Newsbrief

From SUCCESS to RECOMAP and Other Projects

In 2004, the five year Programme, titled Sustainable Coastal Communities and Ecosystems (SUCCESS), was initiated in Eastern Africa and Latin America. Many wondered then, whether the acronym SUCCESS would live up to its name. Four years on, there is consensus amongst partners, peers and the coastal communities that have benefited from the program, that it has indeed been a SUCCESS! The SUCCESS Program was a collaborative initiative of Coastal Resources Center of the University of Rhode Island (CRC-URI) and the United States Agency for International Development (USAID) to promote Integrated Coastal Management, Sustainable Fisheries and Aquaculture worldwide. In Eastern Africa, the Programme was implemented by the Western Indian Ocean Marine Science Association (WIOMSA) in collaboration with the Institute of Marine Sciences (IMS) of the University of Dar es Salaam both based in Zanzibar, Tanzania.

The programme's accomplishments in Tanzania and East Africa were celebrated at a special seminar held in Bagamoyo, Tanzania, on the 11th March 2009. During the event, experts from the project presented their results to stakeholders from the coastal communities, relevant government departments, USAID officials from Washington and the mission in Tanzania, academia, NGOs and other implementing partners. They also held plenary discussions on implications of the Programme and future opportunities.

The highlights of SUCCESS include the introduction of pearl farming; communities in Fumba Peninsular, Zanzibar have started their own small scale half pearl farms. This follows the production by SUCCESS of the first ever artificial pearls in the region. Shell polishing, which is a part-time activity of the Programme has become a lucrative business earning some women up to 400 USD per month. Milkfish farming has improved from 0.5 tons/ha up to 3 tons/ha, with the prices rising from 0.4 USD up to 4 USD through proper choice of markets and the farms size changing from tens to hundreds of ha. The communities of Fumba Peninsular, especially the women, have become very enterprising.

At the inception of pearl farming, adult oysters were collected from the wild. The practice was found to be unsustainable; accordingly,spat collectors were set and the settling spats cultured to seeding size. Besides being more environmentally friendly, spats produce better animals with less attached parasites – thanks to regular monthly cleaning. The seeding of oysters for pearls, instead of eating into an additional year of their reproductive cycle, has substantially improved the conservation of oysters. This and the establishment of no-take zones has resulted in remarkable recovery of the pearl oyster population at Bweleo; which in 1989 was depleted beyond recovery. Collecting pearl oysters for food has also decreased substantially as the women collectors are

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Participants at the SUCCESS close up workshop in Bagamoyo.

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now engaged in different income generating activities like pearl farming, shell polishing and marketing, and seaweed farming. Further, the organization of the women into groups by SUCCESS has made it easy for other donors such as the Tanzania Marine and Coastal Environmental Management Project (MACEMP) to provide loans for poultry and agriculture; develop infrastructure for seaweed drying and storage; and construct a building for meetings and display of their commodities.

The Government of Tanzania created a taskforce to develop the National Aquaculture Development Strategy (NADS) and has created a division of aquaculture in the Department of Fisheries, activities that seem to have been influenced by the SUCCESS Programme in some way. The Government is also creating an enabling atmosphere, and proper policy and permiting procedures.

As the SUCCESS Programme ends, new projects are emerging, which are adopting its activities. These include the US State Department exchange training program on jewelry making, the 2 year Regional Program for Sustainable Management of Coastal Zones of the Indian Ocean Countries (ReCoMaP) projects for pearl farming and milkfish farming and MACEMP.

The ReCoMaP program on milkfish farming is developing 1ha demonstration ponds in Tanga, Pemba and Mtwara to complement the Changwahela demonstration sites developed by SUCCESS. At each centre, at least 25 people are trained on all aspects of fish farming in six 5-day training stints (30 man days over the two year period). The trained extension officers are encouraged to develop their own farms with those developing the right type of ponds being rewarded with the installation of a main gate to the pond - an otherwise costly venture. The ReCoMaP project on pearl oyster farming and shell polishing is being carried out in Fumba Peninsular with the aim of consolidating the pearl farming and shell polishing industry from farming through polishing, packaging and marketing. In a related,development, the US State Department in collaboration with IMS have launched a training and exchange program where women entrepreneurs will travel to America to visit their counterparts in the business and trainers from America will come to Zanzibar to conduct training.

It is reasonable to believe that the seed that was sown by SUCCESS is growing.

Scientist from WIO, Dr Matthieu Lecorre Awarded the 2009 Pew Fellowship in Marine Conservation - By Jo Knight (with some additions from WIOMSA Secretariat)

"My project is the first in the tropics to study seabird foraging patterns on such a large scale," said Dr Lecorre. "My hope is that it will help to establish some marine protected areas and to improve the conservation status of many endangered marine animals of the region."

Matthieu with a Barau's Petrel (an endemic endangered seabird) fitted with a miniaturised Argos Transmitter.

Dr Matthieu Lecorre, a lecturer at the University of Réunion Island in La Réunion, France, has been awarded the 2009 Pew Fellowship in Marine Conservation for his project using seabird behaviour to identify biodiversity hotspots in the Indian Ocean. He is the first from La Réunion and and the sixth from the Western Indian Region. Others recipients from the region are: Tim McClanahan, the late Adelaida Semesi, Magnus Ngoile, Jean Harris and Narriman Jiddawi who was co-recipient of the award with Glenn-Maria Lange from USA.

Pew Fellows in Marine Conservation receive $150,000 to conduct a three-year conservation project designed to address critical challenges to healthy oceans. Le Corre will use miniaturized transmitters to study the foraging patterns of seabirds. With this data, he will provide the first substantial clues of where biodiversity hotspots occur in the western Indian Ocean. Top predators like seabirds are powerful indicators of such areas because they often feed on prey driven to the surface by large fish. Le Corre will use this research to design marine protected areas to help reduce the ecological impacts of Indian Ocean fisheries. He also hopes to collect data that can help identify potential threats to seabirds when at sea. This project is building on the recently completed MASMA-funded project on "Seabirds as bio-indicators of tropical marine ecosystems: A regional study in the Western Indian Ocean"

"Dr Lecorre's project brilliantly uses nature's own 'tracking device' to locate areas of significant biological diversity and concentration," said Joshua S. Reichert, managing director of the Pew Environment Group. "By pinpointing these 'hotspots,' he can focus his efforts on protecting the most critical locations for the long-term health of the western Indian Ocean."

Dr Lecorre has been studying seabirds in the western Indian Ocean for more than 15 years. He is Réunion Island's country coordinator for the Western Indian Ocean Marine Science Association, an international organization dedicated to the study and conservation of marine life in this region. He is also assistant director of the Marine Ecology Laboratory at the University of Réunion Island and the leader of its Seabird Ecology team. Dr Lecorre studied biology and ecology before receiving Ph.D. in marine ecology at the Chizé Centre for Biological Studies in 1998.

The Pew Fellowship in Marine Conservation funds science and other projects that address critical challenges in the conservation of the sea, including communication of project information to increase awareness of global marine issues. Through a rigorous nomination and review process, an international committee of marine specialists selects Pew Fellows based on the strengths of their proposed projects, including their potential to protect ocean environments. Five unique and timely projects led by outstanding professionals in their fields are chosen annually. Since 1996, the Pew Marine Fellows Program has awarded 110 Fellowships to individuals from 29 countries.

Photographs and more information about each of the 2009 Pew Fellows in Marine Conservation are available at http://www.pewmarinefellows.org/2009.

The Pew Environment Group is the conservation arm of The Pew Charitable Trusts, a non-governmental organization that applies a rigorous, analytical approach to improving public policy, informing the public and stimulating civic life.

Dr Kyewalyanga appointed the new Director of IMS

Dr Margareth Kyewalyanga, has been appointed by the Chancellor of the University of Dar es Salaam as the new Director of the Institute of Marine Sciences (IMS), for the period of three years effective 1 April 2009. Margareth takes over from Prof A.M. Dubi, whose tenure has expired.

With her appointment, the new Director becomes the third woman to head one of the leading research Institutes in the Western Indian Ocean region. The others two are Emeritus Prof. Chantal Conand and the late Prof Adelaide Kleti Semesi.

The appointment of Margareth has been greeted with considerable enthusiasm by the staff and students of IMS as well as by the Institute's partners from within and outside Tanzania. The expectations that her appointment has generated are typical of a political appointment rather than that of the Head of a research institution!

She is a very active scientist, who regularly participates in regional and international cruises and she has led a number of research projects, which have been published in prominent peer-reviewed journals and generated information that has been used for management. Her research interests include phytoplankton ecology and primary production of the marine environment; physiological aspects of phytoplankton (pigments, absorption properties, spectral utilization of light); remote sensing (ocean colour) and modelling of primary production, harmful micro-algae in coastal waters among others fields. She is also member to a number of international scientific networks including: the Nippon-Foundation / Partnership for Observation of the Global Oceans (NF/POGO) network, Chlorophyll Ocean Global Integrated Network (ChloroGIN) and the Sustainable Aquaculture Research Networks in sub Saharan Africa (SARNISA).

During a brief interview with Margareth soon after taking over the new Office, she discussed what her priorities will be during her tenure.

"Once I am settled in the Office, I will discuss with my colleagues the strategies to increase research outputs in terms of quality and quantity of publications per scientist. I believe there is room for improvement on the current status", said the new Director.

Dr. Kyewalyanga

She listed her other priorities to include:

- Strengthening of the effectiveness of collaboration between the Institute and its key stakeholders at the national (management authority, private sector and the community), regional and international levels.
- With the recent increase in the number of staff and students at the Institute, it is essential to also increase the level of funding and diversify their sources;
- While continuing to build capacity of research staff, special efforts will also be directed towards improving capacity of supporting staff, which has been lagging behind in the last years.

Lastly, she stressed, "The staff ought to realize that the Institute is not a property of the Director, as directors come and go! During my tenure, I will strive to empower the staff to take more responsibilities in the day-to-day operations of the Institute."

Margareth brings to this position many qualities that will no doubt help her achieve this ambitious agenda. She is also a dynamic and very social person, unique qualities that will be of help to her in her drive to maintain existing partnerships at IMS and develop new ones.

WIOMSA wishes her the best of luck and is looking forward to working closely with her during her triennium!

Unveiling the hidden life of the Indian Ocean By Sarah Gotheil

Photo courtesy of Deep Atlantic Stepping Stones Science team.

Bottom dwelling marine organisms like sponges, soft coral, sea-fans and sea-squirts use chemicals for their defence.

The International Union for Conservation of Nature (IUCN) and the Agulhas and Somali Current Large Marine Ecosystems Project (ASCLME) are teaming up to discover the hidden treasures of the southwest Indian Ocean through the first dedicated scientific survey of seamounts ever conducted in this region.

Onboard the Norwegian research vessel *Dr Fridtjof Nansen*, a team of the world's leading experts, paired with scientists from the region, will investigate seamounts in the "no man's ocean" of international waters. Starting its voyage on November 11, 2009 at La Réunion, the vessel will sail off towards the southwest Indian Ocean Ridge to study five seamounts located between 32°00' S and 41°00' S, and end its journey forty days later, in Port Elizabeth, South Africa.

"We are embarking on a very exciting adventure", comments Dr Alex David Rogers, Principal Scientist for the research cruise and Marine Biologist at the Zoological Society of London. "As one of the least sampled regions of the global ocean, the Indian Ocean really represents a knowledge vacuum. The results of the survey will undoubtedly benefit the international community, by contributing to the global knowledge of seamounts".

The aim of the expedition, on the United Nations-operated *Dr Fridtjof Nansen* is to survey the biological communities associated with seamounts on the SW Indian Ridge, and to identify how these communities are maintained. The results of the analyses of the scientific investigations will provide the baseline for the formulation of sustainable management options for the area, and help identify measures for improving the governance framework for high seas resources in the Indian Ocean.

The investigations will include chemical, physical and biological oceanography, in order to improve understanding of the surroundings of the seamounts and their interactions with the pelagic realm. The multidisciplinary team of scientists will, ***inter alia***, perform acoustic surveys to identify fish stocks and distribution, as well as acoustic and net-studies of zooplankton, micronekton, nekton and fish. The biodiversity of fish, crustaceans and other invertebrates will be assessed through pelagic trawls, and their sampling will help determine the pelagic biodiversity and trophic ecology of the area, as well as provide genetic material for analysis. Other oceanographic measurements will be collected, including water salinity and temperature, current speed, and oxygen, and multibeam surveys will be conducted to develop detailed bathymetric maps of the seafloor. Opportunistic studies of seabirds and marine mammals will also be undertaken.

Following this cruise the United Kingdom's Remotely Operated Vehicle, ISIS, will be deployed on the seamounts to study their benthic communities. This second cruise, funded by the Natural Environment Research Council, U.K., will take place in 2011 and will obtain high definition video images of the seabed and be used to map any vulnerable marine ecosystems in the area, including deep-water coral communities. "This is a tremendous opportunity to explore the benthic communities of these seamounts, some of which were set aside as voluntary protected areas by the fisheries industry. One of the seamounts, Atlantis, is a drowned island on which fossil beaches can still be seen!", remarks Dr Rogers.

Overall these two cruises will represent a step change in understanding of the species diversity and ecology of seamounts in the southern Indian Ocean. They will also help to improve understanding of why seamount ecosystems are centres of biological activity and host abundant populations of fish and invertebrates compared to the surrounding deep ocean. Thus the study will also form a significant contribution to the legacy of the Census of Seamount study, part of the Census of Marine Life programme.

"We are very enthusiastic to collaborate on this expedition. It offers us a fantastic opportunity to establish the boundary of the Agulhas and Somali Current, and will provide unique data to foster comprehensive transboundary marine resources management", says Dr David Vousden, Director of the ASCLME Project.

Seamounts, underwater mountains rising from the ocean floor, are found in all oceans of the world and are abundant features of the seafloor. Like other topographical seabed features, they are known to be hotspots of biological diversity and production, and play an important role for marine biodiversity and the status of marine food webs. Species such as migratory fish and cetaceans rely on seamounts as well for their food supply. The limited knowledge of seamount-associated fauna to date indicates that many species grow and reproduce slowly, thus are highly vulnerable to overexploitation. Seamounts host concentrations of commercial pelagic fish (e.g. tuna) as well as deep-water fish species (e.g. orange roughy) that attract commercial fishing activities. Fisheries in the southern Indian Ocean depleted orange roughy populations in just a few years and represent a typical example of the "boom and bust" pattern of exploitation of deep-sea fish found around seamounts. Such deep-sea trawl fisheries can also cause irreparable damage to fragile, slow-growing deep-seabed communities of cold water corals, sponges and other animals. The present investigation will identify whether such communities exist on the seamounts of the SW Indian Ocean Ridge.

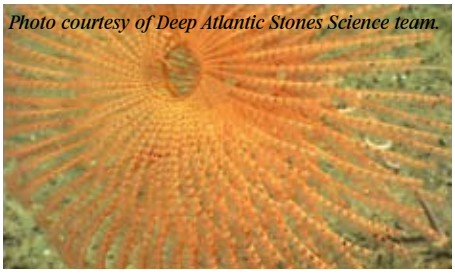

Photo courtesy of Deep Atlantic Stones Scienee team.

Coral Iridogorgia with feeding polyps on the branches.

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The Indian Ocean remains the most significant gap in current knowledge of global seamount ecology and biodiversity. Thus, conservation and management of marine biodiversity based on precautionary and ecosystem approaches is hampered by lack of any fundamental scientific knowledge and understanding of seamounts and their relationship with benthic and pelagic fish species of commercial interest. Since many seamounts lie in international waters, the control of the activities that impact on these oceanic features represents a major challenge. No governance body in force has yet the mandate to conserve and manage deep-sea ecosystems in the southern Indian Ocean, leaving seamount fisheries effectively unregulated.

"The momentum for improved regional and international cooperation in managing the high seas resources of the Indian Ocean is really building, and it is extraordinary to be able to stimulate this process with unique and state-of-the-art scientific data", states Sarah Gotheil, Programme Officer at IUCN Global Marine Programme.

The combination of the lack of understanding of important oceanic features such as seamounts and their interactions with commercial fish species and the existing gap in the high seas marine biodiversity governance and regulatory system poses major threats to marine species and their habitat. Thanks to the partnership with the Zoological Society of London, the FAO's EAF-Nansen programme and the ASCLME Project, and to the support of Global Environment Facility, the research cruises and their results will offer invaluable scientific information of global interest, as well as the foundation for improved conservation and management at international and regional negotiation processes.

EAWST leading the way in whale shark conservation and education

Legend has it that when God created the whale shark, He was so pleased with His handiwork that He gave His angels handfuls of gold and silver coins to throw down from heaven into the sea. These coins landed on the whale shark's back as it swam peacefully near the surface and that is why the whale shark is called "papa shillingi", which in Kiswahili translates as "the shilling covered shark". So, whale sharks swim near the surface as a way of saying thank you to their maker.

Whale sharks have called Kenyan waters home for many years. Recently, there has been a significant increase in their numbers which is perhaps related to the post El Nino mantis shrimp invasion. Mr. Volke Bassen founded the East African Whale Shark Trust (EAWST) at Diani Beach, in 2005, as a response to the dramatic increase in sightings as well as increased interest from the tourist sector. The overall aim of many whale shark projects is to raise awareness so that the level of protection afforded to whale shark is increased. The EAWST aims to provide a research centre for collecting and analyzing data on the local whale shark population, its habits and movements.

EAWST has various projects underway, perhaps the most exciting and well established being the tagging programme run in conjunction with HUBBS Seaworld Research Institute, San Diego. 2007 marked the first ever successful tagging expedition to be run off the coast of Africa. Over 50 whale sharks were spotted and 11 tagged over an 8 day period. Various tags were deployed including satellite tags and streamer tags; DNA samples were also taken. 2008 saw EAWST make history when 17 sharks were tagged with satellite tags, the most ever to be tagged in one place at one time.

During expeditions, different types of tags are attached to the whale shark using a Hawaiian sling gun or a spear gun. Satellite tags can store data for up to one year after which the tag is released by a timer and the data is transmitted via satellite. These tags give data such as dive profile, ambient light, and salinity levels. From that it is possible to work out migration patterns. These tags cost around USD 5000 each. The archival tags are considerably cheaper at USD 600 a piece and whilst they store similar data they have to be removed from the whale shark in order to retrieve the data. Acoustic tags cost USD250 and work by sending a signal to a series of underwater receiver stations. The receivers cost USD500 and are placed at various intervals along the coastline and the whale sharks are tagged. Whenever a shark swims within a 500m radius of the receiver station the data is recorded. The data can be downloaded from the receiver station regularly and easily. Finally the streamer tags are small numbered flags that are attached to the whale shark to allow visual identification.

Papa Shillingi

The major threat the whale sharks in our waters face is being caught in the local fishermen's large mesh nylon drift nets. EAWST latest initiative is a fibre-glass turtle shell workshop where local fishermen are taught how to make fibre-glass turtle shell lamps. These are sold to tourists and the money raised is used to buy the traditional nylon mesh nets from the fishermen and teach them how to use more environmentally friendly fishing methods. Whale shark merchandise such as carvings, T-shirts and DVDs are also available for sale.

East African Whale Shark Trust,
Galu Kinondo Beach,
PO Box 933
Ukunda 80400, Kenya
nimu@giantsharks.org; www.giantsharks.org
Tel.: +254720293156

Dugong Found in Kiunga Marine National Reserve – Mike Olendo

On 27 January 2009, news filtered through the village- in disbelieving whispers- that a dugong "nguva" had been caught in one of fishermen's gillnets. There was a palpable but restrained sense of excitement in Kiunga village in Lamu. Then fishermen confirmed and identified whose nets had caught the dugong there was pandemonium in the otherwise sleepy village. Everyone who could walk (mostly women and children) made a beeline for the fish landing site to wait for the mysterious and extremely rare dugong.

Kiunga baby dugong.

Released

The furor could be explained by the fact that last time a dugong was sighted in Lamu archipelago, in Kenya, was 2003 and it was already dead. The exciting part is that the fisherman in whose gillnet the baby dugong was caught said that the mother was in the vicinity. The baby dugong was later released in the vicinity of its entanglement. This indicates that there is a breeding dugong population north of Kiunga Marine National Reserve; presenting an opportunity as well as a challenge to their conservation.

It interesting to note that although there have been anecdotal sightings of dugongs along the coast especially in Shimoni and Kisite areas on the southern coast of Kenya, dugong foraging grounds have not been exactly identified, unlike in Kiunga, where the dugongs have been accidental captured.

Not so lucky

Few days later in Tanzania, on 5 February an adult and young dugongs were captured in fishing nets off the Rufiji Delta. These were not as lucky as the baby dugong from Kiunga, as they were found dead.

Kiunga villagers crowd the baby dugong site.

Coincidence or conservation is working?

These captures are raising questions, are these isolated cases or is it an indication of slow recovery of dugong population particularly off Rufiji Delta where they have not being sighted from several years? For many years, coastal communities as well as many marine experts believed that dugongs were extinct in the area. With these captures occurring in the Kiunga Marine National Reserves and off Rufiji Delta, an area under Rufiji-Mafia-Rufiji (RUMAKI) Seascape Programme, the question is "is it a coincidence or is it an indication that conservation efforts are working by providing refuge areas for these dugongs?"

Baby dugong from Rufiji.

Adult dugong from Rufiji.

Using wetland lagoon system for wastewater management at Mtwapa Creek in Mombasa, Kenya

The wetland lagoon system

Shimo La Tewa State Prison, is one of the more famous maximum security prisons in Kenya. Recently though, it has been making headlines in and outside Kenya for different reasons. The Prison is one of the nine demonstration projects of the UNEP/GEF funded Regional project on Addressing land-based activities in the Western Indian Ocean (WIO-LaB). Through this project, the Prison has designed and constructed a coupled wetland lagoon sewage treatment system that is treating wastewater emanating from the prison premises with minimum energy requirements and using the treated wastewater for irrigation and aquaculture

Shimo La Tewa State Prison hosts approximately 4000 inmates and is situated on the banks of the Mtwapa Creek, north of Mombasa, Kenya. It produces about 180m^3 of wastewater with a pollution load of 220kg/d BOD, most of which is discharged into the creek, untreated. The untreated wastewater is affecting the water quality of the creek with consequences on ecosystems, aesthetic value, fisheries and recreational activities, etc. The construction of a wetland system was therefore proposed, to solve the problem by treating the wastewater thereby reducing the pollution load in the creek while demonstrating the principles of ecological sanitation through a sustainable waste management facility at the Prison.

The project implementation started in March 2008 and is expected to be completed in June 2009. The project is funded by UNEP − GEF through WIO-LaB project, the Norwegian government, Aqua for All Foundation- which is financing the Borstal Institute (the juveniles' wing adjacent to the main prison) and the Kenya Prison Service (KPS), through their Ministry of Home Affairs (under the ongoing Kenya Prison Reform Program). The lead agency in the project is the CDA in collaboration with other stakeholders like NEMA, KMFRI, KPS, Mombasa Water & Sewerage Company (MWSCo) through MCM, with technical assistance being provided by the University of Dar es salaam (UDSM).

The constructed wetland system will work by treating the sewage discharged by reducing its BOD load. The wetland treatment facility includes toilets for male and female prisons, inspection chambers, two units of purshal flume, water supply in toilets and bathrooms, installation of a sewerage network, a septic tank, a subsurface flow constructed wetland and a fish pond. The project is also conducting education and awareness of the prison staff so as to improve sanitation and environmental health around the premises.

The Shimo La Tewa wetland−lagoon system provides a good model on the application of constructed wetlands systems for wastewater treatment. The system is also cost effective and efficient and for these reasons, the Ministry of Home Affairs has indicated its willingness to replicate the project in various prisons across Kenya.

***Article written courtesy of Stephen Katua*, (WIO-LaB Focal Point for Kenya) and Mwanasiti Bendera (The Shimo La Tewa Project Manager.)**

FAST Embraces Nuclear Technology to Assess Marine Environment

Participants follow the Workshop proceedings attentively.

The Faculty of Aquatic Sciences and Technology (FAST) of the University of Dar es Salaam hosted the national workshop on using nuclear technology to improve assessment of contamination in the marine environment. The workshop was held on 19th March, 2009 in Dar es Salaam and attended by representatives from the Tanzania Government as well as from academic and scientific organizations based in Tanzania.

National Steering Committee

Tanzania Atomic Energy Commission (TAEC), National Environmental Management Council (NEMC), UDSM Faculty of Aquatic Science and Technology (FAST), Institute of Marine Sciences (IMS), Tanzania Fisheries Research Institutive (TAFIRI), Min of Agriculture, Zanzibar Directorate of Environment (DOE), Tanzania Institute for Medical Research, Government Chemist Agency and Tropical Pesticides Research Institute (TPRI)

The workshop was formally opened by the Deputy Vice Chancellor of the University of Dar es Salaam, Prof Yunus Daud Mgaya. The IAEA representative Dr. Michael Warnau also addressed the Workshop. The event is among a series of national seminars planned by countries participating in the International Atomic Energy Agency (IAEA) regional technical cooperation project entitled: RAF/7/008 - *Enhancing Regional Capability for the Assessment of Contamination in the Marine Environment.* Participating countries involved in this project include Algeria, Kenya, Ghana, Nigeria, South Africa, Tunisia, Egypt, Morocco and Tanzania.

The Workshop aimed at assessing Tanzania's national capabilities in the area of marine environment monitoring and sought to raise awareness among decision makers and the stakeholders about the regional programme. Participants included representatives from FAST and other relevant faculties of the University of Dar es Salaam, the Tanzania Atomic Energy Commission, Tanzania's Departments of Environment, Fisheries and Tourism, Ministry of Energy and Minerals, the National Environment Management Council, Zanzibar's Fisheries Department and Department of Environment and WIOMSA. WIOMSA partially funded the workshop.

The IAEA established the RAF/7/008 Project in 2007 to help participating countries to develop effective assessment of marine pollution in order to promote sustainable environment management. The project uses stable isotopes, radiotracer techniques and nuclear tracer techniques to diagnose the sources and ecological impact of priority contaminants, which may include river nutrients, radionuclide and heavy metals.

The envisaged project findings will provide policy makers with a better scientific basis for making decisions that promote sustainable management of the marine environment

The Workshop defined the responsibilities of the national counterpart institutions, established a steering committee and laid the groundwork for the forthcoming national activities.

For more information, contact:

Prof. John Machiwa, Dean FAST, UDSM, jmachiwa@udsm.ac.tz

The 2009 EAWST Whale Shark Expedition - By Nimu Njonjo

Micro light Team Kenya Expedition.

Everybody remembers the first time they swam or dived with a whale shark as it is unforgettable. To get close to such a large and beautiful creature is an awesome, immensely humbling experience. There is something magical about watching them move, the curve of their tail, the glint of their spots and the tiny yellow and blue fish that collect in the jet stream in front of their mouths. With a graceful sweep of their bodies they can disappear into the deep, taking with them their secrets.

Expedition 2009 got off to a flying start with 2 whale sharks sighted and one tagged on day 1. After that however the level of whale sharks sighted dropped rather dramatically with only 8 sightings and 3 taggings during the 3 week expedition period. Despite the lack of sharks, everyone who joined us on the expedition had a fantastic time. There was not one complaint about the lack of sharks! People understood and respected the fact that whale sharks are wild and free. We are still learning so much about these creatures and cannot predict where they will turn up next! We were overwhelmed by the amount of interest and support from the public. We had full boats everyday allowing us to conduct the longest and most cohesive aerial survey of the Diani Beach area. We had no less than 4 different film crews including ones from Germany and from Australia. The media interest was huge with reporters from Reuters, Associated Press, Kenya Television Network, The Standard Group and Africa Journal.

One of the best things to come out of the expedition has been the significant interest in the dreaded nets donated to a group of local fishermen by USAid. The EAWST has been trying to get these nets banned here as has been the case in the USA for over 2 years now. Diving The Crab reported over 70 dead turtles caught in these nets during 2008 alone. We all remember the 2 humpback whales caught in these same nets late in 2008, one of which was thankfully released by Diving The Crab. These events resulted in mega media interest and US Aid is now being forced to acknowledge the enormous damage these nets have caused. We continue to hope that they will support the alternative fishing programmes that the fishermen are keen to try. We are getting responses from all over the world from organisations and businesses who are interested in helping us with these alternative programmes.

The 3 sharks tagged have all been adopted - the first 2 have been adopted by Philippa Gibbon. She has named the first shark Bumble. The third one is called Eagle Eye adopted by the London Vision Eye Clinic. Thank you to our kind sponsors who will receive regular updates on their shark's movements.

So although our friends the gentle giants did not come to the party this year, we have still achieved a lot on their behalf. We are working on getting whale sharks legal protection in Kenyan waters. We would be the first country in East Africa to do this. We strengthened our working relationship with the Kenya Wildlife Service and with the Wildlife Conservation Society and Dr Rachel Graham the scientist in charge of the research and tagging. We wish to thank our main sponsors Southern Cross Scuba, Diani Fishing Club, Pinewood Village, Leisure Lodge, Southern Cross Safaris, Aqualand Watersports Centre and Camp Kenya. Our fantastic pilots were Alexis Peltier, Rob Dodson and Peter Zanetti. And most of all thank you to each and every expedition member who contributed the running costs of the expedition. We could not have done it without you!

Sea Sense – Tanzania's coastal communities protecting endangered marine life

Marine turtles live long and are slow to mature, making them particularly vulnerable to human exploitation at all stages of their life cycle. Globally, most turtle populations are depleted and some are already extinct as a result of habitat destruction and alteration; overexploitation for meat, eggs, shells and hides; and fisheries by-catch. The status of turtles in the Western Indian Ocean region was first assessed in the mid 1970s when populations of all species were reported to be declining. Subsequent studies indicate that turtle populations have continued to decline with a high human pressure index accounting for approximately 85% of turtle mortalities and illegal take-offs in the form of poaching of turtle meat, eggs and oil.

Dugongs (*Dugong dugon*) are gentle marine mammals found in shallow coastal waters of the Indian and Pacific Oceans. They are long-living, slow breeding animals which feed exclusively on sea grasses. Dugongs are the most endangered marine mammals of the Western Indian Ocean. Once abundant in Tanzania, populations have declined due to hunting, net capture and habitat degradation. Until recently they were believed to have disappeared from Tanzania's tropical waters.

Sea Sense is a local Tanzanian non governmental organization, established in 2001, which is working with local communities to protect the rare dugong and five species of marine turtle and marine habitats, to reverse declining population trends and to promote the protection of coastal and marine habitats vital to their survival. The dugong and the sea turtle are the flagship species of the organization.

Sea Sense collects data on the population status, distribution and threats to dugongs and sea turtles through aerial and

A Sea Sense community awareness gathering.

PRA surveys. This process involves the monitoring of the success and number of surviving hatchlings in order to determine factors involved in the variability and recording the instances of turtle and dugong deaths. The results are disseminated to the communities through their awareness-raising activities. Sea Sense supports the community-based nest protection and monitoring program- it trains locals to protect and where necessary move threatened turtle nests; conducts community awareness-raising on net releases, this is a project that encourages fishermen to release dugongs and turtles from their nets if caught. Sea Sense promotes turtle-excluder devices in trawlers and is involved in turtle tagging to collect data on the movement of turtles off the coast of Tanzania. It is also involved in the protection of whale sharks and cetaceans through community awareness-raising.

Among the major donors that support the activities of Sea Sense are the Born Free Foundation, Care for the Wild, Project Aware Foundation, WWF-Tanzania and the RECOMAP Project. There are also a number of dedicated individual supporters all over.

For more information please contact:
PO Box 105044, Dar es Salaam
Tel: 022 266 7784
seasense@cats-net.com
www.seasense.org

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The Executive Secretary
Western Indian Ocean Marine Science Association (WIOMSA)

Mizingani Street,
House No. 13644/10
P. O. Box 3298, Zanzibar,
United Republic of Tanzania
Phone: +255 24 2233472
Fax: +255 24 2233852
E-mail: secretary@wiomsa.org
Web: www.wiomsa.org