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Edited by: Rudy van der Elst & Alison Moor
(Contributions by: Bernadine Everett, Sean Fennessy and Rudy van der Elst)

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TRANSMAP
A new initiative to strengthening collaboration in East African marine conservation

Following the impetus given by the 5th World Parks Congress in Durban, the value of Marine Protected Areas (MPAs) as a tool for biodiversity protection and fisheries enhancement is more widely recognised than ever. In particular, the sharing of resources between neighbouring countries is a focus of attention. This fact has brought together a consortium of international experts and institutions with the aim of developing a scientific basis that will support the creation and management of transfrontier Marine Protected Areas in the East African region. ORI is playing a key role in this Consortium, named TRANSMAP.

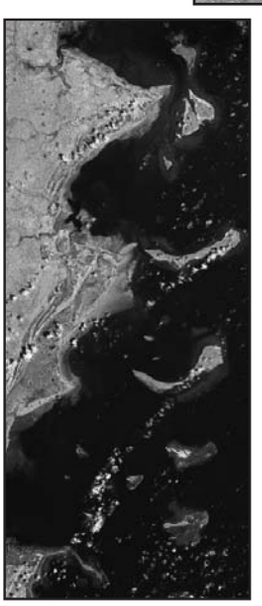
This ambitious project was recently launched at an inaugural meeting in Maputo. Funded by the European Commission, TRANSMAP is a joint initiative between five European and five African institutions. Each institution contributes their particular expertise to the collective goal of generating scientific knowledge to underpin transfrontier MPAs. This relates to the type, size and location of reserves, so as to maintain ecological functioning and create opportunities for sustainable resource-use and associated socio-economic development. This will be achieved through integrating and modelling a range of strategic issues, such as biophysical, socio-economic and governance factors. All the information will be located in a Global Information System (GIS) which will provide the basis for future decision support and zoning strategies.

Although TRANSMAP will generate broad principles that can be applied to various localities, the focus of attention will be the transboundary coastal and marine areas between Tanzania and Mozambique in the north and Mozambique and South Africa in the south. This includes regions such as Mnazi Bay and the Rovuma estuary in Tanzania, the Quirimbas group of coral islands, the Machangulo Peninsula and Inhaca in Mozambique and the St. Lucia region in South Africa.

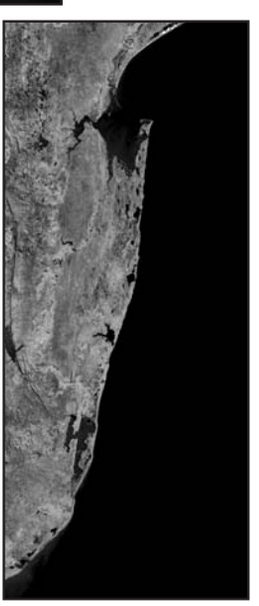
The project is scheduled to be completed in three years and is designed to generate maximum cooperation between the different institutions, leading to collective capacity and wisdom in MPA development.

TRANSMAP represents a potentially significant contribution to the objectives of both the Nairobi Convention and NEPAD. In time this project may well prove to be pivotal in conservation of marine biodiversity in the East African marine ecoregion.

Spectacular Mnazi Bay, Tanzania



The Quirimbas group of coral islands, Mozambique



St Lucia to Maputo Bay

Participating institutions:

African	European
Western Indian Ocean Marine Science Association (WIOMSA, Tanzania)	University of Lisbon (FUL, Portugal) (lead institution)
Institute of Marine Sciences (IMS, Tanzania)	Institute of Applied Technology (ICAT, Portugal)
Centre for Sustainable Development of the Coastal Zone (Mozambique)	Kalmar Institute (HIK, Sweden)
University Eduardo Mondlane (UEM, Mozambique)	World Maritime University (WMU, Sweden)
University of Cape Town (UCT)	Overseas Development Group (ODG, UK)
Oceanographic Research Institute (ORI)	Natural History Museum (NHM, UK)

WIOFISH
A STEP TOWARDS REGIONAL UNDERSTANDING OF SMALL-SCALE FISHERIES IN THE WESTERN INDIAN OCEAN

The Western Indian Ocean (WIO) is a region of vast marine biodiversity and many countries that edge on the WIO have a high level of socio-economic dependence on its coastal and marine resources. These resources are also particularly attractive to distant water fishing fleets which, in association with local resource use, contributes to the importance of the region as a source of marine harvesting.

Despite the significance of the WIO, there is remarkably little regional collaboration with regard to resource management. This situation is due, in part, to the inadequate documentation and representation of fishing practises and landings in international reviews and reports. A preliminary investigation of the annual Food and Agriculture Organisation (FAO) fisheries statistics revealed that only approximately 30% of the real WIO catch was recorded in these reports. The absence of comprehensive harvesting data for all resources, especially for the informal, traditional sectors, precludes an effective management regime for the region and in turn compromises the overall sustainability of resource-use and threatens biodiversity of the region.

In order to address this inadequacy, a database named WIOFish has been developed to collate all available information from small-scale fisheries of the WIO. It was initiated as a component of a NORAD-funded programme to assist WIO countries in implementing the Jakarta Mandate of the Convention on Biological Diversity. The project has involved extensive communication and collaboration between the Oceanographic Research Institute (lead institution), Kenya Marine Fisheries Research Institute, Instituto Nacional de Investigação Pesqueira (Mozambique), Institute of Marine Sciences (Tanzania) and the Seychelles Fishing Authority.

WIOFish will provide a regional overview of inshore fisheries including their problems and specific management needs and enable comparisons of policy and management strategies among the fisheries. It will provide semi-quantifiable indicators of status, and progress in, the management of these fisheries which will increase the understanding of the threats to biodiversity of the WIO resources.

Additionally, it will present a useful forum for addressing fishery stocks that transcend international boundaries and will form a useful scientific base for the SWIO Coastal Fisheries Commission that has been set up by the FAO. Simultaneously it is intended to provide a strong basis for the improvement of fisheries management, the promotion of research and the improvement of fisheries monitoring. WIOFish is designed to be dynamic, live and evolving and will be accessible to a wide spectrum of users via the Internet at www.wiofish.org.

Vehicles on beaches turmoil continues …

Although vehicular access to South Africa's beaches has been restricted for some time, the controversy rages on, with claims and counterclaims relating to loss of tourist income, reduced angling opportunities and environmental impacts. The matter was brought before the National Portfolio Committee of the Department of Environmental Affairs and Tourism, who in turn visited ORI for some technical advice.

Some time ago, Louis Celliers, in collaboration with ORI colleagues and other interested parties, developed a scientific decision support model for rating the use of 4x4 vehicles on the beaches of KwaZulu-Natal. It was intended that the model should be used by the KZN Coastal Management Unit in its evaluation of applications for vehicular access to beaches. The Model established that about 20% of the KwaZulu-Natal coastline might be considered for limited 4x4 access without causing undue environmental damage. However, it was also suggested that there be strict control over vehicles in more sensitive areas, while at least 60% of the coast was defined as vulnerable and absolute "no-go" areas. The methodology, which uses a coastal breakdown that excludes all environmentally sensitive areas from the coastal map, can be applied to any region of South Africa.

The meeting of MPs and other top decision makers, including KwaZulu-Natal's Minister of Arts, Culture and Tourism, Narend Singh, was given a detailed explanation of the model by Rudy van der Elst. Although the matter remains to be resolved, it was significant that ORI was able to present a scientific approach instead of the growing emotion that has surrounded this issue.

Can prawn trawling be less wasteful?

Prawn trawling is globally recognised as a notoriously wasteful fishing operation, with large amounts of unwanted organisms (known as by-catch) being dumped back into the sea once the targeted prawns have been removed. Several other fisheries are wasteful too and it is estimated that as much as 27 million tons of by-catch is wasted each year by fishing operations worldwide. Southern Africa is no exception and the by-catch problem is also relevant in this region.

ORI first commenced an investigation into this problem way back in 1989, when Sean Fennessy studied catches of the Tugela Bank trawlers. As a result, he recommended that the fishery season be shortened and that it be closed in January and February each year, so as to reduce trawl catches of squaretail kob, an important linefish species in the area. Subsequent work indicates that the trawling season could be further reduced, as prawn catches are only commercially viable for about six months of the year. This recommendation still awaits approval by Marine and Coastal Management.

Complementing this ORI research is an investigation into the possible further reduction of trawler impacts by incorporating by-catch reduction devices (BRDs) into trawl nets, so that non-target organisms can escape before the net is hauled onboard. The project is funded by the National Research Foundation and the Research Council of Norway, as part of the South Africa-Norway Programme on Research Co-operation. In order to test the BRDs, Sean conducted the project on the Sofala Bank in Mozambique, where the target species and the by-catch species are identical to those on the Tugela Banks.

In mid-February, a team comprising Sean, ORI's Weyers du Toit and Bjøernar Isaksen from the Norwegian Institute of Marine Science were joined in Beira by Martinho Padera and Leonardo Baltazar from the Instituto Nacional de Investigação Pesqueira in Mozambique. The team had chartered a commercial Spanish trawler, and next spent seven days at sea, testing two BRDs, a grid designed to release sharks and rays, and a square-mesh window designed to enable small fish to escape. First news was good news as preliminary results indicated lower by-catch levels. More feedback will be provided in subsequent issues of The Oricle.

Hard at work processing samples on deck

SAMSS 2005
Southern African Marine Science Symposium 2005

Every three years Southern African marine scientists aggregate to showcase their research progress. SAMSS provides an important forum for different disciplines to interact and an ideal opportunity to hone future research objectives. It also provides stakeholders and user agencies with a valuable opportunity to hear about latest developments in marine science and to thus be equipped with information that may prove important to many of the management issues they have to deal with.

Institutions take turns in hosting SAMSS, and this year the privilege was bestowed on ORI. The original SAMSS was also hosted by ORI, 25 years ago, and held at the then prestigious Lonsdale Hotel, where a total of 54 scientists delivered papers over three full days. Main organiser, Bernadine Everett, predicts that SAMSS 2005 will accommodate over 300 presentations (both oral and posters) in four days and provide a varied and interesting scientific programme. This time the symposium will be at the Elangeni Hotel from 4 – 7 July 2005. Further information is available on www.ori.org.za/samss12.

www.ori.org.za

Check out the revamped ORI website. It has an exciting new look and now includes a handy calculator to determine the weight of a fish from its length. This novel feature should encourage anglers to measure their catch, rather than more stressful weighing of fish which are to be released.

RECENT PUBLICATIONS

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MACDONALD, A.H.H. 2005. The tramp coral, *Stylophora pistillata,* in the south western Indian Ocean. MSc thesis, University of KwaZulu Natal, Durban.

PRADERVAND, P. 2004. Long-term trends in the shore fishery of the Transkei Coast, South Africa. *African Zoology* 39(2): 247-261.

VAN DER ELST, R.P., EVERETT, B.I., JIDDAWI, N., MWATHA, G., AFONSO, P.S. & BOULLE, D. 2005. Fish, fishers and fisheries of the Western Indian Ocean: their diversity and status, a preliminary assessment. *Philosophical Transactions of the Royal Society of London* 363: 1-22.