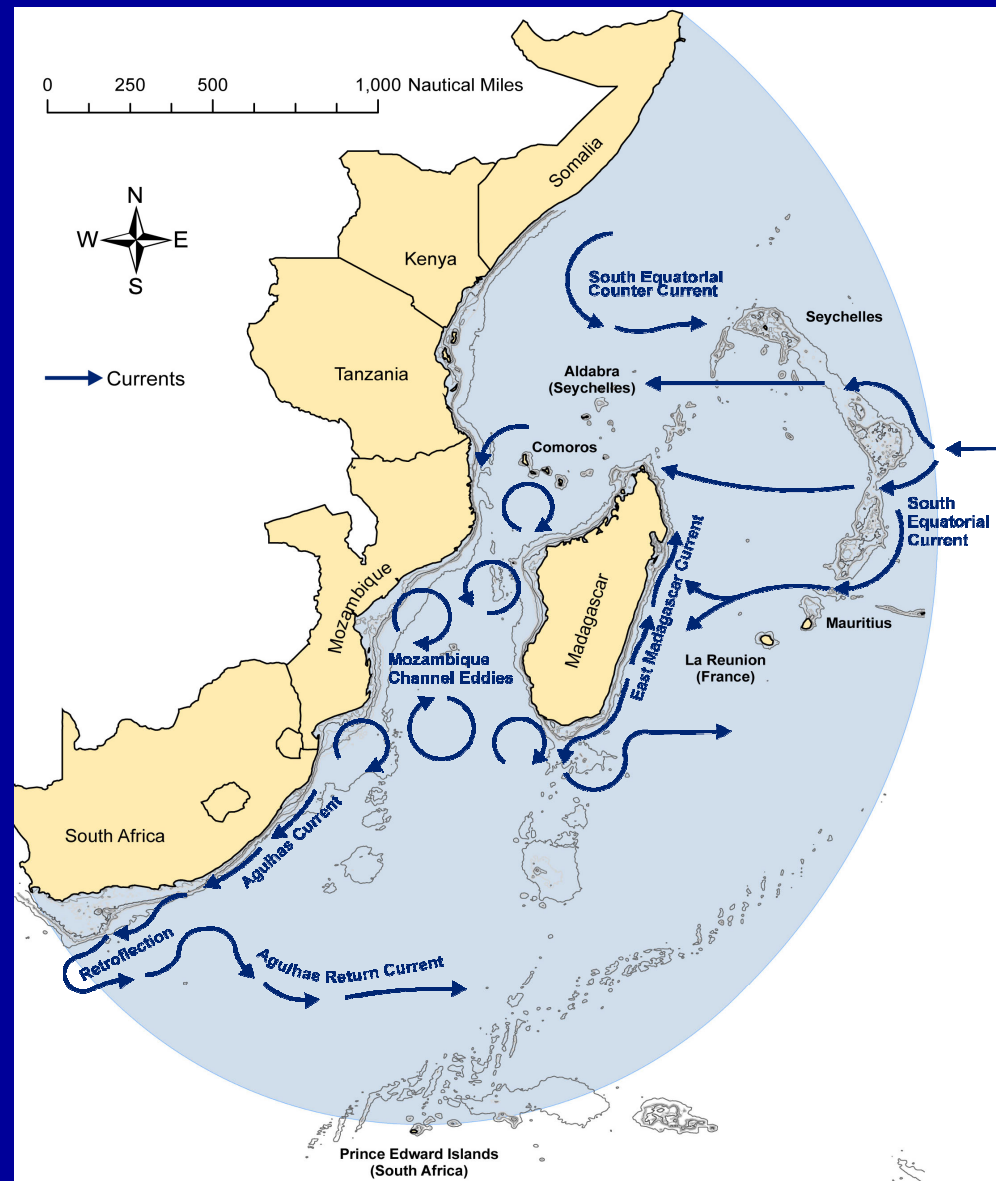
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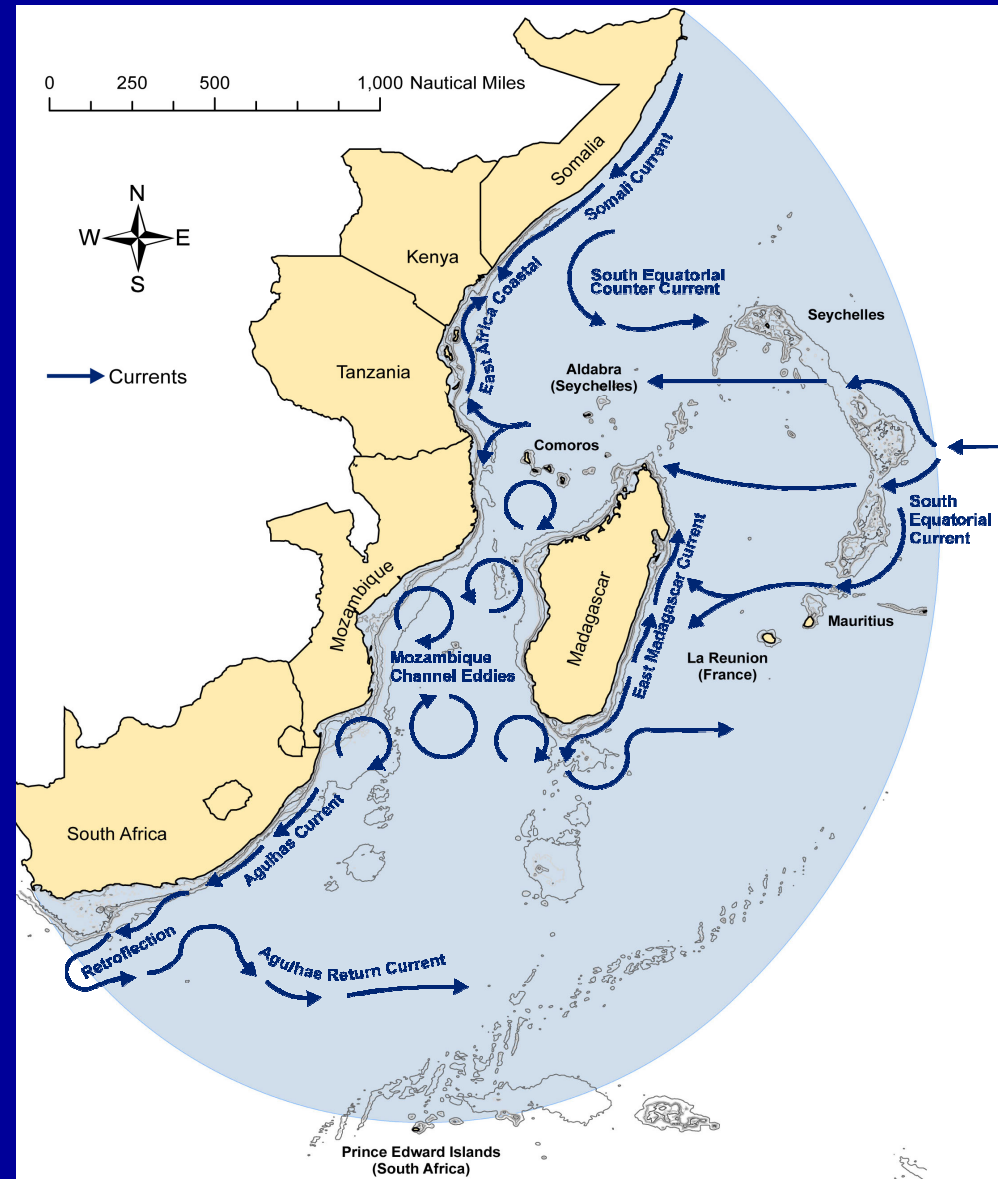
The ASCLME Project Boundaries and Current Systems

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The ASCLME Project Boundaries and Current Systems

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There are two important steps which ASCLME is promoting in terms of management and governance at the ecosystem level:

1. Developing an effective monitoring and early warning mechanism for ecosystem variability and climate change
2. Translating the outputs of this mechanism into policy and management level priorities

Understanding and sustaining LME processes is critical to the understanding and maintenance of climatic stability

The oceans regulate global climate seasonally & geographically

The oceans moderate weather systems at the local and regional level

Even slight disturbances to ocean-atmosphere processes can have significant effects on climate and the rate of climate change

Consequently, understanding and monitoring coastal and ocean ecosystems is essential for mitigating the effects of climate change

Conversely, variations in climatic stability and the ‘knock-on’ effect of climate change will have adverse consequences for LMEs and their ocean-atmosphere linkages. These impacts include:

- Alteration in current regimes
- Change in water temperatures and salinities
- Sea level rise
- Increasing extremes in pH (ocean acidification)
- More frequent and greater storm surges

As a result, entire ecosystems could ‘shift’ in terms of their boundaries and physicochemical/biological characteristics

Essential to identify '**Baselines**' in physicochemical and biological norms for LMES – These baselines are probably already changing faster than we can understand them

Urgent need for continuous monitoring focusing on indicators of climatic variability (ocean-atmosphere) and of LME welfare (modular). i.e. an '**Early Warning**' system

Data should feed into predictive models that are more spatially focused than is currently the case

These predictive models **MUST** be of a sufficiently fine scale and sufficiently populated with reliable data that the results can be used at national and community levels by policy-makers and managers

Reliable and frequently updated data is central to the process of adaptive management

Therefore a sustainable long-term monitoring process that can provide 'early-warning' on changes is essential

This requires commitment in terms of funding and equipment



The Algoa (South Africa)

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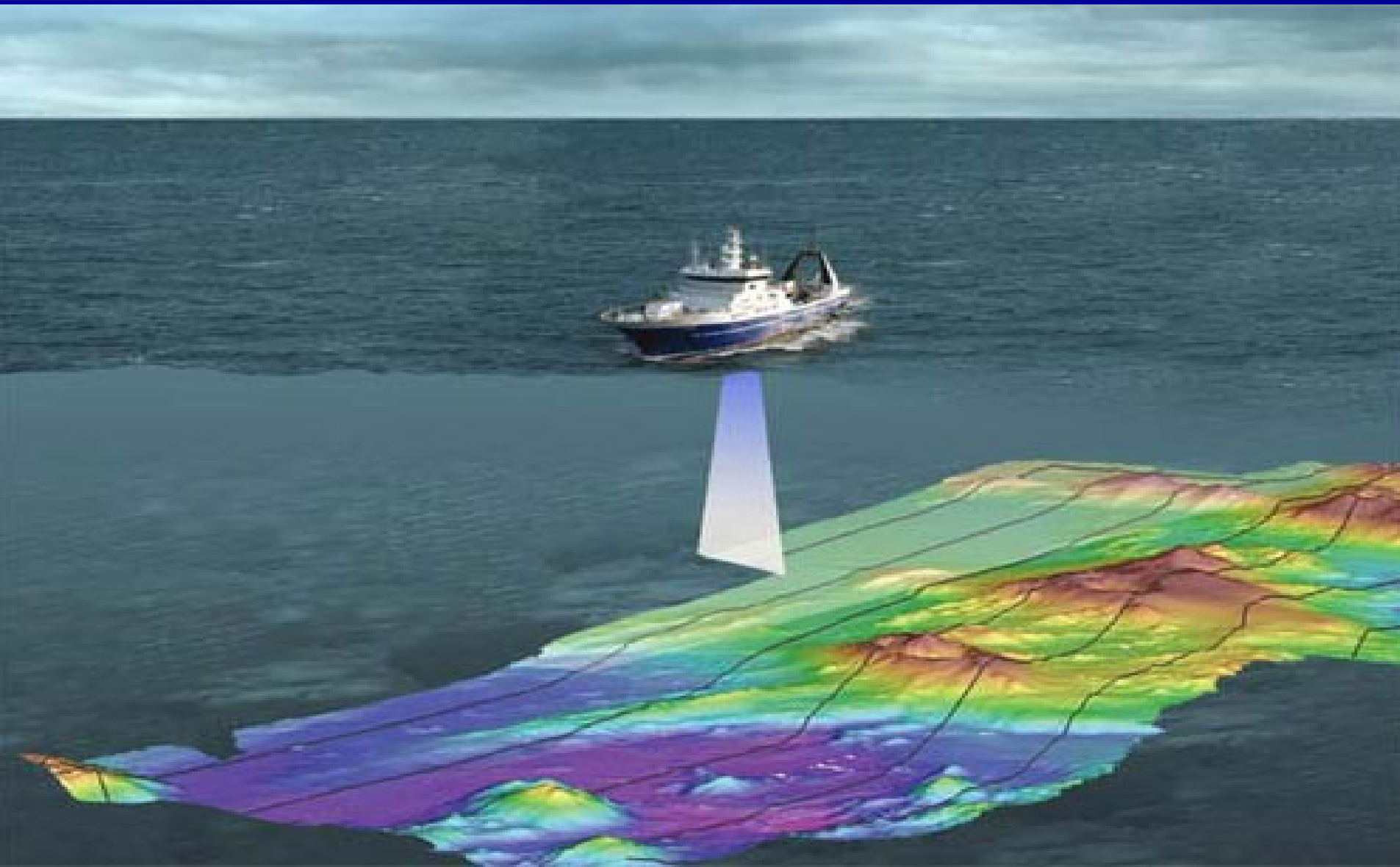
uKwabelane – the new ACEP/ASCLME Inshore Training Vessel (South Africa)

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Multibeam Swath Bathymetry

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Multibeam Swath Bathymetry

3D View of Sodwana Canyons



Inshore

Jesser
Canyon

Reef

Youthful Phase
Canyons

Wright
Canyon

Reef

White Sands
Canyon

Youthful Phase
Canyons

Offshore



Sampling Gear: Multinet (left) and CTD - Conductivity, Temperature and Depth (right)



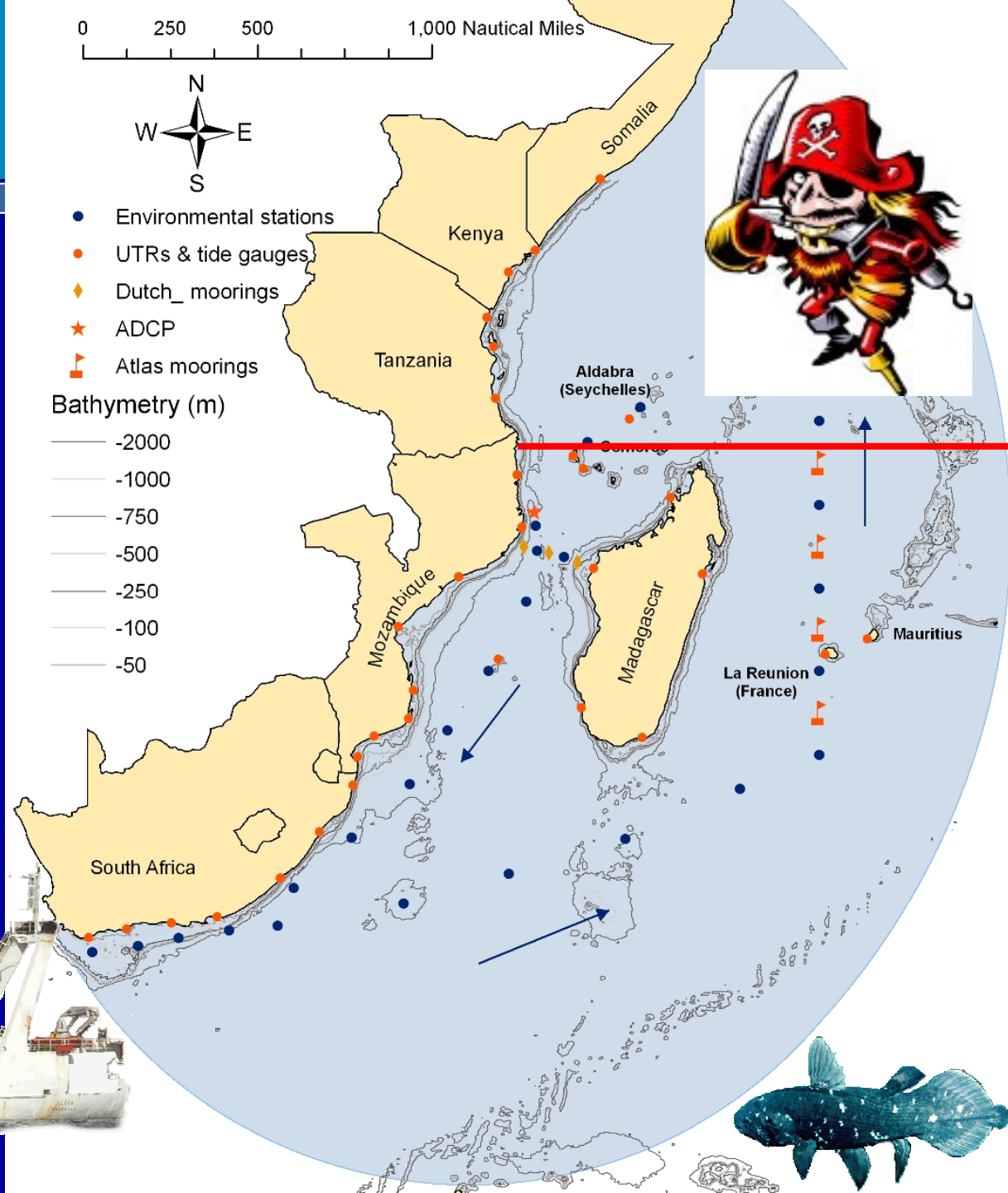
Sampling Gear: Trawling



- ATLAS Moorings
- Argo floats
- Satellite drifters
- ADCP moorings
- UTRs



Long term sampling & instrument maintenance



Coastal Habitat Types: (particularly nursery and spawning areas or those support rare/threatened species)

Coastal Livelihoods Mapping and Assessment: Small-scale, artisanal and subsistence fisheries; mariculture activities; coastal tourism

Invasive Species: (esp. from ballast waters and international transport movements)

Marine Pollution: e.g. shipping discharges, oil/chemical spills, exploration/extraction of natural resources

Capacity Building and Training

A 3-week programme for local scientific trainees (2008 and 2009).
21 scientists now trained to work in Ecosystem Assessment (11
already undertaken extensive cruises and publishing papers)

In-country ecosystem approach training programme customised to
national needs

Communications and Participation

A participatory Communications Strategy and Distance Learning
and Information Sharing Tool (DLIST) for stakeholder
engagement and community involvement

Community level training courses to develop community capacity
to engage in management and governance

The Scientific Challenge:

Reliable scientific data for the purposes of modelling and prediction requires a long-term monitoring process using ‘early-warning’ indicators throughout the LME system (ridge-to-reef)

The Governance Challenges:

Effective Governance and credible Policy requires accurate translation of science (especially predictive science) into a Weight of Evidence (The Precautionary Approach) that countries can use ‘immediately’ to prioritise their adaptation to ecosystem and climatic variability.

Policy makers need to be able to communicate with Scientists (and vice versa)

LME governance mechanisms also need to engage with all sectors (environment, fisheries, foreign affairs, etc) and therefore will tend to require the development of multilateral agreements that may not currently exist

Mechanisms in support of Large Marine Ecosystems Management and Governance in the Western Indian Ocean

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THANK YOU FOR YOUR INTEREST IN THE ASCLME PROJECT
AND IN GEF'S LME WESTERN INDIAN OCEAN PARTNERSHIPS

Please visit the website at www.asclme.org for more information