Dar es Salaam hosts successful 10th WIOMSA Symposium

This year, the biannual WIOMSA Scientific Symposium was held in Tanzania for the second time; the last being in Dar es Salaam in 2001. The meeting was hosted at the Julius Nyerere International Convention Centre (JNICC) in the Dar es Salaam city centre. A wide variety of participants attended the Symposium including scientists, students, managers, decision-makers, community groups and the private sector. Interest and participation in this premier regional event remained at a high level with 198 oral and 341 poster presentations this year, and an attendance of over 500 participants from nearly 30 countries around the globe. Six keynote presentations on topics of regional and global importance were made during Plenary each morning. Due to the extraordinary wide range of research activities that are ongoing in the Western Indian Ocean, and the extensive interest in presenting at this event, the guiding themes of this year’s Symposium were wide ranging and included 41 separately themed sessions. The inclusion of 16 Special Sessions on Thursday indicated the growing importance placed by stakeholders on this event as a meeting place for people to discuss matters of common interest. Several pre- and post-symposium meetings were also arranged to make use of the presence of so many specialists in one place at one time. In addition, seventeen organisations chose to exhibit their activities at the Symposium during the week.

A bird’s eye view of the opening ceremony.

This year, the biannual WIOMSA Scientific Symposium was held in Tanzania for the second time; the last being in Dar es Salaam in 2001. The meeting was hosted at the Julius Nyerere International Convention Centre (JNICC) in the Dar es Salaam city centre. A wide variety of participants attended the Symposium including scientists, students, managers, decision-makers, community groups and the private sector. Interest and participation in this premier regional event remained at a high level with 198 oral and 341 poster presentations this year, and an attendance of over 500 participants from nearly 30 countries around the globe. Six keynote presentations on topics of regional and global importance were made during Plenary each morning. Due to the extraordinary wide range of research activities that are ongoing in the Western Indian Ocean, and the extensive interest in presenting at this event, the guiding themes of this year’s Symposium were wide ranging and included 41 separately themed sessions. The inclusion of 16 Special Sessions on Thursday indicated the growing importance placed by stakeholders on this event as a meeting place for people to discuss matters of common interest. Several pre- and post-symposium meetings were also arranged to make use of the presence of so many specialists in one place at one time. In addition, seventeen organisations chose to exhibit their activities at the Symposium during the week.
Besides the sharing of scientific information this meeting was an important opportunity for students and young scientists and practitioners to present their work and receive feedback from their peers from within and outside of the region. It provided the opportunity to build networks and collaborations to take their work forward, and importantly provided a fun environment with plenty of socializing to allow this interaction to happen both at a formal and informal level. As usual, WIOMSA partially the costs of many regional students to allow them to attend the Symposium.

The Symposium kicked off with an opening ceremony attended by several dignitaries including the Guest of Honour, Hon. Luhaja Joelson Mpina, Minister of Livestock and Fisheries, H.E. Hanne-Marie Kaarstad, Ambassador Royal Norwegian Embassy, Dr Claes Kjellstrom, Senior Research Advisor to Sida and representative of the Swedish Government, Dr Jaqueline Uku, President of WIOMSA, Dr Julius Francis, Executive Secretary of WIOMSA, and Prof Yunus Mgaya, Chairman of the Local Organizing Committee. In addition, the conference was attended by the WIOMSA Board of Trustees as well as the MASMA Programme Committee, representatives of Intergovernmental and Non-Governmental Organizations and National Research and Academic Institutions.

Oral presentations ran in six parallel sessions on Monday through to Wednesday, with the Tuesday afternoon devoted exclusively as a poster session, where poster presenters had the opportunity to engage with other participants on their particular research areas. Research group and other informal side meetings were ongoing throughout the week, while the formal Special Session day was held on Thursday.

Six keynote presentations were delivered during the morning plenary sessions from Tuesday to Thursday by leaders in a variety of disciplines, both from within and outside of the region. Key notes included presentations by Maria Manez (Germany) on ‘Digesting Knowledge: Climate Services Provision – from Science to Adaptation Implementation’, Neil Saintilan (Australia) on ‘Policy considerations for managing wetlands under a changing climate’, Moenieba Isaacs (South Africa) on ‘Transdisciplinary approaches through co-designing research with Small-scale fishers: Lessons learnt from global experiences’, Tim Daw (United Kingdom/Sweden) on ‘Ecosystem services: The past, the pitfalls and the potential for supporting wellbeing of people in the Western Indian Ocean’, Matt Richmond (Tanzania) on ‘To drill or not to drill: examining issues associated with the development of the oil and gas industry in the Western Indian Ocean region’, and Ian Bryceson (Norway) on ‘Development of Marine Science in the WIO: Reflection on the growth and future of WIOMSA’.

Several social functions were held during the Symposium week to allow participants to engage with each other in a less formal atmosphere. The Opening Reception was held outdoors on Monday evening in front of the JNICC, with local entertainment organised by the Local Organising Committee. Fellowship and Honorary Awards recognising outstanding contribution to WIOMSA over the years were made during this function with the Honorary Award going to Dixon Wariinge and the Fellowship Award to Prof Michael Schleyer. The launching of the Women in Marine Science Network also took place during the function, with a well-attended inaugural meeting of the Network taking place later in the week.

Three Special Events were held before the key note presentations each morning. On Tuesday morning the recently completed book ‘The RV Fridtjof Nansen in the Western Indian Ocean: Voyages of marine research and capacity development’ was launched by the FAO in the presence of the Ambassador of Norway to Tanzania, and many of the contributing authors and reviewers. WIOMSA was a key partner in the preparation of this book which represents a significant output from many years of research by the Nansen in the WIO region. A Special Presentation on WIOMSA’s journal, the WIO Journal of Marine Science, was made on Wednesday morning by the Chief Editor, Prof Jose Paula. The new look journal with revamped editorial and publication processes was show-cased and participants were encouraged to publish in the journal and assist in the journey to impact factor. Participants were also provided the opportunity to attend an open day on board the South African Antarctic Supply and Research Vessel SA Agulhas II on Friday. The vessel was visiting Dar es Salaam as part of the programme of the Indian Ocean Expedition.

The Closing Reception was held at the Golden Tulip Resort and Spa on the beachfront on Thursday evening. Awards were made at the function for the best student oral and poster presentation, which were judged by members of the Symposium Scientific Committee. Friendly competition was evident among the students during the Symposium and...
it is believed that this recognition through the competition encourages excellence among these young scientists. Certificates of Appreciation and gifts were presented to the members of the Local Organising Committee and the student volunteers before snacks, drinks and dancing was enjoyed by those in attendance.

Friday morning saw the 6th WIOMSA General Assembly taking place, and the announcement of the results of the election for the new Board of Trustees. The General Assembly provided the opportunity to present WIOMSA’s activities since the last Assembly held four years ago in Maputo, and also for members to provide feedback on important upcoming issues.

Communication and networking was enhanced during the Symposium with the inclusion of two Symposium Newsletters during the course of the week, an active Symposium Blog, a dedicated Twitter Account, and a Symposium App. These communication tools were well used by participants and provided platforms to share information and keep participants up to date with any changes to the programme.

Based on feedback received from Symposium participants, the 10th edition of this meeting was enjoyed by all, and was well organised by the Local Organising Committee. Bearing in mind that this Symposium provides the leading regional forum for communication and networking among marine scientists, managers and practitioners, members and the various organs of WIOMSA have embarked on a process of discussing the future format for the Symposium based on lessons learned to date. Questions such as the frequency, size and shape, and geographic locality for future Symposia need to be investigated and answered to ensure that WIOMSA continues to be able to host events of this nature that remain effective and provide the best possible experience for participants.

WIOMSA would like to thank the sponsors of the Symposium which included the Government of Sweden, IOC-UNESCO, Scientific Committee on Oceanographic Research (SCOR), International Foundation for Science (IFS), the Biodiversity Project of the Indian Ocean Commission funded by the EU, and StatOil. In addition, the co-organisers of the event – the University of Dar es Salaam, Tanzania Fisheries Research Institute and the Nairobi Convention Secretariat, are gratefully acknowledged.

The 10th Symposium attracts a record number of special sessions

In addition to the scientific programme, 16 Special Sessions took place at the 10th WIOMSA Scientific Symposium on Thursday 2nd November 2017 allowing regional stakeholders the opportunity to focus on particular subjects of interest whilst many of their colleagues were present in one place at one time. This aspect of the Symposium remains popular among delegates with most of the sessions being well attended, and this year attracted several new global initiatives that wish to enhance their presence in the WIO.

Each Session was convened by a facilitator who had previously submitted an expression of interest to run such a session. Diverse subjects were covered ranging from Coral Reef restoration, and a post bleaching assessment for the WIO; applications of AlReMaS and AfroBIS in the WIO; a roadmap for managing Sharks and Rays in the WIO; the Indian Ocean Expedition; SA-IORAG; SeaSketch for Marine Spatial Planning; and the Ocean Innovation Tour.

Several of these sessions provided the opportunity for committees and ongoing regional initiatives to report back to their constituencies and stakeholders. Of note in this regard were the sessions on the WIO Sea Turtle Network and the WIOMSA would like to thank the sponsors of the Symposium which included the Government of Sweden, IOC-UNESCO, Scientific Committee on Oceanographic Research (SCOR), International Foundation for Science (IFS), the Biodiversity Project of the Indian Ocean Commission funded by the EU, and StatOil. In addition, the co-organisers of the event – the University of Dar es Salaam, Tanzania Fisheries Research Institute and the Nairobi Convention Secretariat, are gratefully acknowledged.

The special session programme has again proved to enhance the overall Symposium experience with most being well attended. However, the large number of Special Sessions also has the potential of providing too much choice for participants which can lead to some sessions being poorly attended, or conflicts for participants who wish to participate in more than one session. This needs to be addressed for future Symposia. Session facilitators have prepared more detailed reports on each session capturing the main outcomes for the purpose of circulation to participants.
Best students awarded

Students were in abundance at this year’s Symposium with 42 oral and 61 poster presentations on the programme. As usual, student presentations were judged by the Symposium Scientific Committee. This process involved at least two Committee members attending each student oral and marking the students based on a standard score sheet. The posters were scored in a similar manner, although all posters were viewed by the entire adjudication panel. Once the scores were compiled the following results were announced at the Closing Reception at the Golden Tulip Resort and Spa on Thursday evening. Each winner received a book prize. Congratulations to the winners!

ORALS

1st Prize – M. Duncan
Marine protected areas provide species with physiological resilience to the impacts of climate change

2nd Prize – O. Ogega
Towards harnessing potential benefits of increased rainfall projections in East Africa: a case of Kilifi County

POSTERS

1st Prize – E Alonso Aller
Effects of seasonality and marine protection on seagrass growth and grazing patterns

2nd Prize – J. Glass
Phylogeography of an iconic sportfish, the Giant Trevally (Caranx ignobilis), and implications for fisheries management

3rd Prize – A. Hoamby
Influence of mangrove degradation on seagrass meadow characteristics: a cases study from northwestern Madagascar

Day 1 and 2: 30th and 31st October 2017

1st Prize – C. D’Agata
Social and ecological factors influencing small-scale fishers in the Bay of Bazaruto, Mozambique

2nd Prize – F. Jouval
Coral recruitment processes on progressive autogenic ecological successions (marine lava flows from Piton de la Fournaise volcano, Reunion) and on allogenic regressive successions under anthropogenic stress in SWIO coral reefs (Reunion, Rodrigues)

Day 3, 1st November 2017

1st Prize – M. Duncan
Marine protected areas provide species with physiological resilience to the impacts of climate change

2nd Prize – O. Ogega
Towards harnessing potential benefits of increased rainfall projections in East Africa: a case of Kilifi County

Winner of the 10th WIOMSA Symposium Photo Competition Announced

Obed Matandura Ogega has emerged the winner of the 10th WIOMSA Scientific Symposium Photo Competition. His photo entry “Whatever we do, mother nature is watching!” depicting a crab on the beach in Diana, Kenya, received the most votes from the symposium participants. The theme of the photo competition was “The role of marine and coastal systems in achieving the Sustainable Development Goals for human prosperity”. 18 entries were submitted for the competition and these were showcased at the symposium for participants to cast their votes. WIOMSA would like to congratulate Obed for the win!
Welcome to the new world WIOMSA! Here one can experience a conference virtually, without even attending. No, we didn’t live stream the entire conference, rather, we relied on the power of social media to connect and stay connected, during our time in Dar es Salaam at the WIOMSA 2017 Scientific Symposium. This means we relied on the power of YOU – the conference attendee – to help us keep track of all the happenings on (and off) the conference circuit.

When you decide to attend a conference, there’s usually a good reason – showcasing your research, networking with others, meeting that potential collaborator or supervisor. You want to interact with peers and leaders. One of the BEST ways to make that even better is to use social media to enhance your attendee experience.

The tweets and posts started rolling in even before the conference started. Some of you tweeted your travels – and we loved it!

The WIOMSA social media presence has been growing steadily since our last symposium in 2015, and it was during the first day of the conference that our Facebook page hit over two-thousand likes! If you were ever wondering what the WIOMSA audience online looks like – wonder no more! Our audience speaks 29 different languages, and hails from a combination of 88 countries and cities. From our Facebook demographics, it looks like we are failing to reach enough women though, as over 60% of followers are male.

The power of social media extends far beyond our actual followers though. Over the duration of the conference, our Twitter posts alone reached 22 THOUSAND people in our larger network. That means your posts did too – and it was on Twitter that our WIOMSA women did shine – as the top tweet of the conference was about the inaugural meeting of the newly launched WIOMSA Women’s Network, and our top mention was by a woman too!

If you are perhaps one of our attendees, or followers who couldn’t make it to the conference, that is still a little unsure about how to best leverage social media at a conference for your own benefit, here is a handy five-step guideline (from @stephmnissen) that you can use to make your experience better:

1. Use the event hashtag – using hashtags helps us to track the response to our event, and also keeps all the posts about the event in one virtual space. This is another way to insert your unique voice into the conversation, and have your posts read by others who are following the event hashtag.
2. Take photos – photos are fun and get the best engagement online. You also have the best tool for photos in your hand – your very own phone. Snap away!
3. Use Facebook and Twitter (and Instagram too) - in a study by Freeman XP and the Event Marketing Institute, they found that Facebook and Twitter were the most effective social media platforms to use to communicate with an event’s community both before an event and during.
4. Live Tweet – this allows attendees to share insights and important points live, in real time, during the presentation. You can share statistics and quotes, and this allows other attendees who are not in that presentation to get a view of the highlights of what was presented.
5. Lastly, Follow Up – social media is a great tool to keep the conversation going even after the event is over. It also gives you a platform to post your on blog or article about the event, follow the event hashtag to see what else as posted, and to further those relationships with others you met at the conference.

**WIOMSA launches Women in Marine Sciences Network**

*By Rita Steyn*

In order to address many of the gender equality issues facing women marine scientists in the WIO, better networking amongst them is critical not only it will help to bring them together to discuss issues of common interest and identify priority issues for action but also will provide a platform for them to plan their activities and speak with one voice on issues of their concerns.

http://www.wiomsa.org/network-women-marine-sciences/

WIOMSA recently launched a new initiative – a network of, and for, women in marine science.

**WHY?**

The data tell us that across international boundaries, STEM (Science Technology Engineering Mathematics) subjects in primary, secondary, and tertiary institutions, all have fewer females than males enrolled in the STEM programs. Some notable exceptions to this seems to be biological subjects, here the female-to-male ratio of students is about 50% in tertiary institutions.

In any country, but especially in countries where gender roles continue to represent very different career paths, it remains a struggle to retain women in science, for multiple reasons. One of these might be “science-anxiety” - a debilitating interaction of emotion/fear, with cognition-science learning (Gender, Science Anxiety, and Science Attitudes: A Multinational Perspective – J. Mallow 2010). Two-thirds of participants in that 2010 study who reported experiencing “science-anxiety” were female. Moreover, female participants reported that the lack of representation of women in science, and especially women of colour, as strongly tied to their inability to visualise themselves as successful scientists, engineers, or mathematicians.

The data also tell us that in some instances girls are better than boys at some of these subjects when students are in secondary schools. Worldwide, 15-year-old girls actually outperformed their male counterparts in science, except in the US, Britain, and Canada (https://www.theguardian.com/world/us-news-blog/2013/feb/05/girls-science-gender-gap-fix). Researchers then found that “countries with the poorest degrees of gender equality also have the widest gulfs between male and female mathematical performance”.

Gender inequity continues to persist in senior academic positions, and some research attributes that to the persistence of historical gender ratios in those positions, discrimination, and gender-based behavioural differences. There continues to be too few women in science, and women receive less funding than male counterparts.

These issues then play out directly at conferences, where male attendees ask almost twice as many questions as female attendees, across all age demographics (Hinsley
A, Sutherland WJ, Johnston A (2017) Men ask more questions than women at a scientific conference. PLoS ONE 12(10): e0185344.). In the UK in 2015, just 13% of STEM workers were women. Studies, especially neurological and physiological ones, about why such low participation continues to exist are approached cautiously – in other words, they try to find if there is in fact any science behind the lack of women in science (http://www.telegraph.co.uk/women/womens-health/11401344/STEM-Is-there-any-science-behind-the-lack-of-women-in-science.html).

“The first meeting of the WIOMSA Women in Marine Sciences Network.

But the evidence suggests that from an ability point of view, men and women are on equal footing. It seems to point to environmental (home and school environments) factors, to acceptable career choices, to societal pressures, to available opportunity, to lifelong encouragement and mentoring, and simply to personal choice itself as the reasons for fewer women engaging in scientific careers for their entire lives.

It is in this larger community space that the WIOMSA Women in Marine Sciences Network hopes to operate.

WIOMSA recognises that mentoring and supporting women in science is vitally important to securing an equitable and sustainable future for the WIO region. Gender diversity in STEM is key to achieving SDGs and unlocking the potential of girls and women in society (http://www.scidev.net/sub-saharan-africa/gender/news/gender-diversity-in-stem-key-to-achieving-sgds.html). Furthermore, increasing gender equity and decreasing marginalisation can lead to greater innovation and development.

The first meeting of the newly formed network took place at the 10th WIOMSA Scientific Symposium in November 2017. During that time, we discussed issues, appointed a convenor/leader (Dr Jacqueline Uku), and asked for input about the future of the network. This continues to be a work in progress, and we solicit suggestions and comments from the WIOMSA community. Based on feedback from that meeting, we hope to develop the following type of structure and opportunities.

The WIOMSA Gender strategy (Policy statement 5) further outlines how the association will avail the knowledge and skills necessary to implement and mainstream gender into its operations. The Policy statement which highlights gender mainstreaming as a core part of WIOMSA is elaborated in several strategies including the following that would be of relevance to a network for women in marine sciences:

- Organise training workshops on the integration of sex and/or gender dimension within research for people involved in decision-making processes (i.e. peer-reviewers, evaluators and WIOMSA staff involved in the drafting and the implementation of WIOMSA funding calls).
- Organise sessions for researchers on identifying and addressing the sex and/or gender dimension in the development of research proposals during WIOMSA conferences/symposiums.
- Ensure that WIOMSA’s communications and publications are gender-sensitive.

Thus the establishment of a network for women in marine sciences associated with WIOMSA would complement and support the Association’s initiatives whilst furthering its own mission and vision as an autonomous professional network.

"Science needs women [and] women need science.”

Alice Ochanda, UNESCO Regional Office for Eastern Africa
A series of Firsts at the WIOMSA Symposium

This is the first time that the Agulhas II has plied the warm waters off Tanzania since the vessel was launched in 2012. The cruise was funded by the South African Department of Environmental Affairs, which also owns the ship. Costs of participants from Egypt, Kenya, Mozambique and Tanzania were covered by IOC/UNESCO Sub-Commission for Africa.

An open day on board was organized on 3rd November, and attended by some of the Symposium participants, the general public, and pupils from some primary schools in Dar es Salaam. The guest of honour to the event was the Hon Mr Ali Mufuruki, Chair of the Tanzania National Environment Trust Fund and a prominent businessman, who in his speech urged wealthy business people to consider supporting environmental research and expeditions through their Social Responsibility Programmes and other initiatives.

On the 4th of November 2017, the Symposium organizers, in collaboration with a local NGO, Youth Vision of Kigamboni (YVK) organized two events; a beach clean-up exercise, and a mangrove re plantation exercise, both of which took place at Kigamboni, south of Dar es Salaam. These events were attended by some of the participants and members of the NGO.

The Tenth WIOMSA Scientific Symposium will be remembered for three first time events that were organized as part of the symposium program.

South Africa’s flagship research vessel, Agulhas II, sailed from Durban on 18 October on a multidisciplinary monitoring and training cruise to study the southwest Indian Ocean, and arrived in Dar es Salaam on 2 November to coincide with the Symposium. Some of the Symposium participants boarded the vessel in Dar es Salaam on its return leg. The cruise was part of the on-going Second International Indian Ocean Expedition (IIOE-2), running from 2015 to 2020. On board the vessel were scientists from South Africa, Egypt, Kenya, Mozambique and Tanzania. This cruise, which aimed at creating a baseline for different parameters, sampled the seafloor and collected data on marine pollution, ocean chemistry, salinity, etc.

Most of those from Kenya, Mozambique and Tanzania, were either young researchers or university students, and for some of them it was their first time on board a research vessel for research work. This provided the young researchers and students with opportunities to learn and work with experts and senior scientists at sea to further advance their skills in marine scientific research.

Agulhas II docks in Dar es Salaam Harbour.

Hon. Mr Ali Mufuruki, Chair of the Tanzania National Environment Trust Fund (fifth from left back row) with other dignitaries during the open day.

Participants after the mangrove planting exercise at Kigamboni.
Launch of the Nansen Western Indian Ocean Book

On 31 October 2017, as part of the Tenth WIOMSA Scientific Symposium that took place from 30th October to 4 November in Dar es Salaam, United Republic of Tanzania, H.E. Hanne-Marie Kaarstad, Ambassador, Royal Norwegian Embassy in Tanzania, launched the book, ‘The RV Dr Fridtjof Nansen in the Western Indian Ocean: Voyages of marine research and capacity development’. The book gives a synthesis of the results presented in the individual survey reports of all surveys carried out by the RV Dr Fridtjof Nansen in the Western Indian Ocean from 1975 to 2016. It also gives additional information based on supplementary analyses of data taken from the Nansen Survey Information System (Nansis) database. Mr Charles Tulahi, Assistant Representative of FAO in Tanzania, also gave some remarks during the launch on behalf of the FAO. The book was edited by Johan Groeneveld of ORI and Kwame Koranteng of FAO, both of whom also attended the event together with seven of the sixteen contributing authors of the book.

The purpose of this book, which has ten chapters, is to illustrate the contribution of the Nansen research vessel and the programme through which it operates, to marine science and development in the WIO region over the period of four decades, and to highlight gaps in knowledge that can be addressed by future surveys, or by analysis of stored information.

The book was produced through a regional initiative that was coordinated by regional institutions – ORI, and WIOMSA in partnership with FAO.


WIOMSA holds an Inception meeting for the new MASMA Programme

On 28th and 29th October 2017, WIOMSA organized the Inception Meeting of the MASMA Programme at the ILO Complex, Dar es Salaam, Tanzania. The meeting brought together key existing and potential partners to launch the new 5-year Programme. The objectives of the meeting were to raise awareness about the new programme and opportunities it provides, to better define the proposed activities, to provide inputs to the proposed monitoring and evaluation framework, to discuss how to resolve some of the operational issues, and to identify and discuss implementation of common activities.
A wide range of participants attended the meeting including WIOMSA Board members, MASMA Programme Committee members, a representative from Sida as an observer, WIOMSA Secretariat, WIOMSA Country Coordinators, some of the MASMA grantees, representatives of academic and research institutions, regional intergovernmental bodies, and NGOs.

The meeting was structured in the format of plenary presentations and discussion, group discussions and partner’s presentations and discussions. The initial plenary session set out the agenda for the inception meeting, the expectations to be achieved by the end, highlighted the challenges of the region and how they have been addressed by WIOMSA in the past, future challenges and emerging issues, and how the new MASMA Programme plans to address them based on lessons learnt from previous years of implementation.

There were two group discussions. The first on the selected Priority Research Themes, and the second on the operational issues of the new Programme. The first group discussion focused on the new and emerging issues of ‘Cities and Coasts’, marine litter and ocean acidification. These are areas in which WIOMSA does not have much experience and the three teams were tasked with identifying priority areas within each in terms of research topics and objectives. This was intended to assist in identifying motivations for either place-based or space-based research relating to the theme to be used in the call for proposals.

In the second group discussion, the focus was on strategic and operational issues of the new MASMA Programme, including criteria for a successful regional research project, strategies to broaden the range of participation in MASMA calls in the region given the inherent competitive nature of research funding, mechanisms or strategies to maximise the uptake of research project outputs and outcomes, modalities for the new grant programme with particular reference to the introduction of case studies, and a fellowship programme for women scientists from the region.

The two-day meeting was concluded with statements from the various organisations that were present with regard to potential future collaboration within the context of the new MASMA Programme. Statements of support were made by senior members of several organisations with long term partnerships with WIOMSA including the Nairobi Convention Secretariat, the Indian Ocean Commission, WCS, and the Northern Mozambique Channel Initiative (NMCi). There were also presentations and statements from potential new partners i.e. Local Governments for Sustainability (ICLEI), and the African Marine Waste Network (AMWN).

The general feeling among participants was overwhelmingly positive with regard to the potential the new Programme offers for new research and for joint activities between WIOMSA and other organizations. It was felt that the meeting provided the basis for developing new and strengthening existing partnerships that would serve to enhance our efforts to address the challenges faced in the marine and coastal environment.

**WIOMSA Members Elect New Board**

Following the elections for the new WIOMSA Board of Trustees during the 6th General Assembly held on the 3rd September 2017, WIOMSA is pleased to announce the following new Board members: Prof. Yunus Mgaya who has been elected in the category of host country member, Prof. Ranjeet Bhagooli and Dr. Dominique Ponton representing the Island States, Dr. Jacqueline Uku and Dr. Louis Celliers have been re-elected in the category of the mainland states, and Prof. José Paula in the ‘out of the region’ category.

Prof. Mgaya brings a wealth of experience in governance to the WIOMSA Board having served as Chair on many Boards within and outside the region. He is a long-standing member of WIOMSA and has served as the Country Coordinator for Tanzania in the past. His vision for the Association is a strong self-sustaining organization with adequate financial resources for supporting various activities within its mandate.

Prof. Bhagooli is an Associate Professor at the University of Mauritius. His research focus is marine ecosystems, especially coral reefs. Ranjeet has assumed the role of Head of Department and has served as Acting Dean of Faculty on several occasions at the University of Mauritius. He strongly believes in working together with other relevant organizations...
including NGOs and CBOs to foster an ecologically sound and enabling environment for development of the blue economy. Prof. Bhagooli has been a member of WIOMSA since 1998 and has been contributing to WIOMSA efforts. He is currently an editorial board member of the WIOMSA journal – Western Indian Ocean Journal of Marine Science. Prof. Bhagooli aspires to strengthen regional links through setting up and furthering support to regional marine laboratories and research that will facilitate exchange of research staff and students to enhance learning and research outputs linked to addressing locally, regionally and internationally pertinent marine issues for a sustainable future for the WIO region and globally.

Dr. Dominique Ponton is a senior Research Officer at IRD, La Réunion. He has been studying fish larvae and juvenile ecology for more than 30 years. Aware of the sustainability dialogue that WIOMSA is currently engaged in, Dominique thinks the rapidly increasing number of WIOMSA members remains a great opportunity for addressing the numerous challenges faced by coastal and marine environments in the WIO region. He believes that one of the key points is to help scientists, managers, decision makers and private companies to work together more efficiently. WIOMSA can and is playing an instrumental role in stimulating the development of collaborative platforms for sharing information on countries’ species lists of organisms, developing online capacity building courses, and initiating the creation of up-to-date numeric tools to help scientists, managers and coastal populations to better work together.

All the incoming Board members (both new and returning) embody the WIOMSA spirit of Coasts Ocean People and bring talent, expertise and energy to the table. We are very fortunate to have them by our side as we continue to work towards WIOMSA's Vision of an Association that is recognized widely as a leader in promoting the development of marine and coastal science professionals, advancing marine and coastal science, and promoting the conservation and sustainable development of coastal and marine environment.

The new Board will be meeting early next year to elect the President, Vice President and the Treasurer as well as two co-opted members to complete the composition of the Board.

WIOOMSA Announces Winners of Prestigious Honorary and Fellow Member Awards

The Official Opening Cocktail of the 10th WIOMSA Symposium held on the grounds of the Julius Nyerere International Convention Centre (JNICC) on the 30th of October 2017 offered a magnificent backdrop for the WIOMSA Honorary and Fellow Membership Awards’ announcement. The opening cocktail was a truly magical evening featuring sumptuous food, drinks, a stunning body art fashion show from Makeke International, music and dance from Masafa Maalim’s traditional dance troupe, and the JNICC resident DJ. The Honorary and Fellow Awards were presented in these festive surroundings to an audience of some 560 symposium participants.

The eminent individuals who received the awards are Mr. Dixon Waruinge who was the recipient of the Honorary membership award, and Prof Michael Schleyer who won the Fellow membership award. This was the fifth time that WIOMSA has awarded experts in recognition of their track record of achievements in either development of marine science or contribution in marine science research. The awards were bestowed by Dr Jacqueline Uku, the WIOMSA President. Dixon Waruinge was on hand to accept his award while Dr Sean Fennessy accepted the Fellow Award on behalf of Prof Schleyer.

Brief Background on the award recipients

Dixon Waruinge is the coordinator of the Nairobi Convention Secretariat, with over 20 years work experience in programme formulation and coordination. He is recognised in the Western Indian Ocean (WIO) region and globally for his dedication to strengthening the linkage between science and decision makers, strengthening the involvement of the scientific community in the Nairobi Convention work program, and making the Nairobi Convention a regional platform for dialogue between governments and key players in the marine and coastal environment in the WIO. His work in building partnerships and collaboration networks is unparalleled. He has worked with many governments in Africa, non-governmental organisations, and research institutions in the diverse fields of wildlife conservation and management, biodiversity assessment and monitoring, biodiversity information management, community biodiversity conservation, and environmental impact assessment. Dixon has managed several projects in the Western Indian Ocean region and with a comprehensive understanding of international environmental law and governance, has developed cooperative agreements with global NGOs such as WWF and IUCN, Regional Economic Commissions such as the Indian Ocean Commission (IOC), and research associations such as WIOMSA. He also developed collaborative programmes with the Convention on Biological Diversity (CBD) and the World Heritage...
Convention on sites of universal value. His professional experience also includes working at FAO as a Project Coordinator responsible for projects on integrated coastal zone management including management of Marine Protected Areas in Eastern Africa.

Dixon has been instrumental in increasing the visibility and impact of the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean Region, making regular decisions in the development and oversight of activities to support development of tools and methodologies for sustainable management; use of coastal and marine resources; and providing technical direction of several substantive projects and activities.

Prof. Michael Schleyer’s unrelenting commitment to research on local and regional coral reefs has earned him admiration and respect of scientists globally and has yielded valuable information on reefs and their resources. His work has provided decision-support, leading to improved conservation measures in reef MPAs and provided input for the proclamation of the iSimangaliso Wetland Park as a World Heritage Site, as well as promulgation of the Aliwal Shoal MPA. He has successfully attracted research funding and generated numerous regional graduates and post-graduates. In terms of international recognition, results emanating from his research have been published in leading international journals and led to him to play a role in international institutions and fora. To date, he has authored or co-authored 15 scientific papers in peer-reviewed journals and conference proceedings, four peer-reviewed field notes, 25 chapters in books including a CD and a Field Guide on soft coral taxonomy, the State of the Coast report for the WIO, 62 unpublished reports, 87 conference presentations including two invited keynote addresses, and numerous popular articles. He has served as the Editor in Chief of the Western Indian Ocean Journal of Marine Science. His pivotal work in the field of coral taxonomy resulted in the description of a new soft coral genus and a number of species, and chapters on corals in a field guide on marine life in East Africa and the islands of the Western Indian Ocean.

Prof. Schleyer’s illustrious career at the Oceanography Research Institute (ORI), South Africa, spans 3 decades. Until his retirement in 2012, he directed invertebrate and biodiversity-related research at ORI, as well as several multi-disciplinary projects while personally specializing in subtropical and coral reef research off the East African coast and in the southern Red Sea. As Deputy Director of ORI, his research brief included the supervision of projects on invertebrate fisheries monitoring and management, as well as the biology of mussels, oysters, rock lobsters and other crustaceans. He has supervised 16 Masters and 16 PhD Theses. His responsibilities further included interaction on issues concerning coastal zone and fisheries management and he was responsible for numerous EIAs and consultancies. To date, his work at ORI continues as a Research Associate, focusing on the effects of climate change on coral reefs within appropriate predictive models. Other work that he conceptualised within the greater ORI Coral Reef Programme is still being executed by students under his supervision. He is the South African representative to the International Coral Reef Initiative (ICRI) and was, until recently, a local representative for the Global Coral Reef Monitoring Network (GCRMN).

Prof. Schleyer is committed to capacity building in the WIO Region and has been involved in several regional projects such as the Coral Reef Degradation in the Indian Ocean (CORDIO) Programme in Mozambique where he helped establish coral reef monitoring stations at seven sites along the Mozambican coast, he has developed and delivered capacity development courses on coral reefs and crime scene investigation. He has been involved in several regional survey projects such as TRANSMAP and an IUCN coastal biodiversity survey of the Somaliland Coast. He has also been involved in research cruises and many other projects.

40 years of Research Cooperation between Sweden and Tanzania By Emma Forsberg

This year, Sweden and Tanzania celebrate 40 years of research cooperation. Under the parole “Research for development” the Embassy of Sweden in Tanzania, together with four main partners, the University of Dar Es Salaam (UDSM), Ardi University (ARU), Muhimbili University for Health and Allied Sciences (MUHAS) and Tanzania Commission for Science and Technology (COSTECH), arranged a conference in Dar Es Salaam on the 8-9 November 2017 at Park Hyatt Hotel, the Kilimanjaro.

As a Swede currently living in Tanzania, I could not resist attending the conference to learn more about how Sweden’s support to Tanzania has looked like over the last 40 years, which kind of projects that have been carried out and the kind of results the research has produced.

The conference schedule covered different research areas where Swedish support has been directed. This included research on malaria, HIV/AIDS, marine science, energy,
Among all the research projects supported during these years, there are several projects related to marine sciences. During the conference, there were two presentations specifically on marine science research. On the first day, Dr. Flower Msuya from the Institute of Marine Sciences of the University of Dar es Salaam (IMS) presented on “Evidence based knowledge and its importance for society at large – IMS researchers support to coastal communities and cluster forms living of marine resources”. On the second day of the conference, Dr. Matern Mtolera from IMS presented on “Sustainable use of marine resources and poverty alleviation in Tanzania coastal zones”. Through these two presentations, the audience got a glimpse of the progress made in marine science during these years of research cooperation.

Other than the speeches and presentations, there was also an exhibition just outside the conference hall where different organizations presented their work with demonstrations and posters. At the end of each conference day, there was time for networking and entertainment by a band playing Swedish folk music.

Attending this conference made it clear that the research cooperation between Sweden and Tanzania has been very successful during the last 40 years. We are looking forward to seeing what the next 40 years of cooperation results in.

The Nairobi Convention Hosts Regional Meetings on Marine Spatial Planning

The Nairobi Convention partnered with Blue Solutions, (represented by GIZ, GRID-Arendal), WIOMSA, IOC/UNESCO, IUCN and UN Environment World Conservation Monitoring Centre (UNEP-WCMC), to host three trainings in relation to the Convention’s work program on Marine Spatial Planning. The meetings which included a workshop to consider Marine Spatial Planning, a meeting on Area Based Planning Tools for Areas Beyond National Jurisdiction, and a meeting on the Marine Spatial Atlas for the Western Indian Ocean (MASPAWIO) and Sea Mounts Projects took place at the Avani Barbarons Beach Resort and Spa in Seychelles on the 13-15 November 2017. Participants were drawn from the representatives of the Contracting Parties of the Nairobi Convention, the Nairobi Convention Focal Points, experts, partners and practitioners of Marine Spatial Planning. The focus of the workshops was to share information on Marine Spatial Planning (MSP) and how the countries of the Western Indian Ocean can apply it at a national level.

During the MSP meeting, UNEP-WCMC shared their experiences in implementing MSP globally. The focus of the discussions was on the challenges and enabling factors for MSP and the lessons learnt or the best practices in cross border MSP. From a regional perspective of implementing MSP, The Nature Conservancy (TNC) discussed the Seychelles Marine Spatial Planning Initiative underscoring the Debt for Nature Swap pathway to MSP that the country has embarked on. South Africa’s actions to enable MSP was expounded on by the Council for Scientific and Industrial Research. Participants undertook a practical training exercise on Blue Planning in Practice (BPPIP). The purpose of the training was to strengthen practical planning and implementation informed by decades of practical experiences and learning in the field. This course aimed at providing participants with an introduction to the theory and practical starting points of coastal and marine spatial planning (how to repackage information and implement a blue planning process). Inspired by real-life conditions, participants surveyed the fictitious country of Bakul, a case closely based on real-life conditions and challenges. The training course offered participants the opportunity to approach the Blue Planning aspects of identification of need, process design, development of
a shared vision, objectives and goals, organization of stakeholder participation, and inventory and analysis of current and future conditions. Other aspects included drafting and approving the spatial management plan, implementation and enforcement, monitoring, revision and adjustment.

During the meeting on Area Based Planning (ABP) tools for ABNJ, participants were introduced to the FAO and UNEP - WCMC Deep Seas Project and its ABNJ work in the Nairobi Convention area as one of the pilot sites to test ABP tools for the management of ABNJ. The project outputs and the sharing of knowledge attained from the project was discussed. Some of these outputs include case studies of regional ABNJ area-based planning, suitable ABP tools for ABNJ, a study on ABNJ governance and legal frameworks, an inventory of ABNJ datasets, a study of ecological and ecosystem service connectivity between EEZs and ABNJ, a capacity development assessment and action plan, knowledge sharing workshops, and engagement with appropriate sectors through specific work groups and policy messages. The workshop participants discussed the national and regional action plans to support Ecosystem Based and Area Based Planning. These will be prioritized by the Nairobi Convention Secretariat into concrete action plans to be implemented in the Convention’s work plans.

The MASP AWIO and Sea Mount Projects meeting discussed the MASP AWIO project that is implemented by IUCN Global Marine and Polar Programme, and CORDIO East Africa. The focus was on sharing knowledge on MSP from the MASP AWIO open access geospatial data repository for the Western Indian Ocean for marine spatial datasets, sharing results from the marine larval connectivity and habitat degradation scenarios in the Western Indian Ocean study, and sharing information on orientations for regional cooperation for MSP in the Western Indian Ocean. During the meeting, participants discussed regional activities to support the implementation of a regional approach to MSP in the WIO. The project on “Conservation and sustainable exploitation of seamount and hydrothermal vent ecosystems in areas beyond national jurisdiction of the South West Indian Ocean” that is being implemented by IRD, IDDRI, MNHN, Oxford University and other partners including the FAO-UNEP Deep Seas project, shared the lessons learnt from this project, focusing specifically on the study on Marine Larval Connectivity Between SWIO Seamounts, Deep sea ecosystems and physical processes and biological populations around seamounts, and the Walter Shoal Campaign which was an expedition to the Walter Shoal Sea Mount 700km south of Madagascar.

The outputs from the MSP meetings will be discussed at the Nairobi Convention Focal Points meeting in March 2018.

**Nairobi Convention hosts SAPHIRE Inception and WIOSAP Steering Committee Meetings**

*The Nairobi Convention held two parallel project meetings in Seychelles on the 16th November of November 2017. The ‘Western Indian Ocean Strategic Action Programme Policy Harmonization and Institutional Reforms’ (SAPHIRE) Project held its Inception meeting while the ‘Implementing the Strategic Action Programme for the protection of the Western Indian Ocean from land based sources and activities’ (WIOSAP) Project held its 1st Project Steering Committee (PSC) meeting. The meetings were held over 2 days with the second day, 17th November 2017, being dedicated to a joint meeting between the two Projects.*

The purpose of the SAPHIRE inception meeting was to discuss the roles and responsibilities of various project partners, to enhance the awareness of the partners and stakeholders on the various components and activities of the project, discuss the workplan and budget of the first year of implementation, and the decision-making structure. The objective of the WIOSAP PSC meeting was to discuss the workplan and budget of the WIOSAP project.

The joint meeting discussed the synergies between the two projects, the cross cutting activities and the development of a joint implementation framework for the cross-cutting activities. The joint meeting discussed the advantages for collaboration between the two projects which are both executed by the Nairobi Convention Secretariat. They both build on previous projects (ASCLME/WIO-Lab), both serve the same constituents, the countries of the Nairobi Convention Contracting Parties and, working together, both projects cover the continuum from ridge to reef and
A cross section of participants at the joint SAPPHIRE and WIO-SAP meeting.

beyond (land-to-sea integration) and from the EEZ to ABNJ (ocean continuum). The activities that could be jointly implemented include marine spatial planning, capacity building, ecosystem monitoring and surveillance, water quality monitoring, and ecosystem valuation. The models for collaboration discussed included the sharing of certain staff members between the two projects (for example National Project Managers and Demonstration Site Managers), joint working groups and work plans, and a Scientific and Technical Advisory Panel (established under SAPPHIRE) that can provide advice on the implementation of the LME SAP and provide support to both projects. The joint meeting also discussed the alignment of time frames for the joint activities with a need to fast track SAPPHIRE activities so that it can catch up with WIO-SAP.

The next steps for the two projects include the recruitment of the Regional Project Managers, the constitution of the PSC for the SAPPHIRE, and a meeting of the Project Task Forces to iron out the collaboration framework and mode of operation.

ABOUT WIOMSA

A 5-year GEF funded project whose aim is to reduce impacts from land-based sources and activities and sustainably manage critical coastal and marine ecosystems through the implementation of the agreed WIO-SAP priorities with the support of partnerships at national and regional levels. The funding amount is US $ 10,867,00 USD. The implementing agency is UN Environment. The geographical scope: Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania and France (is not a project beneficiary)

ABOUT SAPPHIRE

The 5-year SAPPHIRE Project builds on the previous work completed under the UNDP supported GEF financed Aguilhas and Somali Current Large Marine Ecosystems (ASCLME) Project in close collaboration with a number of partners. The SAPPHIRE Project aims to support and assist the appropriate and formally mandated government institutions and intergovernmental bodies in the region to implement the activities which they require to deliver the ASCLME SAP and to ensure sustainability of efforts and actions toward long-term management of activities within the LMEs as well as the sustainability of associated institutional arrangements and partnerships. The project funding is US $ 8,766,500.00. The implementing agency is the United Nations Development Programme. The geographical scope: Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania and (France is not a project beneficiary)

WIOMSA Teams Up with Partners on a Field Visit to Southwest Madagascar

WIOMSA and four regional and international partners (Coastal Resources Centre of the University of Rhode Island, Blue Ventures, Marine Parks and Reserves Unit, Tanzania, and the Kenya Wildlife Service) are implementing a series of layered activities rooted in two field sites (see Fig. 1) across three countries and linked regionally, that advance innovations in marine conservation in East Africa. The project is funded by the US State Department and runs for two years from September 2016 to September 2018. The project goal of achieving increased management effectiveness of MPAs/LMMAs in eastern Africa will be achieved through the application of innovative compliance strategies, supporting leadership, and regional networking.

As part of the process of regional networking, a week-long field trip and workshop was organised by Blue Ventures to the southwest coast of Madagascar from 18 to 26 July 2017. Two leaders of Beach Management Units in southern Kenya and two from northern Tanzania joined representatives from WIOMSA (Tim Andrew), CRC (Glenn Ricci), KWS (Arthur Tuda), and Blue Ventures (Kitty Brayne) on the visit which coincided with the annual re-opening of the octopus fishery in the Velondriake LMA. The group were hosted by the villagers of Andavadoaka, a small fishing village of around 550 people, approximately 160 km north of the regional capital of Toliara, and were accommodated by village households through their innovative homestay programme.
Octopus fishing is the mainstay of small-scale fisheries in southwestern Madagascar, providing both subsistence and income for coastal communities. When fishermen in the remote village of Andavadoaka reported a decline in octopus catches in 2004, Blue Ventures supported community members to establish a small temporary octopus fishing closure in the hope of boosting productivity. This resulted in a substantial increase in octopus landings and fisher incomes, which encouraged neighbouring communities to adopt the approach. This temporary closure model has since been replicated more than 300 times in Madagascar and beyond. These successes kick-started further conservation efforts in the region, including the development of Velondriake – Madagascar’s first Locally Managed Marine Area (LMMA) – followed by the creation of a regional octopus fishery management body that works with communities to manage the fishery across southwestern Madagascar. This model of community based fisheries management through short term fishery closures has helped catalyse a growing LMMA movement in Madagascar, now covering over 150 sites across over 14% of the country’s inshore seabed and reaching over 250,000 people country-wide.

In the early morning of 22 August, a day of low spring tides, fishermen and fisherwomen set off in their laka, traditional fishing boats, towards the island of Nosy Fasty to take part in a traditional fomba ceremony to ask for their ancestors’ blessing on this important day. After passing around a small bottle of rhum, the villagers climbed back into their laka, slowly making their way to the fishing sites to await the signal that the fishery was officially open. From that point, the reefs teemed with determined octopus hunters until the sun finally dipped below the horizon.

Temporary octopus fishery closures have played an increasingly important role in the management of the fishery across southwest Madagascar over the last 15 years. This year, an incredible 5,359 fishermen and women from 28 villages came out to celebrate the openings of 15 temporary closures across Velondriake and two of the neighbouring LMMA. Fishers of all ages, from teenagers to great grandmothers, took up their traditional voloso spears to participate in the opening, harvesting over 4.1 tonnes of octopus in the Manjaboake LMMA, 450 kg in the Teariaka LMMA, and 5.8 tonnes in Velondriake.
The group joined fishers from Andavadoaka on the reef flat at low tide during the octopus re-opening to observe firsthand how the fishery operates. “I’ve never witnessed anything like this before – a community coming together to open a closure that they themselves decided to close voluntarily. It’s very rare to find community mobilisation and collaboration like this. I hope to be able to share this with my community and encourage them to follow this example,” said Mwaponda Said Athumani, a BMU leader from Tanzania, after attending the reserve opening.

Overall, the exchange visit and associated workshop discussions were extremely useful for the visitors from Kenya and Tanzania. They were greatly enthused by what they had witnessed, and undertook to share their experiences and new ideas with their counterparts back home. It is anticipated that a reciprocal visit by fishers from Velondriake to the transboundary area between Kenya and Tanzania will be undertaken during 2018 to further the learning-through-exchange process.

**R boot-camp: a post mortem**

*By Joseph Maina*

When the Beatles sang, ‘The best things in life are free...’, they certainly didn’t have a freely available open source computer software in mind.

If there is anything that has revolutionized the scientific research world in recent years, it is the open source R statistical computing environment, which is increasingly becoming a standard platform for scientific data analysis and modelling, visualization and reproducible research. Aided by the power of the internet, open source, and a wide network of developers and users, R has become a powerful tool that is increasingly becoming the norm rather than an exception. The large user and developer-base ensures that there is consistent support, maintenance and updates of R software and the associated packages. For these reasons, institutions of higher education globally have begun to incorporate R into their curriculums of computing and statistics. It is on this background that the initiative to run introduction to R workshop for scientists in the WIO was formed.

Supported by WIOMSA, the course was organized by Joseph Maina, a Spatial Information Scientist based at Macquarie University (MQU) in Sydney, Australia, and Emily Darling of the Wildlife Conservation Society. The training team comprised of Dr. Joseph Maina, Dr. Andrew Allen - a Theoretical Ecologist and Biostatistician at MQU, Dr. Matt Kosnick - a Palaeontologist also at MQU, and Stephanie D’agata formerly of WCS Madagascar and currently a postdoctoral research fellow at MQU.

From a pool of over 100 applicants, 30 participants were selected. Workshop participants congregated in Dar es salaam on 27-29 October 2017 for a three-day workshop. They comprised of a heterogeneous cohort of 13 women and 17 men, drawn from all countries in the WIO including the Island states. The course was offered in English, with Dr. D’agata at hand to ensure that our French speaking friends were not disadvantaged. Participants ranged from those who used R regularly, to those who had never heard or had any experience with R or any computer programming environment prior to the workshop.

Stellar is the key word that best describes the workshop logistics – with a hotel rooftop setting, the logistical support at hand by Ms. Lilian Omolo, and the supportive hotel staff who ensured that we had a continuous supply of potent coffee brew, the workshop was setup for success from day 1.

The course consisted of short lectures interspersed with many hands-on exercises. The hands-on three-day event covered core skills on using R programming to explore data from a variety of sources and by building inferential
models and generating publication quality charts, graphs, and other data representations. As one cannot become an expert in R from three days of training, the main objective was to provide a basis upon which the participants could build on to become intermediate or advanced users.

Day 1 of the training was perhaps the most difficult, as the programming basics were introduced. By day 2, however, participants had begun to ease into the art of programming and were writing basic codes in R for tasks such as loading and manipulating data and plotting. Day 3 was perhaps the most interesting for most of the participants, going by responses from the anonymous survey. As Dr. Allen went through a lesson on performing in R statistical procedures such as (M)ANOVA, linear models etc, which were familiar to most albeit in other not-for-free statistical programs such as SPSS, Minitab etc, one could see the appreciation among participants, and perhaps surprise at the ease at which familiar analytical tasks could be carried out in R computing environment. There was quite a lot to take-in over the three days, a sentiment alluded to by most participants in the anonymous survey, with calls to extend the duration of the training from 3-5 days. Despite this, however, there was a general consensus that the course was a hit, couldn't have come sooner, and that the course objectives were largely achieved.

The training team were equally impressed by the enthusiasm displayed by the participants. They had never come across such an enthused group of trainees, where the attendance was full house over duration of the course, not to mention the level of engagement and skills. These made the long trip across the Indo-pacific worthwhile for the training team.

Considering the future, R users’ community group was setup to provide support and general quantitative advice through an email list wiorquantitativeadvise@googlegroups.com. Anyone can subscribe to the email list by sending an email to moderator joseph.mbui@mq.edu.au or via this link: https://groups.google.com/forum/#!forum/wiorquantitativeadvise/join. Further, the workshop materials are now archived at a GitHub repository, found at: https://github.com/WIORWorkshop/WIO-R-WORKSHOP-2017. These are accessible and editable by anyone. The trainers will continue to update the materials on this repository to keep them current. Given the high expression of interest to learn R statistical language in the region, there will be certainly another Introduction to R workshop during 2018. Decisions on the location have not been finalized, suggestions or offers to host the course are most welcome.

The training team appreciates Julius & Lilian of WIOMSA, Macquarie University, Emily D. of WCS, and all the participants from 2017 R workshop for making the WIO R boot-camp a great experience to everyone involved.

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**Senior government officials attend Leadership workshop**

The Secretariat of the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean region, in collaboration with the Division of Environment in the Vice President’s Office of Tanzania and WIOMSA, organized a 3-day Leadership Training course on the management of the coastal and marine environment from 4-6 October 2017 in Tanga, Tanzania. The course was attended by twenty-three senior government officers from relevant Ministries and departments, and followed the first course that was held in July in Mombasa, Kenya for senior government officers from both central and county governments. The course was opened officially by Eng Ngosi Mwiha, the then Deputy Permanent Secretary in the Office of the Vice President
Union Affairs and Environment, on behalf of the Permanent Secretary. He emphasized in his remarks the importance of “leaders being Champions as Champions bring new ideas to fulfillment and have the capacity to identify and correct errors. They change the status quo, seek, create and close opportunities. They challenge conventional wisdom, even when conventional wisdom is correct.”

The training was organized pursuant to Decision CP8/6c of the Eighth Conference of Parties to the Nairobi Convention relating to support and partnership for implementation of the Strategic Action Programme for the Protection of the Western Indian Ocean from Land Based sources and activities. The third course will be organized in Seychelles in March/April 2018.

The training equipped senior policy makers with leadership skills for better advocacy on the use of integrated approaches to the management of the coastal and marine ecosystems within government, and in partnerships with regional and global stakeholders. The training also equipped participants with skills necessary for the development of informed decision-making that is critical in the management of oceans.

Strategic Environmental Assessment Training held in Tanzania

NIRAS Natura and WIOMSA hosted Phase 4 of the Strategic Environmental Assessment (SEA) Training in Dar es Salaam on the 11-26 September 2017. The training was the 2nd in a series of capacity development trainings on SEA for which WIOMSA coordinates the Tanzania component. Twenty-six participants from Kenya, Mozambique, Tanzania, Zambia, Ethiopia, Uganda and Rwanda attended the two-week training held at the Bahari Beach Hotel in Dar es Salaam and the Millenium Sea Breeze Hotel in Bagamoyo.

Participants underwent lectures on SEA practice in Africa: the challenges and the strategic issues, the application of SEA in Tanzania, strategic development issues in Tanzania - options and challenges, practical tools for SEA, perspectives on the National Planning Process and the new Bagamoyo Port - the background to the Bagamoyo Port development process, regional and local government planning, and change management. The training included group work, discussions and a simulated SEA exercise on the planned Port of Bagamoyo and its associated infrastructure development projects. During the exercise, participants spoke to various stakeholders involved in the project or who will be affected by the project such as the District Administration in Bagamoyo, the Mbegani Village Administration, and the Principal of the Fisheries Education and Training Agency (FETA), to get an in-depth view of their perceptions on the planned Port and how it will affect stakeholders and Bagamoyo District. During the training, participants had the opportunity to discuss and visit ongoing planning projects such as the SEA for the Dar es Salaam Urban Transport Master Plan, and the Star City Plan and SEA. Other field visits were to the National Museum in Dar es Salaam, the Historical Bagamoyo Museum, and the NIRAS Tanzania Office.

The objective of the SEA Programme is to strengthen capacity of the participants and their home organisations in conducting strategic environmental assessment and to integrate the environment in strategic planning, decision making and implementation. The SEA Programme is structured into five compulsory phases. The inception phase involves the participants being assigned mentors and initiating a SEA Project in their home organisations. Phase 2 is a 3-week training course in Sweden that involves lectures, study visits, and exercises based on developed training modules. Phase 3 is the implementation phase where the participants implement the SEA projects that were launched in Phase 1. Phase 4 is a two week training course where participants share experiences on implementing their projects, elaborate their work plans and conduct a simulated SEA field exercise on proposed infrastructure projects. Phase 5 is the conclusion of the SEA Projects and participants hold workshops in their home countries to showcase their projects. At the end of the Training Course, it is expected that participants have increased knowledge of different approaches to environmental assessment of policies, plans and programmes, increased knowledge of methods and tools for integrating SEA in strategic planning and decision making, a greater understanding of international and regional experiences in developing regulations, guidelines and procedures for implementing SEA in practice, and strengthened international, regional and national networks in the field of SEA. The next training in the series is expected to take place in May 2018.
The Fifteenth Marine Science for Management (MASMA) Grantees Meeting

Meetings of the Marine Science for Management (MASMA) Grantees are a progress evaluation exercise that offers two-way communication between approved MASMA project teams and the Scientific Programme Committee (PC). The Fifteenth MASMA Grantees Meeting: Monitoring the Performance of the Approved Projects, was held in Dar es Salaam on the 26th October 2017. This was the final meeting in the current MASMA phase and all four MASMA projects in attendance are in their final year of implementation. These projects are: Advancing adaptive co-management of small-scale fisheries in East Africa (Co-management); Responses of Biological Productivity and Fisheries to Changes in Atmospheric and Oceanographic Conditions in the Upwelling Region Associated with the East African Coastal Current (PEACC); A socio-ecological assessment of fisheries in three estuarine systems of the SW Indian Ocean – identifying essential links for improved governance (Estuarize WIO); and BY-Catch Assessment and Mitigation in Western Indian Ocean Fisheries (BYCAM). Each project was represented by two team members, including Principle Investigators (PIs). Also in attendance were 7 members of the PC and 3 WIOMSA Secretariat staff. The meeting availed project teams the opportunity to show case the scientific progress of their projects, to outline how they have addressed PC comments from the previous Grantee meeting and to report on the progress in the implementation of their project’s proof of concept and the project outcomes.

A short summary of the projects and their status of implementation is provided below.

The Co-management project aims to strengthen understanding of community management capacity, in existing co-management initiatives in Kenya, Madagascar and Tanzania. The project has facilitated the completion of the co-management plan for Kururwitu BMU and reviewed the MPA plans already existing in Madagascar. It completed an institutional design principles survey in Madagascar, a gated trap study funded by the Kenya Coastal Development Project (KCDP) in Kenya and ecological, socioeconomic and baseline institutional surveys in Tanzania. The project collaborated with Fisheries management authorities in all the sites.

The BYCAM project aims to assess target and non-target vulnerable megafauna in the Western Indian Ocean (WIO) and to develop realistic bycatch mitigation measures and recommendations for governance and management across the region with case studies in Kenya, Madagascar, Mozambique and Zanzibar. The project has completed baseline data collection for fisheries catch, fisheries effort, socio-economic and governance data and indicators. It has engaged stakeholders in SWIO artisanal fisheries mainly from gillnet and longline but also handline and semi-industrial prawn trawl fisheries. Further, it has completed the development and trials of mitigation devices for drift gillnet fisheries in Zanzibar and the same is ongoing for Kenya.

The PEACC Project investigates the ecosystem impacts of meteorological and oceanographic conditions in the upwelling region associated with the East African Coastal Current (EACC) system. It aims to establish relationships between upwelling, marine productivity and the associated fisheries. The project will provide management action points to enhance coastal community resilience to vulnerabilities associated with these changes. It uses geophysical modelling and application of remote sensing tools to examine changes in upwelling and productivity. These are validated using field sampling in strategic coastal sites in Tanzania and Kenya and socio-ecological surveys to assess social vulnerability. The project has completed the configuration and running of the geophysical model as well as field data collection in Tanga using biometric and catch data, as well as data on nutrients, chlorophyll-a, zooplankton and other environmental variables.

The ‘Estuarize WIO’ project aims to assess the Socio-ecological Systems (SES) that govern resource-use by communities living next to estuaries, but which are now under increasing pressure from human population growth, resource depletion and environmental change. The project relies on existing long-term datasets and limited field sampling to compile validated information bases for the Bons Sinais (Mozambique), Tana (Kenya) and the Rufiji / Ruvi estuaries (Tanzania). It has undertaken field sampling to collect hydrological measurements, to conduct household questionnaires, describe fishing gear and catch composition, and ground-truth satellite images in the Bons Sinais and Tana.
**2016 Annual Report**

The new look WIOMSA Annual report features WIOMSA’s vibrant new logo and showcases the Association’s new corporate brand colours. The 78-page annual report takes an in-depth look back at WIOMSA’s past year and provides an overview of each of the Association’s programme activities. A special highlight of the report is the findings and recommendations of the external evaluation of WIOMSA that was conducted in 2016. Details captured in both the evaluation report and in this annual report reveal a strong performance of the MASMA program that has propelled forward efforts to deliver value to the WIO region through programs and services. The report outlines the work that WIOMSA and partners are doing in Marine Protected Area Management in the Western Indian Ocean, the valuable partnerships that were fostered during the year and WIOMSA’s role in strengthening research capacity. The report also summaries key regional events that the Association supported in 2016.

**WIO Journal of Marine Science: Special Issue**

The Special Issue of the WIO Journal of Marine Science entitled “Coral reefs of Mauritius in a changing global climate” is out. This issue comprises some of the papers presented during the Ninth University of Mauritius Research Week (UoM RW) held from 19-23 September 2016.

i) Photophysiology of *in hospite* zooxanthellae in diseased and non-diseased scleractinian corals from Belle Mare, Mauritius – S. Mattan-Moorgawa, D. Kaullysing, N. Taleb-Hossenkhan, S. DDV Rughooputh, R. Bhagooli


iii) A comparative analysis of nucleic acid extraction methods on marine gastropods belonging to the genera *Planaxis*, *Cypreae* and *Drupella* from Mauritius – A.B.Z. Nandoo, N. Taleb-Hossenkhan, R. Bhagooli

iv) A comparison of the density and diversity of intertidal benthic molluscs at a sheltered and an exposed tropical coast around Mauritius Island – D. Kaullysing, N. Taleb-Hossenkhan, B.G. Kulkarni, R. Bhagooli

v) Aspects of the biology of *Platorchestia fayetta* sp. nov. (Crustacea, Amphipoda) at Poste La Fayette, Mauritius – S. Beelthah, C. Appadoon

vi) Recent acceleration of Sea level rise in Mauritius and Rodrigues – S. Ragoonaden, J. Seewoobadhuth, I. Cheenacunnnan


ix) A first field report of various coral-eating gastropods and associated infestations around Mauritius Island, Western Indian Ocean – D. Kaullysing, N. Taleb-Hossenkhan, B.G. Kulkarni, R. Bhagooli

x) Detecting membrane progestin receptor (mPR)-interacting compounds from coral seawater in Mauritius – T. Tokumoto, S. Kodani, T. Miyazaki, Y. Suzuki, B. Casareto, T. Bahorun, R. Bhagooli

xi) Chemical and biological characteristics of Albion reef in the South-West of Mauritius Island with special reference to primary production and N. fixation of benthic substrata – B.E. Casareto, R. Bagooli, H. Fujimura, Y. Suzuki

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**Locally managed fisheries in the Western Indian Ocean: a review of past and present initiatives**

WIOMSA is pleased to publish this report by Melita Samoïlys, Kennedy Osuka (both CORDIO), Nywira Mathiga (WCS), and Allisdair Harris (Blue Ventures) as part of its Book Series. The report was edited by Tim Andrew of WIOMSA and was prepared for the John D. and Catherine T. MacArthur Foundation as part of the project on ‘Designing a Regional Network for Western Indian Ocean Local Fisheries Management to Build Community Capacity and Governance Frameworks’ carried out by WIOMSA and partners from 2014 to 2016. The project was aimed at investigating the feasibility of establishing a regional network for locally managed fisheries in the WIO, focussing on Madagascar, Mozambique, Kenya and Tanzania. The purpose of such a network would be to facilitate wider and more rapid uptake of effective and replicable local fisheries management approaches.

The review first describes the nature of small-scale coastal fisheries in the WIO, the issues and problems that they face, provides some historic perspective by country, and explains the legislation behind their management. Case studies of successful local fisheries management approaches are then presented. The report is concluded with a discussion of these case studies in the context of the potential for a regional network for locally managed fisheries in the WIO.

Limited hard copies of this report in English, Kiswahili, and French will soon be distributed to the countries involved in the study, but the report is also available electronically on the WIOMSA website in all these languages (downloadable from: [http://www.wiomsa.org/book-series](http://www.wiomsa.org/book-series))
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