Kenya in the center of a regional initiative of Turtle Excluder Device Trials to support sustainable fisheries

The Kenya Marine Fisheries Research Institute (KMFRI) has partnered up with the local shrimp fishing industry (ITTICA Limited and ALPHA Limited) to evaluate the Turtle Excluder Device (TED) as an additional component of their trawl nets to save turtles and other large species, mainly sharks and rays, from being accidentally caught in the trawls. Preparations of the trawls and the trials were done between the 7th of April and May 3rd, 2018. The project is financed by the Western Indian Ocean Marine Science Association (WIOMSA) aimed at promoting the reduction on undesired catch in fisheries by assessing and testing innovative technologies in fisheries of the region.

For the project, Michel Nalovic, a shrimp trawl fishing gear expert from French Guiana, was hired to come and help build the TEDs; aluminum grids that would be inserting and tested in the trawls of the Fishing Vessel, Roberto. The F/V Roberto was availed by Mr. Basta Alessandro, proprietor of ITTICA Limited. In his statement during the closing meeting Mr. Basta said that ‘Anything we can do to help the administration to achieve their sustainable development objectives is a plus for us, and we don’t eat the turtles, so it’s good by me if we can get gear that works on turtles without reducing production’.

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The design team at SECCO did a great job manufacturing the TEDs using specifications provided by the National Oceanographic and Atmospheric Agency (NOAA) of the USA. With this properly designed gear KMFRI was able to evaluate the technology to see if it would reduce production of the target prawns and fish, while avoiding the capture of sea turtles. The preliminary results of the at sea experiment show that the TED does not reduce the catch of shrimp and fish while it has the potential to completely eliminate the capture of large marine fauna such as turtles, sharks and rays.

Dr. Kimani, the Assistant Director in charge of Marine Fisheries Research at KMFRI and responsible for the Kenya TED project, said that the benefits of the programme were designed to be multi-faceted. “Kenya now has gained expertise to build our own quality TEDs locally, and it has been demonstrated that TEDs can be used without any loss of target catch, while at the same time training one of our researchers, Mr. Rashid Anam to conduct experiments of this type at sea. The reduction of large sharks and rays potentially improves fishing efficiency, by reducing the weight in the trawl net as well as the sorting time on deck. KMFRI has also reinforced our link with industry on a project that could be beneficial to more than Kenya in the WIO region. Indeed, the global market landscape is changing, consumers are increasingly leaning towards sustainable products. The EU TED report available at www.raporttedeu.com shows that the EU may soon be moving towards an import ban on tropical shrimp not captured with TEDs like the US did 30 or 50 years ago. With this project our industry stays on the cutting edge of developing its blue economy and could be a model in the region.”

An example of a trawl catch using a TED that reduces the catch of rays, and without use of a TED with some rays in the catch (Photo credit: Michel Nalovic)

Mr. Rashid Anam (KMFRI and Vessel crew) with the new TED mounted on the trawl net (Photo credit: Michel Nalovic)

Uncovering ocean currents off Madagascar.
By Juliano Dani Ramanantsoa

Every year WIOMSA disperses Marine Grants (MARG Grants I, II and III) to researchers in the Western Indian Ocean region. The MARG Programme covers all subject areas of marine science and technology. The WIOMSA Newsbrief provides a platform for MARG grantees to present main highlights of their projects. In this edition, we feature an article by Juliano Ramanantsoa

A new coastal current called the Southwest Madagascar Coastal Current (SMACC), has been discovered. This coastal current flows along the southwestern coast of Madagascar toward the south and is a warm poleward ocean. The SMACC is a rare example of a subtropical surface current flowing opposite to the dominant winds off the western coast of a continent or a large island, like Madagascar.

SMACC’s average length is about 500 kilometers and its average width ranges between 50 and 100 kilometers. It extends from the surface to a depth of about 150 meters upstream and about 70 meters downstream. The SMACC extends from 22°S (upstream) to 26.4°S (downstream). The water masses of the SMACC have high salinities characteristic of Subtropical Surface Waters.

Driven by the winds, the SMACC flows faster in summer and is reduced in winter, but its average speed is 20 centimeters per second. Its average volume of transport is about 1.3 Sverdrup (1 million cubic meters per second) with a mean summer maximum of 2.1 Sverdrup.

The SMACC has a downstream impact on the upwelling system in the south of Madagascar which is a physical process inducing local fertilization. During recent work on upwelling in the south of Madagascar (which nourishes marine wildlife and fisheries off the coast), it was discovered that the upwelling appears to be primarily wind-driven and is influenced by a poleward eastern boundary flow coming
from the Mozambique Channel. It was found that the intrusion of warm waters from the Mozambique Channel, which is the SMACC, could reduce the upwelling surface signature in the south of Madagascar during the austral summer season [Ramanantsoa et al., 2018a]. Intensification of wind stress during this season favours the intrusion of the SMACC toward the upwelling system and influences the phytoplankton response associated with that upwelling [Ramanantsoa et al., 2018b].

A previous study [Zink et al., 2015] compared Sea Surface Temperature off Toliara (Madagascar), where the SMACC flows, and the Sea Surface Temperature of the Agulhas Current core, and found a strong correlation between Sea Surface Temperatures over 334 years using a paleoclimate approach. This suggests that the variability of the SMACC also has a significant influence on variability of the Agulhas Current.

The SMACC has an impact on the local fisheries and larval transport patterns, as well as connectivity with the Agulhas Current, affecting the returning branch of the global overturning circulation.

The SMACC has been published in Geophysical Research Letters (doi: https://doi.org/10.1002/2017GL075900) and has been well received nationally (South Africa) and around the world through the media platforms (https://eos.org/research-spotlights/scientists-discover-new-ocean-current-off-madagascar - https://www.news24.com/Green/News/discovery-of-new-ocean-current-personal-for-csir-researcher-20180409).

**Related Literature:**


Dugong found Stranded in Pemba Bay- are they back in Northern Mozambique? What role do Marine Protected Areas Play for Dugongs? By Almeida Guissamulo\textsuperscript{1,2} & Salomão Bandeira\textsuperscript{2}

Are they back 50 years later?

Unexpectedly, on March 10th 2018, a 2.5 to 3 m female dugong was found stranded dead on one of the most popular beaches of Pemba Bay - The Wimbi Beach. People, including several youngsters, flocked to the scene to get their first ever look at a dugong. This stranding is the first physical record of dugong occurrence in Pemba Bay since prior to 1970, when they were known to be abundant (Hughes 1971). This record extends our knowledge of the contemporary distribution of dugongs to the entire coast of Mozambique.

Abundant till 70’s!

Dugongs were also common in 1968 in Angoche and Mozambique Island (south Nampula), where they were captured in gillnets with a high mortality rate. Over the last 40 years, dugongs have also not been seen in this region.

Introduction to Dugong distribution in Mozambique and the WIO

Although a sad event, this stranding record at Pemba Bay shows that dugongs are still surviving in the highly fished coastal waters of northern Mozambique.

The largest WIO dugong population is located at the greater Bazaruto Archipelago Region (central Mozambique) with around 300 dugongs, with other small assemblages still observed around Massinga-Zavora region and the Inhaca and Ponta do Ouro Partial Marine Reserve in the extreme south of the country (see also Fernando et al., 2014).

Outside Mozambique there are a few recent observations of dugongs. Aerial surveys found two dugongs in Kenya. Dugongs appear to occur in small numbers on the northern coast of Madagascar, and at Pemba Island (Zanzibar, Tanzania), where questionnaire surveys resulted in confirmation of at least one dugong caught by fishers.

Potential role of MPAs in Dugong survival

Currently, the coast of Cabo Delgado is experiencing rapid change in terms of marine spatial use, due to the discovery of gas fields, but also from the increase in population and tourism. The appearance of this dugong signals the need to safeguard critical habitats such as seagrass beds and related fisheries, mangroves forests and coral reefs. Documenting preferred dugong habitats, their food such as seagrass \textit{Halodule uninervis} and \textit{Halophila ovalis}, as well as known feeding areas (easily spotted at low spring tide by feeding tracks left in those areas), and

\textsuperscript{1} Natural History Museum, Universidade Eduardo Mondlane, Maputo 0000, Mozambique
\textsuperscript{2} Department of Biological Sciences, Universidade Eduardo Mondlane, Maputo 0000, Mozambique
The 4th International Symposium on “The effects of climate change on the world’s oceans (ECCWO)” was held in Washington DC, USA, and brought together more than 600 scientists from all over the world. The ECCWO symposium series was launched in 2008 by the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES) and the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) to address the urgent need for information on changing oceans.

The theme of this year’s conference was “Advancing understanding and responses to changing oceans”. The conference had a full week of plenary talks and a total of 18 separate sessions. The sessions covered topics such as “The deep ocean under climate change”, “Management and conservation of species on the move”, “Ocean extremes and their impact on marine ecosystems”, “Vulnerability and adaption of marine socio-ecological systems to climate change” and “Fisheries and aquaculture in the face of climate change”. WIOMSA was represented at the conference by Emma Forsberg, the Climate Change Coordinator.

Emerging MPAs such as the Quirimbas National Park (gazetted in 2003) and existing conservation measures promoted by private groups such as around Vamizi Island and in the northern Palma region by the Civil Society Organization called AMA, may factor in the protection of the dugongs in the region. The expected no fishing areas around gas field installations and pipe perimeters may also support a possible increase in dugong numbers.

The lunch events included:
- “Oh the places you’ll go: Lessons for early career professionals”; a professional development event for growth of the next generation of scientists that was hosted by the Women’s Aquatic Network (WAN). The focus of the event was career paths, lessons learnt and networking.
- A presentation and interactive workshop with COMPASS (Communication Partnership for Science and the Sea) on “Communicating science about the effects of climate change on the world’s oceans” whose aim was to help participants to share what they do, what they know and why it matters in clear and lively terms; that is, helping to find the relevance of what you do for the audience you want to reach.
- Benchmarks for ecosystem assessments: Input on indicators for practical ecosystem-based fishery management; a panel and discussion to share information and get input on the development and application of indicators in ecosystem-based fisheries management that was hosted by Lenfest Ocean Program and Commonwealth Scientific and Industrial Research Organization (CSIRO).
- Ocean assessment in the Sixth assessment cycle (AR6) of the Intergovernmental Panel on Climate change (IPCC) session that was hosted by IPCC. As part of AR6, the IPCC is producing three special reports: Ocean and Cryosphere in a changing climate (SROCC), Global warming of 1.5°C; and Climate change and Land, as well as the main Working Group Assessment reports. This session provided an overview of IPCC and AR6 reports.

The evening events included:
- A welcome reception.
- Norway – COMPASS reception; which highlighted the Nansen Legacy Initiative and the importance of science communication.
- A poster session combined with networking opportunities.

Key Conference highlights

Highlights from the conference included a keynote presentation by Philippe Cousteau who emphasized the importance of growing our ocean leadership. He gave three important conclusions on the topic:

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Cited bibliography:


Pre-conference workshops and special events during the conference week

Before the official start of the conference, 11 different workshops took place on topics such as “Communicating and responding to climate change”, “Climate change adaption of fisheries and aquaculture: examples of field projects supporting countries and communities” and “Climate change and fishing communities: interactions with environmental conservation, sustainable livelihoods and food security”. In addition to these, there were also opportunities to attend both lunch and evening events during the conference week.

The evening events included:
- A welcome reception.
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- A poster session combined with networking opportunities.

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We must:
1. Know our audience to grow our audience;
2. Be engaging, people want to connect with people, not just charismatic animals;
3. Give people hope that change can happen, don’t just focus on the “doom & gloom”.

Another highlight was a panel discussion consisting of both scientists/researchers and journalists focusing on “What people really want to know about oceans in a changing climate”. This session highlighted the importance of good science communication, the importance of building a bridge between research results and delivering the results to policy makers and the general public (What do people want to know and how to share our results in an understandable way?).

On the third day of the conference, Professor Gretta Pecl from the Centre for marine socio-ecology, Tasmania, Australia delivered a keynote presentation on climate-driven species redistribution in marine coastal systems. Professor Pecl said that 25-85% of species are already shifting; the exact percentage depends on which area you are looking at. This is not something that is about to happen, it is already happening. Also, not all species can shift, some can only adapt or die.

Why do these shifts in distribution matter? Because they, for example, affect food security, human health, livelihoods, human culture, ecosystem structure and function, and feedbacks to the climate system (e.g. mangroves).

Professor Pecl also pointed out something really important: species on the move interact with almost all of the sustainable development goals (SDGs), however, they are not considered in any of the SDGs.

Ryan Carnegie talked on Managing marine aquaculture health in a changing world. The key message from the talk was that overall, global aquaculture production is increasing and around 50% of this is marine. Global change may increase risks for aquaculture production. Main challenges for aquaculture health management are: limited understanding of pathogen biology; environmental influences - we don't understand them all and how they affect aquaculture; anthropogenic stressors - limited knowledge on how they affect aquaculture; uncertain pathogen distributions and diversity; and how to apply new genetic technologies. To secure future success in aquaculture production these areas of focus are needed: maintaining broad expertise; capacity for experimental research; and societal commitment.

Overall this conference had a broad agenda with various topics related to climate change effects on the world’s oceans. The conference offered excellent networking opportunities between scientists from all around the world. This is an important forum to share knowledge and inspire each other to continue our important work to keep increasing the understanding and responses to changing oceans.

Authors Workshops held for the Regional MPA and Critical Habitats Outlooks for the Western Indian Ocean Region

Since a scoping workshop that was held in Seychelles in 2017 to develop a process for reviewing the status of critical habitats and Marine Protected Areas (MPAs) in the Western Indian Ocean (WIO) region (WIOOMSA Newsbrief Volume 22 No 2), the Nairobi Convention and WIOMSA have jointly held a series of meetings to further the development of outlooks on MPAs and Critical Habitats of the WIO. These Outlooks will support governments of the WIO region in addressing the Sustainable Developments Goals (SDGs) and the Aichi targets. The meetings have involved the editors and the authors who are involved in writing the outlooks and other experts from both WIOMSA and UNEP, who are providing technical support to the process. It is expected that once complete, these comprehensive outlooks will provide the baselines which the Contracting Parties to the Nairobi Convention can use in reporting on progress and provide options for meeting global obligations to the SDGs and the Aichi targets.

An authors’ meeting for the MPAs outlook was held in Nosy Be, Madagascar on the 4-5 April 2018 followed by a meeting with the Focal Points of the Nairobi Convention to report on progress on 6-7 April 2018. The authors meeting for the Critical Habitats Outlook was held in Mombasa Kenya on the 20-22 June 2018.
The MPA Outlook will establish a comprehensive baseline on all MPAs (formal and informal) within the waters (EEZs) of the Contracting Parties to the Nairobi Convention, collate details on all aspects of the MPAs of the region, source and develop fine-scale geo-referenced maps of all MPAs, and conduct a broad review of MPA management effectiveness across the region. The Critical Habitats Outlook will establish baselines on the extent and location of critical marine habitats across the region, assess the extent of protection of these habitats, identify the habitats most in need of increased protection, where this protection would be most effective in terms of conservation of the habitat and the species they support, and define and develop an assessment and monitoring framework using relevant indicators to track progress. Part of the outlook development process is to establish a repository of MPA and critical habitat information in the form of a database. Both outlooks are also assessing the potential impact of large scale developments on MPAs and critical habitats. A dashboard will also be developed that will enable the countries to monitor progress.

The MPA Outlook is at an advanced stages of production, currently undergoing peer review and national validation through the Nairobi Convention mechanism. It will be launched at the 9th Conference of Parties of the Nairobi Convention in August 2018. The authors of the Critical Habitats Outlook have just started the drafting process and it is expected that the product will be launched in November 2018. The Critical Habitats and the MPA Outlooks will be used as the basis for discussions with the governments of the WIO region on the suitable options for enhancing the protection of critical habitats and increasing the spatial coverage and representativity of MPAs and other effective conservation measures (OECMs) based on national priorities. These discussions will in turn form the foundation of a third ‘Recommendations Outlook.’ The outlooks will identify regionally important areas that could be jointly managed and also build a case for the potential socio-economic benefits of managing areas beyond national jurisdiction.

WILDOCEANS OCEAN STEWARDS  By Summer Newton & Nikki Chapman

Through its Ocean Stewards Initiative, WILDOCEANS aims to nurture a new generation of young minds that heed the call of the ocean and pursue career paths focused on marine science. Now in its fourth year, the Ocean Stewards project harmonizes academic and personal growth with transformation and innovation. Since starting in 2015, the Ocean Stewards fellowship has grown to include 69 third year, honours and masters students from 5 universities across South Africa.

The project is being implemented in partnership with the African Coelacanth Ecosystem Programme (ACEP), which is funded by the National Research Foundation (NRF), and is also supported by Grindrod and a number of other partners including Ezemvelo KZN Wildlife, the South African Institute of African Biodiversity (SAIAB), the South African National Biodiversity Institute (SANBI), the South African Environmental Observation Network (SAEON), the University of Kwa-Zulu Natal (UKZN), University of Zululand (UNIZUL), the Nelson Mandela University (NMU), Department of Environmental Affairs (DEA) and the KZN Sharks Board. The project provides support and mentorship to emerging marine science students and grants them a platform to engage with marine communicators, managers, educators and other industry representatives in dedicated learning sessions. Students are also involved in academic symposia, guiding them on their path to becoming career scientists and well-rounded researchers.

Dr Shael Harris and WILDOCEANS Ocean Steward Gwayise Zodidi observing their freshly obtained plankton sample during the 2017 Spatial Solutions research cruise on board conservation research vessel Angra Pequena.
A central component the Ocean Steward experience is the opportunity to participate in offshore research cruises aboard RV Angra Pequena, using the ACEP research (equipment) platform, working alongside field scientists, during which they are exposed to different sampling techniques and equipment. WILD OCEANS Ocean Stewards have been involved in two ACEP research initiatives, namely the ACEP Biodiversity Surrogacy and the ACEP Spatial Solutions projects. Both of these ventures involve the investigation of biodiversity patterns, and the factors that affect them, in reef and unconsolidated sediment habitats from 30-150m in depth off South Africa’s East Coast; what is known as the mesophotic zone. The foundations have also been set for the new ACEP Canyon Connections research expeditions, taking place from 2018 to 2020. Some of the activities these emerging scientists are involved with include CTD measurements of the water column, plankton net tows for fish larvae and zooplankton, Baited Remote Underwater Video (BRUV) sampling for benthic fish communities, ‘Van veen’ sediment sampling for benthic infauna, and Remotely Operated Video (ROV) transects to survey the sea-floor benthic communities, yielding the first scientific images of the seafloor in the Natal Bioregion at depths greater than 40m. The data gathered on these ACEP research cruises are of vital importance to assist in conservation planning and MPA expansion in South Africa, and the WILD OCEANS Ocean Stewards get to play their part in this process. Additional to this experience, the project scientists also provide students with on-board sessions covering invertebrate and fish identification, ecosystem classification, data and image management as well as learning to effectively illustrate the worth of the ocean through science communication.

The ability for South Africa to deliver sustainable growth for a “blue economy” will depend not only on scientific knowledge from established scientists, but also on ensuring that future capacity for offshore marine science is fostered across the country, traversing demographic and fiscal barriers. This allows emerging challenges to be dealt with in a holistic manner that sees citizens as part of the greater ocean ecosystem, and not merely as antagonists. The Ocean Stewards project drives home this message through inspiring young marine scientists engaging in research relevant to a developing ocean economy, and speaking to the common goal of a sustainable future for all South Africans.
Over the last 20 years, WIOMSA has become the single most important convening platform for marine science and management in the WIO region. Every two years, scientists and policy makers within and outside the region meet to share knowledge and experience during the WIOMSA Symposium. It is an exciting never-to-miss event in for region. Apart from the WIOMSA Symposium, WIOMSA also offers individual research grants and conference travel support grants through the Marine Research Grants (MARG) Programme. Several publications (academic and non-academic) have been made possible through this – a proud regional initiative.

WIOMSA, through MARG-I, provides support to emerging research scientists, including MSc and PhD students wishing to turn their noble ideas into real research projects and to carry out well-defined research activities in their countries/institutions. Over the years, the programme has enhanced capacity of young and upcoming scientists to conduct independent research in an effort to increase our understanding on various aspects of marine sciences in the region. Equally important, the Grant system offers opportunities for researchers to present research findings to different regional and international fora. This year, as in previous years, The MARG-I Programme has continued providing small grants to individual scientists in the region to conduct research in their home countries for a maximum of one year.

Apart from a one-year implementation period, this cycle of MARG Grants has seen an increase in the amount offered under MARG-I. A maximum of US$ 10,000 per year is currently offered. In April 2018, a call for proposals was announced by the WIOMSA Secretariat and a month later 88 applications were received (see Table 1 for details). As in previous years, applicants were required to submit proposals through an online portal. The proposals went through an initial screening process to ensure that all necessary documents were in place prior to an independent review by a special committee that met in May 2018.

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To summarise, the review process involved an independent review by the individual reviewer followed by a panel meeting and discussions by all reviewers. Each proposal was read by at least two reviewers. A total of 15 out of 88 proposals (see Table 2 below for details) qualified for funding. 4 other proposals are on hold, subject to a fresh review after addressing the initial reviewer’s comments, and budget availability. We are excited and looking forward to the successful implementation of these projects.

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<th>Country</th>
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<th>Male</th>
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You can track implementation of these projects in your area. Below are the details of research projects with the title and country where the implementation will take place; in addition, do keep an eye on our website and social media accounts, pictures and regular updates will be posted as they happen. Be part of this exciting process.

**Funded MARG-I project titles and country where the project will be implemented.**

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<td>The advancing oceans beach erosion and the vulnerability of selected coastal communities along the Kenya coast</td>
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<td>Screening antibacterial activity of <em>Eucheuma denticulatum</em> against vibrio species pathogenic to fish</td>
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<td>Extraction and Characterization of Bioactive Compounds from Selected Mangrove Endophytic Fungi along the Kenyan Coastline</td>
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<td>Impacts of the Payment for Ecosystem Services (PES) schemes on the local management of mangrove forest. Case of the community-based mangrove Carbon Project in the Bay of Assassins, Southwest of Madagascar</td>
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<td>Inter-annual trophic plasticity of seagrass-associated fishes in the context of traditional overfishing (SW Madagascar)</td>
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<td>Mozambique</td>
<td>Response of seagrass <em>Zostera capensis</em> and <em>Halodule uninervis</em> to disturbances of sedimentation and uproot for bivalve collection, a field experiment – case of Maputo Bay</td>
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<td>Assessing the role of the Bons Sinais estuary as a nursery for fish species of socio-economic interest - contributing for the monitoring and management of coastal ecosystems to improve the livelihood of local communities</td>
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<td>Identification of the growth potential of mussel <em>Perna perna</em> seeds on Inhaca Island South of Mozambique</td>
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<td>Screening for antimicrobial activity compounds in marine algae with focus to Chlorophyta and Phaeophyta from Mozambique</td>
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<td>Tanzania</td>
<td>Assessment of ocean acidification conditions in key and spatially isolated ecosystems of Mnazi and Chwaka bays -Tanzania</td>
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<td>Morphological identification for the Clupeidae and Engraulidae along the marine coastal waters of Tanzania. Taxonomic review and guidance for scientists and decision makers.</td>
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<td>Assessment of Mangrove Restoration in Tanzania: effectiveness, needs and prospects</td>
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<td>The potential role of mangroves in protecting adjacent marine habitats from land-derived nutrient loads</td>
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<td>Assessment of Heavy Metal Contamination in two Commercially Important Fish Species (<em>L. harak</em> and <em>R. kanagurta</em>) in Tanzania</td>
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<td>Blue carbon stores in the underlying sediments of <em>Syringodium isoetifolium</em> and <em>Halophila Sp</em> in the coastal of Dar-es-Salaam and Rufiji estuary.</td>
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<td>Characterization of microplastic pollution in sediment and filter feeders (cockles <em>Anadara anticuata</em> and blue mussels <em>Mytilus edulis</em>) as indicators species, along the Tanzanian coastline.</td>
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A one of a kind exhibition titled: “Mysterious Cetaceans – Discovering the World of Humpback Whales” took place at Pwani University in Kilifi County, Kenya on the 8-17 May 2018. The exhibition opened its doors to the public on 8th May, 2018 in a spacious modern auditorium at the University’s state-of-the-art library. Watamu Marine Association (WMA) co-hosted the exhibition together with Pwani University.

The objective of this exhibition was to raise awareness about humpback whales. Whales are known to migrate unhindered across oceans and are considered the symbol of the ocean’s health. Humpback whales grow up to 18 metres and weigh 40 tonnes. They migrate further than any other mammal on earth covering a distance of 5,000 km between their breeding and feeding grounds. In the course of their migration within the western Indian Ocean region, they reach the coast of Kenya every year in June/July.

Since 2011, this exhibition has been held annually bringing together marine scientists and non-scientists to watch, listen and learn more about the behaviour and life of these gentle giants. Notable in attendance this year were many marine biology students from Pwani University and other young scholars. The exhibition has attracted Kenya’s coastal environmental experts, fisheries experts, marine scientists, journalists and entrepreneurs among others. The official opening was inaugurated by the Dean of Post-Graduate Studies Prof. Mwatete Mlewa on behalf of the University’s Deputy Vice Chancellor for Research and Extension - Prof. Muniru Khamisi Tsanuo. Pwani University is one of WIOMSA’s institutional members from Kenya and has a fast growing membership base for the Association ranging from lecturers, non-academic staff, students and the alumini.

The exhibition, which had cinematic effects via video on overhead projector as well as wall to wall displays of still images showed how the whales breach the water surface acrobatically in courtship, and communicate by sonar that transcends a 20km radius. Mr. Mwangombe of WMA who was the exhibition guide pointed out that knowledge about whales and their behaviour can contribute in reducing conflicts with resource users in the coastal environment.

The President of WIOMSA, Dr. Jacqueline Uku graced the inaugural day of the exhibition. In her brief speech, she narrated her first experience at an earlier exhibition held in Nairobi.

“On my first impression, I was amazed that images of such huge phenomenon creatures would only attract very low attendance. But that was in Nairobi – far away from the ocean. And some of the images then were probably not as spectacular as these ones, thanks to modern techniques using improved aerial photography.”

Dr. Uku used the opportunity to talk about the activities of WIOMSA and invited those willing to come forward and register as new members.

From Kilifi, the travelling exhibition is headed to neighbouring Tanzania.

“I am so pleased to see many people in attendance here – and mostly the youth”, she added.
The beginning ... facing the challenges

The Western Indian Ocean Early Career Scientist Network (WIO-ECSN) is an initiative to promote scientific research through fostering strong regional ties among early career scientists and representing their collective scientific interests at an international level. The main purpose of the WIO-ECSN is to communicate research priorities from early career scientists to the scientific leadership of the WIO region, as well as to provide a platform for facilitating interdisciplinary and regional research collaborations. Although the WIO-ECSN is still in its early stages, it is well-positioned to become an association to develop skills and knowledge with future generations of interdisciplinary marine scientists to shape research in the WIO region.

Most of the early career scientists in the region are facing challenges related to improved training in scarce skills, shared access to technical help, accessing innovative research tools, administrative assistance, data interpretation and management, and the importance of grant writing resources for post graduate training.

Aims and Objectives

The aim and purpose of the WIO-ECSN is to communicate research priorities from early career scientists to the scientific leadership of the WIO region, as well as to provide a platform for facilitating interdisciplinary and regional research collaborations.

1. To develop skills and knowledge within future generations of interdisciplinary marine scientists to shape research in the WIO region.
2. To bring together the early career scientists in the region, where they will be able to share their research and knowledge of marine science across multiple disciplines in the WIO, and to promote local and regional exchange.
3. To develop expertise for effective research and management of coastal and marine environments and contribute to sustainable development.
4. To raise public awareness on the importance of coastal and marine science through targeted early career scientists and researchers at conferences and workshops.
5. To promote and enhance networking, cooperation and access to, and exchange of, relevant knowledge and information between researchers, managers, decision-makers and the general public.
6. To seek funding from individuals, the private sector and donor agencies (governmental and non-governmental) to finance research activities and programmes and to set up structures and engage in activities which will promote the long-term sustainability of the network, provided that these do not compromise the aims and objectives of the Network.
7. To undertake any other activities mandated by the General Assembly of the network.

The Network will, in exercising its aims and realizing its objectives, collaborate with national, regional or international organizations, whose objectives are consistent with those of the network.

A WIO-ECSN special session during the 10th WIOMSA Scientific Symposium

A special session for the WIO-ECSN was held during the 10th Western Indian Ocean Marine Science Association Scientific Symposium (30th October to 4th November 2017) at Julius Nyerere International Conference Center in Dar es Salaam, Tanzania. On 2nd November 2017 at 11:00 a.m., early career scientists from different scientific disciplines (marine ecology, fisheries biology, physical oceanography, marine spatial planning, governance and socio-economic development) attended the session. It was identified that having mentors will strengthen regional collaboration among countries for guidance and advice in research activities.

The mission of the network is to bring together the knowledge of early career scientists from the western region of the Indian Ocean for the development of understanding of marine ecosystems and capacity development, with the help of institutions, stakeholders and mentors, and strengthen and maintain partnership in the region with local people.
Organs and membership

The organs of the WIO-ECSN are composed of the General Assembly, the Board of the Network, the Secretariat, and the Country Coordinators.

For more information on joining the network, please contact Edward Senkondo: eddoseny@gmail.com

Chumbe Commemorates International Year of The Reef 2018
By Narriman Jiddawi

Chumbe Island Coral Park (CHICOP) commemorated the third International Year of the Reef (IYOR) on the 2nd July by hosting an open art exhibition themed “Marine Life” displaying various paintings of coral reefs, fish and other coral reef organisms which were drawn by a young local artist, Mr Abdulla K. Omar popularly known as Dullah Wise (www.dullahwise.blogspot.com). CHICOP, a private not-for-profit company established in 1992 manages Chumbe Island, just off Zanzibar Island in Tanzania, as a unique example of successful Marine Protected Area (MPA) management through income generation from eco-tourism that also provides environmental educational (EE) awareness programmes to school kids and local communities.

The art exhibition was officially opened by the Guest of honour, Dr. Vuai Iddi Lila, the Executive Director of the Commission of Tourism who congratulated Chumbe for hosting such an event. Mr Kevin MacDonald, the Project Manager of CHICOP, welcomed all guests present and reflected on Chumbe’s achievements of being a fully self-sustaining MPA that has maintained its biodiversity status while providing environmental education to over 7400 students, 1200 teachers and 1000 community members who have visited Chumbe Island since 2012.

Dr. Narriman Jiddawi a Senior Lecturer from the Institute of Marine Sciences (IMS), commented on the importance of commemorating such an event especially given the importance of coral reefs which are nurseries and feeding grounds for fish, which provide revenue for local communities, a vibrant attraction to tourists, provide coastal protection by breaking the power of the waves during storms and help to prevent coastal erosion. She also mentioned the ongoing collaborative research initiative efforts between students and researchers of IMS and CHICOP. The third IYOR International Coral Reef Initiative, following on from previous ones in 1997 and 2008, is a year-long campaign of events and initiatives hosted by governments and non-governmental organizations around the world, to promote conservation action and strengthen long-term collaborations for coral reef conservation.

For more information contact: n_jiddawi@yahoo.com and ukloiber@gmail.com
**New Staff Member at WIOMSA**

Ms. Yusra Saleh has recently joined the WIOMSA finance department as an accountant. Ms. Saleh will be responsible for the accounting of all costs of operations directly related to the Marine and Coastal Science for Management (MASMA) Programme and associated projects. Ms. Saleh is a Certified Public Accountant, CPA (Tanzania) and holds a degree in Business Administration from Zanzibar University. She has a good background and competency in the accounting field having previously held various accounting positions in reputable firms in Zanzibar.

Yusra is passionate about empowering the youth and interesting them in careers in accounting. She is a motivational speaker in her spare time, giving presentations to university students on the importance of becoming a Certified Public Accountant and easy ways to accomplish this. She is also interested in leadership and development initiatives and has attended several trainings in these areas.

She is excited about her new appointment at WIOMSA and is committed to utilizing her skills and actively contributing in ensuring that the MASMA and associated Programme goals are attained. We are pleased to welcome Yusra to the WIOMSA team and wish her every success in her new role.

**Announcements**

**WIO-COMPAS is Certifying MPA PROs: Apply Now!**

The Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS Programme is pleased to announce the certification assessment events for 2018

**Level 2 (L208)**

WIO-COMPAS is offering Level 2 Certification to MPA Managers, Assistant Managers, Site managers, Wardens, Deputy Wardens or Section Rangers. The Certification Assessment Event will be held on the 24-29 September 2018. Application documents are available for download here: Level 2 Call For Applications and Level 2 Application Form. To get the word versions of the application documents, send an email to lilian@wiomsa.org. The deadline for submission of applications is the 31st July 2018.

**Level 1 (L109)**

We are also pleased to announce the offering of Level 1 Certification for MPA Rangers, Officers or Marine Field Operators. The Certification Assessment Event will run concurrently with the Level 2 event on the 24-29 September 2018. Application documents are available for download here: Level 1 Call for Applications and Level 1 Application Form. To get the word versions of the application documents, send an email to lilian@wiomsa.org. The deadline for submission of applications is the 31st July 2018.

**MASMA Programme: Calls for research proposals and proposals to Support the Organization of Training Courses/Workshops & Publication of Books/Manuals**

WIOMSA through the MASMA programme, is pleased to announce two calls:

i) A call for research proposals. Grants of up to US$ 330 000 will be awarded to carry out research in the Western Indian Ocean region (Tanzania) and holds a degree in Business Administration from Zanzibar University. She has a good background and competency in the accounting field having previously held various accounting positions in reputable firms in Zanzibar.

The deadline for submission of proposals is 27 July 2018. Applications should be completed and support documents uploaded at http://proposals.wiomsa.org/masma-proposals/. Questions for clarification on these calls, be sent by email to secretary@wiomsa.org. For detailed instructions on these grants, download the full announcements for the call for: research proposals and the guidelines for preparing full proposals and proposals to support organizations of training courses/workshops and publications of books/manuals.

**Regional Workshop on ‘Marine Organisms Response to Climate Change Effects – Adaptation or Extinction?’: Call for applications**

WIOMSA and the Lund University of Sweden are organizing a Regional Workshop on ‘Marine Organisms Response to Climate Change Effects – Adaptation or Extinction?’ that will be held in Mombasa, Kenya from 8 – 10 October 2018.

The workshop will aim at furthering our knowledge and specifically to: synthesize current knowledge about how marine species in the Western Indian Ocean (WIO Region) respond to rapid climate change; identify new research directions to further understand species ability or limitations to adjust to anthropogenic stress, this in order to improve future management strategies; stimulate discussions and facilitate prospective collaboration between researchers and research groups in the WIOMSA region and to develop comparative research in tropical and temperate climates.

Applications for the workshop are invited from researchers, research groups, and experts representing government agencies and non-governmental organisations in the WIO Region with an interest in the effects of ocean climate change on marine and coastal species.

If you would like to apply for this workshop, please submit your CV and a summary of your projects relevant to the workshop theme (maximum of 2 pages) should be sent at the latest on the 15 August 2018 via emails to: WIOMSA (secretary@wiomsa.org) with copy to Johan Hollander (johan.hollander@biol.lu.se). However, we encourage you to submit your application as soon as possible because we will be making some selection decisions early, well before the deadline. Download the full announcement.