



ANNUAL REPORT 2013



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Candidates doing their patrol reports, Salary, Madagascar.

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A Season for Change

2013 was a year in which a lot of changes occurred in WIOMSA. Following the election of the new Board in October 2013 during the Fifth General Assembly, my exciting term as the WIOMSA President came to an end! Prof Salomao Bandeira the Vice President, Dr. Indumathie Hewawasam and I completed the maximum two terms that we could serve consecutively as Board members while Prof Rudy van der Elst and Prof. Nils Kautsky opted not to seek re-election in October 2013. It has been a great pleasure and privilege for me to lead WIOMSA and the Board of Trustees over the last 4 years. I cannot thank enough the outgoing Board members for their dedicated commitment, tireless focus to the cause of WIOMSA. Our many Board meetings and discussions were characterised by the flow of innovative ideas and game changing thinking which have contributed immensely to raise the credibility and visibility of WIOMSA in the region and beyond.

My colleagues on the outgoing Board and I have grappled with the issue of change and what makes for a successful and sustainable organization. We determined quite early on that our core agenda and priority would be the setting of building blocks that would ensure that WIOMSA continues to grow in financial and human capital. We have worked tirelessly on strategies for making WIOMSA a sustainable organization as it moves into the future. Most of our decisions and strategic actions over the period 2010-2014 have been geared towards achieving these ends. In 2013, we embarked on an ambitious organizational assessment and the development of an exit strategy for our primary donor. This exercise is being finalized but as the content of the draft report is being threshed out and shaped, we have posed the same question over and again. "Can WIOMSA redesign itself to take on board the challenges of a far more complex world, so as to continue the roll out of cutting edge solutions for the benefit of coastal communities? Can it adjust its optic to accommodate the needs of the nations of the region?" We have dealt with questions normally reserved for businesses, like niche positioning, branding, client base (who uses our products) and visibility. Strategic questions, of importance to any successful organization, which we debated over long hours included, how do we test our mission, what is WIOMSA's theory of change, how do we remain relevant, and what will the future WIOMSA look like? We



have pondered the question of whether an organization like WIOMSA is needed in the region, and our answer is an emphatic yes- to borrow the words of Hubert Curien, a former European Science Foundation President, "If WIOMSA did not exist, it is clear that it would have to be invented – urgently!"

There is a general consensus amongst the Board that the key success factors for WIOMSA as a Non Governmental Organization and membership Association lie in the strength of our membership and our agility at reading the needs and demands, identifying gaps and opportunities within the region and adapting ourselves to respond to these. I can testify from personal experience that when WIOMSA was established 20 years ago, this region was characterized by very many lacunae in marine science and management. These included very few marine scientists, the majority of them being fisheries biologists, no mechanisms for setting research priority at the regional level, poor dissemination and communication of research results to stakeholders including governments, little research collaboration amongst scientists in the WIO, sporadic links to management issues; and the absence of a relevant research grants programme. WIOMSA set out to systematically and strategically change this situation and we have largely succeeded. While at the beginning WIOMSA was strongly academically oriented, I myself have pushed hard over the last 20 years for our work to be more management oriented and of practical benefit to coastal communities. Today, I am gratified to see that it is more broadly linked to capacity building as well as linking of science to management processes at different governance levels. It is clear to me that now, more than ever, many opportunities stand within WIOMSA's reach. The question is how to seize these opportunities and fulfill our vision for underpinning the sustainable development of the coastal and marine environment with sound science.

When I reflect on my Presidency, the term "game changing" comes to mind as there have been monumental and significant "shifts" for the Association. I will limit my discussion to highlighting some key decisions and achievements during my tenure that I believe will shape WIOMSA going forward. The 2009 decision by the 4th General Assembly to accept the Board's recommendation for the establishment of a consulting function in WIOMSA as part of the Resource Mobilization

Strategy led to the consultancy function being based within the WIOMSA Secretariat and the recruitment of the Director of Outreach and Resource Mobilization in 2010. As a result of these bold moves, WIOMSA has begun to see an increase in the diversity of income streams. In 2013 for example, we attracted funding from the IOC/UNESCO, FAO, UNEP, EU through Smartfish project, NOAA, and MacArthur Foundation. It was the first time that we were successful in attracting funding from the MacArthur Foundation, a US-based foundation. From these efforts, adequate funds have been raised in 2013 to cover the position of the Director of Outreach and Resource Mobilization as well as contribute to the capitalization of the WIOMSA Trust.

Achieving financial sustainability is a goal that many not for profit organizations strive for and many of them attempt to seek donors for the setting up of an endowment fund. The launch of the WIOMSA Trust (WIT) in 2012 will go down as one of the Association's most significant achievements in the path towards financial sustainability. My Board was instrumental in the establishment and launch of the Trust and in gaining agreement from the Government of Sweden to put in an annual contribution towards the trust for at least 5 years. We have been very privileged as an organization to engage with a donor that not only shares our goal of financial sustainability but is also actively contributing towards its realisation. The rationale behind the Trust is that it will be an incremental funding vehicle that will provide WIOMSA with a reliable source of funding that will initially fund a certain percentage of the Association's core costs and eventually fund research programs in the region. The priority for the Board in 2013 was to set up mechanisms for the operation of the Trust and identify investment goals and firms to work with. The Board pushed its knowledge envelope by seeking and analysing a number of proposals from investment firms. I am happy to say that despite the challenges we were able to comprehensively analyse these proposals in time for the incoming Board and the WIT Trustees to make decisions with us. We also set the grounds for the establishment of an investment policy document that will state what the Board and Trustees attitudes towards risk are and will also look at ethical considerations. I am confident that we have made the right decisions on the Trust and that the incoming Board will take on this amazing project and run with it. As someone who has a business background and interests, I will remain keenly interested in the development and growth of the WIT.

Another major transformation has been in the direction and the kind of research that WIOMSA engages in. The new Marine Science for Management (MASMA) programme "Coping with Global Change, Consolidating the Gains" that runs from 2012 to 2017 is a radical shift from the traditional research for information approach that WIOMSA has supported in the past. We made this move with the realisation that our past MASMA projects concentrated on filling information gaps that were prevalent when WIOMSA was established. However the reality today is that the most effective way to ensure that our research outputs result in meaningful change is to implement demonstration projects

which test various components, known as a proof of concept approach. The focus of our current program is thus to support research that will ultimately contribute towards the creation of enabling conditions for sustainable coastal and marine management and lead to behavioural and societal change. Our Program Committee approved five research projects for funding in 2013 and all of them have included different types of demonstration activities. The approved research projects have involved actors who have not been typically involved in WIOMSA-supported research activities including government departments, community-based organizations and the private sector. My Board also selected new members of the MASMA Program Committee in 2013 to respond to the need for expertise in innovation and action research.

Fostering partnership has been a keystone for WIOMSA. We developed partnerships of great purpose to find lasting solutions for marine and coastal management. During my tenure, two key MOUs were signed, first with the Indian Ocean Commission (COI) in 2012 to jointly coordinate work and activities and secondly with the Secretariat of the Convention of Biological Diversity (CBD) to leverage the expertise and experience of the convention partners to support building of scientific, technical and policy skills in the area of biodiversity. In 2013, WIOMSA developed 3 new collaborative partnerships with the Rhodes University of South Africa (for the implementation of the 'Registration and Licensing Pilot Project'); with CORDIO, Wildlife Conservation Society, WWF and Conservation International (for development of proposal on development of a Locally Managed Fisheries Network for submission to the MacArthur Foundation) and with the Nairobi Convention and the UNEP's Division of Early Warning and Assessment (for production of the WIO Regional State of the Coast Report).

Having been the longest serving WIOMSA Board Member, and President for some 4 years, I could have become blasé about what this regional NGO has accomplished. However, I was constantly reminded this past year of what really makes WIOMSA tick. It is the people who apply their time and creativity to exploring the questions about our environment, our communities and our governance issues and propose solutions. These are the MASMA Program Committee under the Chairmanship of Ian Bryceson, Michael Schleyer and the entire editorial team of the Western Indian Ocean Journal of Marine Science, the WIOMSA Country Coordinators and the trustees of the WIOMSA Trust. The Government of Sweden has been very generous in their support to WIOMSA, enabling us to turn our goals and ideas into reality. I feel privileged to have worked with Claes Kjellstrom and from 2011, with Gity Behravan who have provided guidance and advice that has ensured that the long term support by the Government of Sweden is optimized for the benefit of the region. Other partners, and donors who enable much of what we strive to do as an organization must not be forgotten. One final group of people is the Secretariat that has been essential in making WIOMSA an effective place to work. In signing my 4th and final Annual Report it is hard for me to express all my feelings, gratitude and admira-

tion for all the talented and dedicated people I have had the opportunity to work with. I thank you all for your support. It is a season of change for the leadership of WIOMSA and I pass on the baton to Dr. Jacqueline Uku. I do so with much comfort, and secure in the knowledge that the outgoing Board has done a remarkable job. Each President has built upon the accomplishments of their predecessors to make WIOMSA what it is today - indeed I am humbled that I stood on the shoulders of giants. With your continued support, the new President and the Board, the Program Committee and

the Secretariat will take WIOMSA to greater heights. Even as my time in the Board has come to an end, I will continue to be involved in WIOMSA's activities as a member and as the editor of the WIOMSA Magazine.

Dr. Nirmal Shah

FROM THE NEW PRESIDENT

As I take over the Presidency, my first task must be to express, on behalf of our members, our great gratitude to the members of the outgoing Board Dr. Nirmal Shah, Dr. Salomao Bandeira, Prof. Rudy van der Elst, Prof. Nils Kautsky, Dr. Indumathie Hewawasam and Prof. Micheni Ntiba as well as Dr. Pascale Chabanet and Dr. Margareth Kyewalyanga (who have been re-elected to the new Board) for their exemplary and dedicated service to the Board during their tenure. Their legacy includes their many accomplishments within WIOMSA and their extensive service to the coastal and marine community in the region. The new board is grateful for the leadership and skills they brought to the Association during a critical period in WIOMSA's history. They leave behind an institution that is even more focused in pursuit of its mission, operationally strong and filled with remarkable people and purpose. We were fortunate to have people of their strategic acumen and abilities devoting their time to WIOMSA's advancement. I am joined by the incoming Board, the Secretariat and the entire General Assembly in our deep appreciation for the significant impact they have had on the Association's operations. As this outgoing Board departs, we recognize that we are at another turning point but that our commitment towards achieving our mission endures.

It is a challenge taking on the Presidency after Nirmal Shah as he is a tough act to follow. He was a decisive and resourceful leader of the Board, with a sharp intellect

and clever wit and he will be remembered for the tenacity he brought to all endeavors, his strong support of WIOMSA's collaborative culture and his vision for the Association and the region as a whole.

Transitions can be smooth sailing or rough seas. As the head of the new Board, I am charged with the latest transition of leadership at WIOMSA as well as keeping the organization moving ahead. So far the transition has been smooth and the new Board will be meeting in 2014 to define the main agenda for our tenure. Reports of the studies on Organizational Assessment and 'the Use of Research Outputs by Management Authorities: Assessment of Current Practices and Identification of Capacity Building Needs' are amongst the documentation that will form the basis of defining the Board's agenda. Members, past Board members and partners will be consulted and involved in the implementation of this new agenda. I am looking forward to contributing to the fulfillment of the Associations' goals and mission and to steering WIOMSA towards a sustainable future.

This Annual Report shares some of the important results and achievements of WIOMSA in 2013. We hope you enjoy the read.

Dr. Jacqueline Uku



HIGHLIGHTS FROM THE EXECUTIVE SECRETARY

In many ways, 2013 was a very challenging year for WIOMSA with key constitutional activities such as the election of the members of the WIOMSA Board of Trustees, the Fifth WIOMSA General Assembly and the amendment of the Constitution all taking place in the same year. In addition to these there was also the organization of the Eighth WIOMSA Scientific Symposium in Maputo and the fact that 2013 was the first full year of implementation of the new MASMA Programme “Coping with Global Change, Consolidating the Gains”. Yet the year ended on a far more optimistic note than perhaps many had expected.

Although 2013 was the fifth election of the Board members since the establishment of the Association in 1993, there were anxieties amongst members about the election particularly due to the fact that for the first time, none of the founding members would be part of the new Board. Only eight of the fourteen members nominated agreed to stand in the election. Of the eight, two were seeking re-election, with one of them standing unopposed. The votes were counted during the 5th General Assembly in November 2013 and the results were very close in each of the contested categories. This is an indicator that the members had trust in all the nominated candidates. The members elected the following team to the Board: Margareth Kyewalyanga (Host country); Pascale Chabanet and Harifidy Olivier Ralison (Island states); Jacqueline Uku and Louis Celliers (Mainland Countries) and José Paula (members from outside the region). The new Board has been well received by WIOMSA members and partners alike. The balance of gender, the blend of re-elected and new members, the range of expertise and experience amongst the members and the familiar and collegial atmosphere existing between Board members are all factors and qualities of the new Board that have gone a long way to quell any pre-election jitters and raise the expectations of members about the new Board’s performance.

The amendment of the Constitution and its approval during the Fifth General Assembly was major milestone realised in

2013. This is the second time that the Association has amended its Constitution, the first time being in 2005. Compared to the first amendment, the latest amendments were more comprehensive. The move to amend the constitution was prompted by several recent developments in WIOMSA. The setting up of the WIOMSA Trust, the increased involvement of the private sector in the Association’s business and the plans to establish a consultancy or other business are some of the key developments that are now provided for in the Constitution. In addition to this, the legal and institutional framework under which WIOMSA operates recently changed and this needed to be reflected in the Association’s Constitution. For instance, it is now a requirement for the Constitutions of NGOs to include relevant articles on indemnity and dissolution and we have now included these in the WIOMSA constitution.

2013 was the first full year of implementation of the MASMA Programme, building on the achievements of the first six months (July-December 2012). We conducted an assessment of the progress made towards achieving outcomes of the Programme using 14 indicators to monitor the status of implementation in 2013 and we are delighted to report that we have made significant progress in the implementation of the different components of the programme. In 2013, there were two calls for proposals from which five research projects were approved for funding, three from the first call and two from the second call. All the approved projects have met the criteria for the new MASMA program in that they all include different types of demonstration activities. The approved research projects, which are led by a management authority, research institution or non-governmental organization, have involved different actors who have not been typically involved in past WIOMSA-supported research projects. These include: relevant government departments, community-based organizations and the private sector.

During the Fourth WIOMSA General Assembly held in Reunion in 2009, a decision was made to initiate the publi-

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A fisherman and his family ready their traditional boat (lakambezo) for fishing. Mangily, Toliara, Madagascar.



cation of site-based books. Almost four years later, the first two books were published in 2013! These are: People, Nature and Research in Chwaka Bay, Zanzibar, Tanzania and the Maputo Bay Ecosystem. These books are mainly based on the review and synthesis of the research conducted in the areas covered, with the intention of developing approaches and strategies that will contribute to improve management effectiveness of these areas.

The books provide a holistic view of Chwaka Bay and Maputo Bay and therefore have the potential to attract readership from not only researchers and students but also from resource managers, decision makers, practitioners as well as the general public and tourists. A key point to note is that they inspire the implementation of science-based management strategies and the development of research proposals addressing research gaps and emerging topics. These books also provide important baselines that can assist in comparing and measuring the success of future interventions. These books have been well received within and outside the region. We have even managed to place the Maputo Bay Ecosystem for sale on Amazon, a first time achievement for any of WIOMSA's books.

In 2013, WIOMSA continued to play a key role in regional initiatives. We were involved in the production of the first WIO Regional State of the Coast Report, where WIOMSA is collaborating with the Nairobi Convention and the UNEP's Division of Early Warning and Assessment (DEWA) to produce the report. This report, which follows the format of the Integrated World Ocean Assessment report, will consist of seven parts and a total of 41 chapters. The report will provide a comprehensive baseline on the status of coastal and marine environment in the WIO region; highlight main opportunities of coastal and marine resources, describe successes and challenges faced in management of coastal and marine resources, identify main capacity building needs, identify main knowledge gaps and propose policy options for effective management of coastal and marine resources. The report is expected to be published in 2015.

Significant achievement was made in 2013 in the implementation of capacity development activities. Over 240 individuals from all the countries in the WIO region (with the exception of Somalia) benefitted from different capacity development activities implemented during 2013. These included 13 MSc and 5 PhD students who obtained MARG grants that enabled them to visit laboratories outside their countries for data analysis, or to attend conferences to present results of their theses. Further, the capacity development activities also produced a number of products such as training manuals; a policy brief; management recommendations and setting-up a network, Regional Community-based Aquaculture in the WIO region. WIOMSA is always looking for new innovative ideas that have potential to improve the Association's performance overall and 2013 was no exception. We introduced a new publication, the Symposium Newsletter, and added an item termed the "Field Note" in the Western Indian Ocean Journal of Marine Science. The Newsletter aims to provide an avenue for participants and interested parties to communicate information

to symposium delegates. The Field Note aims at publishing short one-page articles with illustrations that summarize information of scientific value which would otherwise not fit to be considered as a Short Communication in the Journal. Further, in 2013 WIOMSA worked for the first time in Lake Victoria in collaboration with Rhodes University of South Africa in the EU-IOC Smartfish programme to develop a pilot fisheries registration and licensing programme along the Tanzanian side of Lake Victoria. We decided to participate in this project because of its potential applicability in marine fisheries.

Last but certainly not least, the term of the 4th WIOMSA Board of Trustees came to an end in 2013. We at the Secretariat would like to take this opportunity to extend our heartfelt gratitude and sincere appreciation to the outgoing Board Members under Dr Nirmal Shah, for all the support and cooperation provided to the Secretariat and the Association as a whole. Over the last five years, their stewardship of WIOMSA has been characterised by innovative ideas, strategic thinking and, most valuable, their tremendous efforts to increase the credibility and visibility of WIOMSA in the region and internationally. The resulting goodwill has become a huge asset to us, and the relationships they fostered with our donors, supporters and partners will ensure WIOMSA will prosper and continue to offer opportunities to our members. Under their direction and guidance, WIOMSA has accomplished much over the past five years including going into completely new territories with the WIOMSA Trust Fund, the introduction of institutional membership, the new MASMA program and its proof of concept approach and larger institutional grant schemes, to mention just a few accomplishments.

All this ventures have been driven by the Board and made possible due to the dedicated commitment, tireless focus, and adaptability of the Board members. This is in addition to the secretariat being assured of their unflagging support in the implementation of the decisions of the Board and the General Assembly. By all measures, WIOMSA has improved immensely during their watch particularly in relation to the steps taken to ensure the future financial stability of the Association and to ensure the Association remains relevant in the face of changing regional and international priorities and they leave us a better organisation and on a strong footing for the new Board. We wish you all the very best and are committed to ensuring your ongoing involvement in WIOMSA particularly in this period of transition for the Association.

We are particularly indebted to Nirmal Shah as President who has been with WIOMSA from the very beginning- and has served as the longest WIOMSA Board Member. As the President of the Board, he dedicated himself to the improvement of the Association and went beyond serving on the board often at personal expense —with amongst other countless endeavors serving as the Editor of the WIOMSA Magazine. He has led the Board with utmost professionalism and his exemplary service brought honour and recognition to every WIOMSA member and to marine science wherever he engaged in the business of the Association



The new Board members with the outgoing President & Vice President, the Trustees of the WIOMSA Trust, Government of Sweden Representative Dr. Gity Behravan and the WIOMSA Secretariat

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WIOMSA ELECTS A NEW BOARD OF TRUSTEES

The WIOMSA General Assembly elected four new members and re-elected two members to the WIOMSA Board of Trustees during the 5th General Assembly held in Maputo, Mozambique on the 1st of November 2013. The New members are Dr. Jacqueline Uku (Kenya) and Dr. Louis Celliers (South Africa) who represent the mainland states, Mr. Harifidy Ralison (Madagascar) representing the Island states and Prof. José Paula (Portugal) representing the out of region states. Dr. Margareth Kyewalyanga (Tanzania) representing the WIOMSA's host country and Dr. Pascale Chabanet (La Réunion) representing the other island state were re-elected for their second term on the Board.

Speaking after the election, the outgoing WIOMSA President, Dr. Nirmal Shah welcomed on board the new members and congratulated the returning Board members saying it was an honor to welcome remarkable leaders to the WIOMSA Board of Trustees and that their collective experience and wisdom was commensurate with the challenges and opportunities facing WIOMSA. He added that the incoming Board brought with them a diverse ability and individuals who were deeply committed to the WIOMSA mission and had a strong command of the substance of WIOMSA's work. He also thanked the outgoing Board members who were concluding their terms of service to WIOMSA saying the past Board of Trustees was extraordinary, not only in the caliber of leadership that they provided, but also because of their deep understanding of WIOMSA and the most pressing issues that the Association faces. Brief biographies of the new Board Members are as follows:

Dr. Jacqueline Uku is a Senior Research Scientist at the Kenya Marine and Fisheries Research Institute (KMFRI) with a background in ecology and physiology of marine flora. In 2011, she was appointed Project Coordinator for the World Bank funded Kenya Coastal Development Project (KCDP) that involves seven agencies and is multidisciplinary in nature. Dr. Uku has also served as the WIOMSA Kenya Country Coordinator since 2006, during which time she worked to strengthen linkages between differ-

ent institutions involved in marine research in Kenya. She is also on the Editorial Board of the WIOMSA Journal of Marine Science. Jacqueline's contribution to the Board will be to strengthen the WIOMSA country offices and to build partnerships for research and management within the region. She also looks forward to enhancing networks for WIOMSA and to tap into emerging opportunities that exist for the strengthening of WIOMSA activities within the member countries.

Dr. Pascale Chabanet is the Representative of the Institute of Research for Development (IRD) in La Réunion, Mayotte and Iles Eparses and a research scientist. Her research experience spans 20 years in the field of ecology of fish associated with coral reefs in the South West Indian Ocean and West Pacific. She has over 60 articles published in peer-reviewed scientific publications. Dr. Chabanet wishes to develop through WIOMSA, collaboration via joint projects, between the scientists of the SW Indian Ocean, and to continue to energize the younger generations of the region. She is interested in raising WIOMSA's profile and visibility beyond our regional borders and to seek for solutions to ensure that WIOMSA has a sustainable future. She returns to the WIOMSA Board for her second term having served in the previous Board from 2009.

Dr. Margareth Kyewalyanga is a senior lecturer at the Institute of Marine Sciences, University of Dar es Salaam with a MSc. and Ph.D. in Biological Oceanography from Dalhousie University, Canada. She has been involved in regional and international networks including the Western Indian Ocean Marine Science Association (WIOMSA); the Nippon-Foundation / Partnership for Observation of the Global Oceans (NF/POGO) network amongst others. In 2009, Margareth was elected into the WIOMSA Board of Trustees and was elected by her fellow Board members as the Treasurer of the Association. Dr. Kyewalyanga is committed to continued service of WIOMSA and looks forward to implementing what has been initiated by the outgoing Board and to contribute significantly towards sustainability of WIOMSA.

Harifidy Ralison is the Coordinator of the Western Indian Ocean Marine Programme of the WWF Madagascar and Western Indian Ocean Programme Office. He is an active member of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) and has played a key role in launching the Northern Mozambique Channel Initiative and in supporting the operationalising of the WIO Coastal Challenge. He is the WIOMSA Country Coordinator for Madagascar having served in that position for one term. His vision for WIOMSA is to ensure that the Association maintains its strategic thinking and decision-making in optimizing the use of its resources to establish/strengthen the framework that links science and management to governance and policy. In addition to this, he intends to influence WIOMSA into playing a key role in advancing regional cooperation in many aspects of coastal and marine science and management that will support sustainable development in the Western Indian Ocean region.

Dr. Louis Celliers works with the South African CSIR as a Principal Researcher with the Natural Resources and the Environment unit. He is the Research Group Leader of the Coastal Systems research group. This is one of the largest permanent and cohesive research groups of this nature in South Africa and possibly the African Continent. He has been involved in WIOMSA since 2000 and has seen it grow from a modest research association to a regional leader of

research facilitation and human capital development. The science footprint of WIOMSA can be seen throughout the WIO region. WIOMSA has become a model for regional science cooperation and facilitation. The association has been responsible for the growth and development of a regional knowledge-base which, used appropriately, will contribute to national growth and development, poverty alleviation and the successful implementation of integrated coastal management. His goals for WIOMSA as a Board member are to promote the return on regional research investment through the management and custodianship of data and information; to focus on a portfolio of projects that are relevant to the WIO context, i.e. positive impact on coastal livelihoods, alleviation of poverty, reduction of risk, good oceans and coastal governance and the sustained delivery of ecosystem services; to maintain an impeccable record of impartiality, effective governance and administrative efficiency and to promote the excellence of science coming from the WIO region and secure long-term funding to maintain the growth and development of ocean and coastal sciences.

Prof. José Paula is an Associate Professor at the University of Lisbon (UL), where he teaches courses in Marine Ecology, Coastal Systems and Tropical Marine Biology. He has been involved in the planning and implementation of a number of regional programs that WIOMSA has participated in. These include Transboundary networks of marine protected areas for integrated conservation and sustainable development: biophysical, socio-economic and governance assessment in East Africa (TRANSMAP), and Peri-urban mangrove as filters and potential phytoremediators of domestic sewage in East Africa (PUMPSEA). Prof. Paula views WIOMSA as the major pivotal institution for promoting marine and coastal research and capacity building in the WIO and believes that WIOMSA should continue to strengthen support for research, promote dissemination and publication, and foster collaboration and exchange between WIO scientists and institutions. Its aims should continue to address sustainable development and capacity building in marine sciences. It should focus on the interaction between marine environment health and human livelihoods, interdisciplinary research, and local and global trends of change.

The election of the new Board marks a new milestone in the evolutionary development of WIOMSA as this is the first Board that does not comprise any of the WIOMSA's founding members. Members and WIOMSA's partners have very high expectations of the new Board as they are not only experienced and knowledgeable but are well respected and connected within and outside the region. The new Board will meet for the first time on 21 February 2014 to elect the President, Vice President and Treasurer of the Association. Each member brings to the Board a different perspective and vast experience in the field of coastal and marine science and environmental management. The talents and expertise of these new board members will help shape the future of WIOMSA.

WIOMSA AND FISHERIES

While WIOMSA has supported several fisheries related research projects in the past through the MASMA and MARG granting mechanisms, and through publications, the Association has played a relatively peripheral role in regional fisheries initiatives. Funding for fisheries related projects is on the increase in the WIO as manifested by the number of current or planned internationally-funded projects and programmes.

This has provided an opportunity for WIOMSA to start to expand its areas of focus, in line with the objective of accessing a greater diversity of funding opportunities to support the core costs of the organisation. This shift is also indicative of the requirement for WIOMSA to remain flexible and relevant in an increasingly competitive funding environment, as well as addressing priority research and implementation needs in the region.





Ambodivahibe canoe, Madagascar

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THE SMARTFISH PROJECT

The EU-funded SmartFish Programme run through the Indian Ocean Commission (IOC) has recognized the useful role that WIOMSA can play in the implementation of projects at both a regional and national level. This has resulted in two collaborative fisheries-related activities being initiated in 2013. The first is an innovative pilot project to test approaches to improve the licensing and registration of fishers and vessels on the Tanzanian sector of Lake Victoria. The rationale behind this project is to use cellphone technology to enhance the existing system that has some serious challenges. Currently the District Fisheries Officers (DFOs) in collaboration with the Beach Management Units (BMU) are the responsible agents for running the licensing and registration processes. The current systems places a significant administrative burden on the DFOs who are tasked with running the registration/licensing programme, record keeping and maintaining data, and the collection of revenues. The current system is not centrally managed, and the Fisheries Division of the MLFD maintains no records of the number of fishers licensed or vessels registered. The lack of centralized data reporting makes it difficult for the authorities to develop a clear understanding of the fishing pressure on the lake, the levels of illegal fishing, and how best to develop management interventions.

The pilot project will facilitate the payment of registration and license fees through the introduction of a centralised cell phone-based payment system linked to a fisher / vessel registration database that will be housed at the University of Dar es Salaam. Automating the registration and licencing payment system will reduce the administrative burden on the DFOs to run the registration process, leaving more time for them to undertake other management responsibilities. The trial will initially focus on registering and licensing fishing vessels, and if successful, it will be extended to fisher licensing. Initially the system will be trialed in the Illemela and Nyamagana districts in Mwanza Region. If successful, the pilot will be scaled up to other districts and expanded to include fisher licenses as well as vessel registration and licensing. The initial groundwork and scoping for this project has been completed in 2013, and the trial is expected to be initiated during 2014, as part of the second phase of the SmartFish Programme.

The second project funded through the SmartFish Programme is focused on developing a strategy for improved management and governance of the inshore fisheries of Zanzibar. Considering the importance of the fisheries sector in the Zanzibar economy, the fisheries

administration has supported a significant number of initiatives including on legal and institutional arrangements aimed at promoting sustainable and responsible fisheries. These initiatives have included the setting-up of Village Fisheries Committees (VFC), the enactment of the new fisheries Act no. 07 of 2010, the promotion of a General Management Plan (GMP) in every Marine Conservation Area (MCA) in close collaboration with environmental services, and the encouragement of participation of stakeholder in fisheries management, and the deployment of field staff.

The fishery sector in Zanzibar is however faced with several challenges that impact the sustainability of fish resources and the sound integration of the sector in coastal zone management. Coastal fish resources have recently shown signs of overexploitation, and fishing capacity has steadily and considerably increased for the last decade. This situation can be explained by a combination of factors in the governance system of the sector including the lack of effectiveness of some key fisheries management services such as MCS, performance of VFCs in participating to the management of fisheries, and difficulties in implementing activities at a local level. In June 2012, a Zanzibar delegation attended a training

workshop on fisheries governance that was organized by the SmartFish Programme. Following the workshop, Zanzibar requested the assistance of the SmartFish programme to formulate a Strategy for improved fisheries governance and management in Zanzibar (including Pemba Island), in line with the Zanzibar Strategy for Poverty Reduction and the General Management Plans in Marine Conservation Areas (MCAs). WIOMSA was tasked with the provision of local support and facilitation for the development, finalization, adoption, dissemination and initial implementation of the strategy. The overall objective of the SmartFish intervention is to contribute to better fisheries governance through improved control of access to inshore fisheries, especially in terms of regulations, procedures, institutional framework and implementation. Specific objectives of the project are twofold: (i) to support the preparation of a Strategy for improved fisheries management and governance; and (ii) to contribute to the revision to the National Fisheries Policy. While Objective 1 was largely completed during 2013, SmartFish have agreed to continue support during 2014 to ensure that the Strategy and Policy are taken through the formal process of being adopted by the Zanzibar Government.

A REGIONAL NETWORK FOR LOCALLY MANAGED FISHERIES IN THE WIO

WIOMSA has received a grant from the MacArthur Foundation to coordinate a process of designing a regional network for Western Indian Ocean local fisheries management to build community capacity and governance frameworks. To ensure a partnership approach from the start, the proposal for this assignment was developed collaboratively by the key regional partners (WIOMSA, WCS, CI, CORDIO, WWF) who have an interest in the regional network. The work is being coordinated by WIOMSA at the request of these partners. Further, given that all partners are, or will soon be, members of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C), the intention is for the development of the future network to occur within the framework and with the support of the WIO-C. This will ensure the networking of regional and international NGOs under an existing initiative, as well as liaison with the main regional inter-government organizations. The WIO-C has close working relationships with both the Nairobi Convention and the IOC in terms of the provision of technical support.

One of the primary mechanisms for local fisheries management that has emerged in the last decade in the WIO is the establishment of LMMAs by coastal communities. LMMAs in the WIO are defined as near-shore areas, largely or wholly managed by local people, often in collaboration with local government. LMMAs in the region have often been established through a fisheries management body such as the Beach Management Units (BMUs) in Kenya and the Community Fisheries Councils (CCPs) in Mozambique, or through governance systems that combine both customary and national level law as seen in the System of Protected Areas of Madagascar (SAPM). While Kenya and Madagascar are leading the way in the region with the largest number of LMMAs, Tanzania, Mozambique, Comoros, and Mauritius are increasingly embracing this concept. Other fisheries management initiatives that have been implemented recently include fishing gear modifications, local level efforts to remove illegal and destructive fishing gears, and the protection of spawning aggregations of target fishery species. Most of these are at early stages and on small pilot-type scales.

Across the WIO, local communities are facing similar challenges with management of the marine environment. Highest among these are the difficulties of enforcement of community rules, and the effective collaboration and coordination between community management areas or plans, local government and national government. While LMMAs throughout the region have been relatively successful with some kinds of enforcement issues (temporary and permanent reserves, gear restrictions) they often struggle with migrant and destructive fishers (using dynamite or poison) and industrial fishers. Gender issues are a concern across the region as women tend to be under-represented in fisheries management committees and due to cultural factors, they tend to participate less, even when they are included in decision-making bodies.

Monitoring and evaluation of marine resources and project outcomes is weak in all countries. While community-based monitoring is being piloted in Kenya, Tanzania, and Madagascar, efforts within and between countries are not coordinated, methods are not harmonized, and data collection is not centralized. However, academic efforts by scientists to monitor progress and evaluate impact of fisheries management through LMMAs, for example, have been carried out throughout the region, though not at a sufficient scale.

Self-financing remains a difficult, yet highly sought after goal for local fisheries management initiatives, though Payment for Ecosystem Services (PES) approaches have been considered and are currently being planned for northern Mozambique (ZSL/Bioclimate / CORDIO project in Cabo Delgado). Ecotourism, alternative livelihoods programs, fishing licenses and taxes on catch are all methods currently under development, with ecotourism already providing strong income in some BMUs in east Africa. Education and awareness-raising has also been identified as something that is already going on within most LMMAs by support organizations and management associations themselves. However, the technical capacity of local fisheries management institutions in management planning, monitoring and measuring impact and participating in co-management discussion fora remains weak and requires substantial inputs.

Based on the above background the project aims to develop a local fisheries management network for the WIO to facilitate wider and more rapid uptake of effective and replicable local fisheries management approaches. The project would also serve to share limited resources (i.e., funds and expertise) across the region, and to create a forum for region-wide small-scale fisheries discussions and training opportunities. This project will draw on lessons learned from existing regional locally managed marine area (LMMA) networks such as that in the Pacific, will strongly align with the developing MIHARI (Mltantana ny Harena an-dRanomasy avy any Ifotony) national local fisheries management network for Madagascar and draw on recent local management initiatives in the region, notably the rapidly emerging number of LMMAs in Kenya and Madagascar. In addition, this project will strengthen initiatives underway to improve management efforts in the Northern Mozambique Channel area, a multi-national seascape of global importance.

The goal of the project is to ensure long-term sustainability of small-scale fisheries productivity, particularly those fisheries important for local food security and human well-being, while maintaining the health and viability of coastal ecosystems and their biodiversity. This project will focus on the planning, development and design of a local fisheries management network for the WIO for subsequent region-wide implementation. The project will actively realize this within the social, political, and economic context of WIO by engaging and working with a wide range of partners that are active at the local, national and regional levels. This will involve an assessment of existing local fisheries management initiatives, their effectiveness and needs; consultations at local and national levels to effectively capture the issues and differences between the diverse countries of the WIO, and also drawing on lessons from other regions such as the Pacific; identifying the most effective regional partnership approach which formalises roles, identifies a suitable leadership approach, but retains local level impact; planning the scope and implementation style of the network to ensure it delivers at the level of local fisheries management; and building regional support for long-term implementation of local fisheries management initiatives.

FISHERIES AND CLIMATE CHANGE

During 2013, WIOMSA was approached by the Food and Agriculture Organisation of the United Nations (FAO) to provide technical support to the NEPAD-FAO Fish Programme (NFFP) through coordinating a study on the impacts of climate change and/or disasters on specific fisheries in Africa, including their socio-economic significance and potential mitigation/adaptation measures. FAO is contributing to the efforts of African nations in preparing for climate change and disaster impacts in the fisheries and aquaculture sector through supporting the collection and documentation of information/evidence on these impacts and the vulnerabilities of the sector, in particular in relation to food security and gender specific information, as well as to identify possible adaptation options.

The assignment was designed to compile case studies from West Africa (one fishery in the Gulf of Guinea (GG), and one in North West Africa (NWA)) and the WIO (one fishery on the African mainland and one from an Island state). The examples/case studies looked at specific fisheries and identified adaptation options, including priority actions to assist countries in their climate change adaptation and disaster risk reduction/management work. While much information in the case studies came from a local level, national and regional-scale issues also needed to be considered.

In order to carry out this task, expert contributors were identified for four case studies:

- ▶ Small-pelagic fisheries in Senegal;
- ▶ Small-pelagic fisheries in the Gulf of Guinea;
- ▶ Coral-reef fisheries in the Seychelles, and;
- ▶ Small-pelagic fisheries in Tanzania.

Each author was asked to compile their case study according to a common table of contents that was designed to include information that could eventually feed into a vulnerability assessment for each fishery. Specific information included the identification of fisheries related socio-ecological systems already impacted by climate change and/or disasters; a description of the nature of the impacts on and vulnerabilities of these socio-ecological systems, including the communities/industries they support, and; current and potential coping mechanisms/strategies as well as biophysical and social characteristics/attributes that increase resilience to these impacts. The final product from this study will involve and analysis of the four assessment studies to develop a synthesis report that highlights common issues and workable strategies and interventions that can be adopted to address disaster risks and climate change impacts on marine fishery resources and the communities that rely on these. This aspect is ongoing and will be completed during 2014.

OTHER FISHERIES INITIATIVES

WIOMSA has also been involved in planning for two other fisheries-related initiatives/activities during 2013. The first has been through ongoing consultation with the various teams preparing for the World Bank-funded South West Indian Ocean Fisheries Governance and Growth Project (SWIOFish1), whose preparation is being coordinated by the World Bank and the South West Indian Ocean Fisheries Commission (SWIOFC). SWIOFish1 is a proposed 6-year regional project supporting regional integration around fisheries management, and aiming at improving the management effectiveness of selected priority fisheries at regional, national and community levels. While the project will initially focus on Kenya, Tanzania and Mozambique, there is a regional component aimed at improving regional cooperation and coordination.

The second planning process WIOMSA has been involved in is for the small-scale fisheries component of the proposed follow-up to the Agulhas and Somali Currents Large Marine Ecosystems (ACLME) Project. The project document for this proposed GEF/UNDP project entitled "The Western Indian Ocean Large Marine Ecosystems Strategic Action Programme Policy Harmonisation and Institutional Reform" (SAPPHIRE) was completed during 2013 and implementation is expected in late 2014.

With involvement in these ongoing initiatives in the WIO, WIOMSA is ensured of ongoing opportunities to contribute to the fisheries-related development process in the region. These opportunities remain mostly focused on coastal fisheries, but it is becoming increasingly apparent that a regional scientific body such as WIOMSA could have an important role to play in offshore fisheries matters in the region as well.

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Octopus enroute to the market





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Sharks are not always a symbol of Danger, Bassas da India, South Mozambique Channel.

STRENGTHENING RESEARCH

WIOMSA uses two competitive grant mechanisms, the Marine Research Grant (MARG) and the Marine Science for Management (MASMA) Programmes to address priority issues; improving research quality; and developing capacity in all relevant disciplines.

Five research projects were approved for funding in 2013 through the MASMA Programme, and all have included different types of demonstration activities. These include: a flexible framework for integrating science and management; spatial management simulation models for facilitating emergence of innovative management solutions, and piloting gated traps which have been found in preliminary experiments to increase incomes and reduction of bycatch. The approved research projects, have involved different actors who have not been typically involved in past WIOMSA-supported research projects. 21 out of 72 MARG I proposals submitted, were approved for funding. The main subject areas covered by the approved projects were fisheries, mangroves and physical oceanography, which in combination accounted for 52% of the applications.



MASMA PROJECTS IN 2013

Research remains a core activity of the new WIOMSA programme that is in its third year of implementation. WIOMSA continues to support the kind of research that has potential to contribute towards the creation of enabling conditions for coastal management. One of the specific Programme objectives is to develop institutional capacity to identify and define problems/ issues, and to conduct quality research that is relevant and critical for technology transfer and the promotion of behavioural and social/ environmental change.

This new programme has incorporated additional key requirements for all MASMA research projects supported. These are: mandatory participation of management authorities, private sector or communities; and clear articulation of how planned project activities will lead to behavioural and social/environmental changes. The latter requirement signifies a move from information generation to a 'proof of concept' approach, following on from evidence that the most effective manner of ensuring that research outputs are adopted and result in meaningful change is to implement demonstration projects which test various concepts. The MASMA research projects selected for funding in 2013 reflect these changes by satisfying the key two conditions of quality research and project impact. In 2013, 5 research projects were selected for support as shown in the following table. Brief descriptions of the MASMA projects that were funded in 2013 follow thereafter.

| | Concepts | Full Proposals | Awarded | Amount US\$ |
|----------------------------------------|----------|----------------|---------|-------------|
| A) MASMA Call for Concept Notes (CNs) | 42 | 10 | 3 | 1,342,552 |
| B) MASMA Call for Full Proposals (FPs) | 0 | 25 | 2 | 960,000 |

Emerging Knowledge for Local Adaptation - Modifying the Symbiosis of Knowledge and Governance for the Adaptation of Western Indian Ocean Coastal Communities at Risk from Global Change.

This project's overarching objective is to develop strategies to extend the impact of emerging knowledge relating to coastal vulnerability to enable local government and communities to use knowledge in order to facilitate adaptation and build resilience to climate change. The project has a vision to see local government and other stakeholders having access to effective guidance on best applicable practices on the production, management and use of emerging knowledge on coastal vulnerability to climate change to facilitate adaptation in the WIO countries. The specific objectives are to:

- Assess the type and readiness of emerging knowledge on coastal vulnerability to inform and guide climate change adaptation at local government level;
- Evaluate the current capacity of local government and governance structures to use emerging knowledge on coastal vulnerability to inform adaptation and build resilience;
- Devise strategies and make recommendations to:
- Strengthen knowledge management systems to generate, manage and disseminate knowledge relating to

vulnerability to climate change to local government, with a particular focus on how this knowledge can be successfully taken up by local government;

- Build capability of local government to implement this emerging knowledge;
- Test the applicability of improved knowledge systems to improving local government ability to use emerging knowledge and monitor their uptake.

The lead institution in this project is the Council for Scientific and Industrial Research (CSIR; South Africa; a semi-state agency) and the study covers four countries: South Africa, Mozambique, Kenya, and Mauritius.

Most MPAs in the WIO are not managed using science-driven approaches, resulting in ineffectively managed Marine Protected Areas (MPAs). Failure to take management action in response to environmental change whether from climate change or increasing human pressures may result in collapsed MPA systems. This project aims at addressing this problem for MPAs in the WIO by developing a tested and

Developing a model for strategic adaptive management of MPAs in the Western Indian Ocean

flexible framework titled Strategic Adaptive Management (SAM) that enables MPA managers to integrate science and management directly. SAM entails a process of learning by doing where social and ecological indicators are monitored to evaluate measurable objectives and management actions. The project strengthens an existing pilot SAM program and adapts it to fit the needs of three other MPAs in Kenya and Tanzania. The project expects to create strong linkages between scientific research (data) and management in WIO

MPAs, empower MPA managers through knowledge, and evaluate management actions as part of on-going, adaptive socio-ecological management. The lead institution in this project to be implemented in Kenya and Tanzania is the Kenya Wildlife Service, a state agency.

The MOZALINK project explores the natural and cultural dimensions of a “regional marine heritage” in the Mozambique Channel. The goal of this project is to reveal socio-



Fishers from the Mombasa Marine Park area work with KWS rangers to tag fish as part of a project to demonstrate spillover to fishers.
© J. O'leary

“Is an organization like WIOMSA needed in the region? The answer is an emphatic yes. To paraphrase the words of Hubert Curien, a former European Science Foundation President, “If WIOMSA did not exist, it is clear that it would have to be invented – urgently!”

Nirmal Shah, *Outgoing WIOMSA President.*

Linking marine science, traditional knowledge and cultural perceptions of the sea in the Mozambique Channel to build tomorrow's marine management using spatial simulation tools and educational games

cultural perceptions of natural marine heritage in the Channel, and by doing this, help ensure the implementation of sustainable management of the ecosystems, resources and livelihoods in the region. The project is structured around two main components: (1) the biological system (sea and coast) and (2) the social system, taking into account the coastal communities dependent on sea resources and others stakeholders, as well as their connections across the Channel. It follows an interdisciplinary and multi-scale approach involving specialists. The main outputs of the project are:

1) a spatial management simulation tool for decision-makers and marine spatial managers

2) an educational toolkit designed to play around the co-management of marine resources, personalized to the Mozambique Channel countries languages and adapted from a similar game developed in the Pacific region (MARECO) and

3) a roadmap toward the inscription of Mozambique Channel sites to the list of Marine World Heritage Sites. The MOZALINK project brings together local and regional partners to study ten local study sites distributed along the Mozambique Channel coast i.e. Mozambique, Madagascar, Comoros, France (Mayotte, Iles Eparses) and Tanzania. The lead institution for the project is l' Institut de recherche pour le développement (IRD).



The Beach in Mayotte.

© C. Sabinot

Advancing adaptive co-management of small-scale fisheries in East Africa

Near shore ecosystems are often poorly managed and vulnerable to damage from disturbances such as overfishing, use of destructive gear, and the impacts of climate change. The challenges of effectively managing near shore fisheries resources has led to the transformation of fisheries management from top-down government management to collaborative management in the WIO. These arrangements can be successful at maintaining fisheries and the vast majority of resource users support such initiatives.

However, despite the promotion of co-management in the WIO, many initiatives lack the design elements and community capacity for effective management. This project aims to strengthen the ability of coastal communities to more

effectively manage their resources in order to meet both socioeconomic and conservation objectives of food security and sustainable fisheries in the long-term.

The project uses an adaptive management approach to build the capacity of communities at target sites. It implements fisheries management interventions, promotes social organization and learning and conducts "action research," which seeks to simultaneously study and informs the process of change. The project advances changes that will enhance local commitment and ownership for effective management. The project is being implemented in Kenya, Madagascar and Tanzania and the lead institution is the Wildlife Conservation Society.

Dugongs (*Dugong dugong*) of the Western Indian Ocean Region: – Identity, Distribution, Status, Threats and Management

Coastal marine megafaunal populations within the coastal waters of the Western Indian Ocean are exposed to a myriad potential anthropogenic stressors including direct exploitation, by-catch in fisheries, indirect ecosystem effects of fisheries, unregulated tourism activities, potential disturbance from hydrocarbon exploration and extraction, deteriorating water quality, shoreline and coastal development and climate change. This trans-boundary project is concerned about the decline in dugong populations over the last four decades on the region. The project supports and improves the overall management effectiveness of existing protected areas, as well as identification and effective integrated management of proposed new protected areas that encompass dugongs and their habitat. The project's objectives are:

1. Identification of the historical and current extent of available seagrass habitat and
2. Identification of historical and current distributions of dugongs across the Western Indian Ocean.

3. Identification of any population structure of dugongs of the Western Indian Ocean (WIO) within global populations and any population discreteness within the WIO region.

4. Identification of any anthropogenic vectors of population decline within 'hotspots' and determination of the 'viability' of dugongs within 'hotspots'.

A main output of this project will be the development of a dedicated WIO Dugong Conservation Management Plan (CMP) which will comprise a series of site specific guidelines and recommendations that will be applicable to the entire WIO region. The project covers dugong areas and their habitat (and threatened species) in Kenya, Tanzania, Mozambique, Comoros and Seychelles. The project implementation is coordinated by a Mozambican-based NGO, the Association for Conservation and Protection of Dugongs and Marine Mammal Species (DUGONGOS.ORG)

New Members Appointed to MASMA Programme Committee

In 2013, the WIOMSA Board appointed two new MASMA Programme Committee (PC) members. These are, Prof Joanna Chataway and Dr Jesper Vasell. This was in response to the shift in the focus of the MASMA program from information generation to a 'proof of concept' approach. The new PC members were brought in to broaden the expertise in innovation systems. Joana and Jesper bring to the Committee long-term experience and knowledge on innovation systems development.

Dr. Jesper Vasell has 20 years of experience in innovation based on academic research from universities and research institutes. He has been the Director of the Innovation Office at Chalmers University of Technology since its establishment in 2010. He also has experience in public research and venture capital funding from several Swedish funding agencies and frequently consults and lectures on entrepreneurship, innovation system development and innovation management in both public and private organizations. The Innovation Office that Dr. Vasell heads provides assistance to researchers at Chalmers and seven other universities in Sweden in all matters concerning utilization and external collaboration with the intent of facilitating knowledge transfer and innovation. The Office also develops tools and support systems that stimulate and enable academic researchers to actively participate in utilization of their research. These tools apply to the whole research process from planning to potential utilization.

Joanna Chataway directs RAND Europe's Innovation and Technology team. She has more than 20 years of research

and consultancy experience in the areas of innovation and social and economic development—particularly in the analysis and evaluation of investment in research and innovation and what sorts of policy, finance, and institutions are needed to facilitate translation of research into useful innovation. Her research has spanned the public and private sector and she has worked in industrially developed and developing countries. Joanna is interested in global health and life science innovation, and has carried out a variety of research projects examining global health and agricultural public-private-partnerships, factors influencing change within the pharmaceutical sector, and regulation of biotech and pharma. In addition to her RAND appointment, Joanna is a professor at the Open University and is currently co-director of the Economic and Social Research Council (ESRC) Innogen Centre, which conducts a broad range of interdisciplinary research projects on social and economic aspects of innovation in life sciences. Innogen is based at the Open University and the University of Edinburgh. Chataway received her Ph.D. from the Open University.



MARG I PROJECTS IN 2013

The Marine Research Grant (MARG) programme contributes to increased understanding of various aspects of marine science through enhancing the capacity of scientists in the WIO region to conduct research. MARG I grants promote research capacity among the young upcoming scientists by providing a reliable mechanism through which they can turn their ideas into research projects. These are generally 12-month research projects covering any topical issue in the marine and coast realm. Of the 72 applications for MARG I received during 2013, 21 were funded to a total value of US\$ 120, 500. This is the highest number of proposals supported in a single year by WIOMSA since the MARG Programme was established. 44% of the applicants were students, the majority being masters' level. 67% of MARG I funding was awarded to students.

| | Applications | Accepted | | Applications | Accepted |
|---------------------------------------------------------------|--------------|----------|------------------------|--------------|----------|
| PhD Students | 12 | 5 | Undergraduate Students | 1 | 0 |
| Masters Students | 19 | 9 | Non-Students | 40 | 7 |
| Grand Total (PhD, Masters, Undergraduate, Non-student) | | | 72 | 21 | |

The region's young scientists showed increased interest in some disciplines that have not received a lot of attention in the WIO including genetics, sea grasses and seaweed, and social sciences. Statistics also show that the applications from island countries have increased compared to previous years. The projects that were supported in 2013 are representative of the main disciplines and cover 5 countries of the WIO including the islands.

| Kenya | Mozambique |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> Some biological aspects of ray-finned seabream (<i>Dentex maroccanus</i>) in Malindi-Ngomeni, Kenya Potential of fish feed production from locally available ingredients in Kenyan South Coast region Assessment of effects of sediment load on sea grass using satellite imagery. A case study of the Kenyan coastline Facilitation theory in mangrove regeneration Carbon stock assessment of the mangrove forest in Mtwapa creek, Kenya. | <ul style="list-style-type: none"> Mangrove forest structural changes after cyclone: a case study in central Mozambique Carbon and nitrogen stable isotope signal from estuarine penaeid shrimp nursery areas in Maputo Bay, Mozambique - A tool for the assessment of nursery areas contribution to adult shrimp fishing grounds |
| Madagascar | South Africa |
| <ul style="list-style-type: none"> Temporal and space variation of reef fish larval in the south west of Madagascar: case of Toliara great reef and Anakao reef. Spawning period and recruitment of the corals of the South Western region of Madagascar Mangroves wood: utilizations and diameter growth assessment in the west coast of Malagasy mangroves (Case of the Sahamalaza Biosphere Reserve and Tsiribihina) | <ul style="list-style-type: none"> Morphological and Molecular revision of the order Zoantharia (Anthozoa: Hexacorallia) on the east coast of South Africa. Genetic stock identification of three siganid species (<i>Siganus argenteus</i>, <i>Siganus sutor</i>, <i>Siganus stellatus</i>) in the South West Indian Ocean region What colour artificial light is best for sampling fish assemblages on subphotic reefs, and can lights be used in standardised sampling throughout the depth distribution of a species? Stock structure in blacktail and zebra seabream (<i>Diplodus sargus capensis</i> and <i>D. cervinus hottentotus</i>) from South Africa Connectivity In South African Coral Reef Fish Communities And MPA Design |

Tanzania

- Antioxidant activities from marine ascomycetes fungi
- Distribution of harmful bacteria along the gradient of selected estuary of the Tanzanian coast
- Biophysical of *Kyphosus cinerascens* at Matemwe reef on the east coast of Zanzibar Island
- Marine tenure regimes in Mafia Island, Tanzania: Influence on climate change adaptation and mitigation strategies, livelihoods and condition of fishery resources
- The potential effects of climate change on sand temperature at Mnazi Bay Ruvuma Estuary Marine Parks sea turtle nesting sites
- Reproductive biology of Delagoa threadfin bream, *Nemipterus bipunctatus* (Valenciennes, 1830) along the coastal waters of Dar es Salaam.
-

© J. Bourjea

Rare emergence of green turtle hatchlings in La Réunion is an opportunity to do research and public awareness, La Réunion.



© N. Viet

*ISCD Participants embark on a
boat to view dolphins, Kizimkazi,
Zanzibar*



CAPACITY DEVELOPMENT

WIOMSA's capacity development activities focus on supporting students to acquire academic degrees to the levels of MSc and PhD through MARG grants, strengthening research and management capacity through short courses, and building professionalism in marine protected area management through certification.

In 2013, our capacity development activities were divided into broad categories: those that were planned and organized by WIOMSA, and those that were organized by other institutions who were awarded MASMA grants. The first category includes a certification event for MPA professionals, training courses on MPAs and climate change, and on integrated sustainable coastal development. The second category includes five training courses and workshops which were supported through the MASMA grants.



In 2013, the MASMA Programme Committee approved five out of 28 proposals submitted in response to two calls for proposals to organize training courses/workshops. Priority was given to proposals that had a high potential to contribute to positive behavioural and social/environmental changes. The five approved proposals focused on different topics ranging

from community based aquaculture (CBA), payment for ecosystem services and climate compatible development, advanced data analysis and writing of scientific publications based on deep-water crustacean trawl surveys, and scientific tools for coastal biodiversity assessments and mangrove ecosystems.

Community Based Aquaculture

The workshop on community based aquaculture, which was organized by Blue Ventures, was attended by 43 participants from Kenya, Tanzania, Mozambique, South Africa, Madagascar and Seychelles, the United Kingdom, Germany and Sweden. The main goal of the workshop was to provide a platform for researchers, technicians and extension workers, commercial partners, farmers and students involved in CBA to enable broader understanding of common challenges and generate recommendations for best practice. The most common CBA activities practiced in the region, which were reported in the workshop, were finfish, shellfish, invertebrate, and seaweed farming.

The workshop was held over three days and was broken down into four individual sessions in order to address the specific objectives and expected outcomes. The first session involved selected participants presenting their work and experiences on CBA in order to give an overall picture of the status of CBA activities in the region. The second session examined the key issues for CBA in the WIO region; the participants working in groups to identify and address the main challenges. The third session looked at CBA and conservation; the participants worked through set questions in order to outline what the situation and issues are for CBA and biodiversity conservation. The final session examined the advantages and disadvantages of creating a regional CBA network. The workshop came up with a number of recommendations including:

- Building of hatcheries and the necessary technical skills in representative sites to curb shortages in seed and feed supplies and also to create new no-take zones nearby CBA sites to increase source of seed and juveniles of farmed organisms.

- Developing of techniques for growing 'cottonii' seaweed in deeper cooler areas to combat low production due to effects of high temperatures and the associated increase in epiphyte and disease infection.
- Improving production in seed and feed supplies by developing sound business partnerships between community, commercial partners and research institutes and marketing products through value addition, introduction of high value species and improvement of government policies towards supporting communities and their local partners in gaining advantages in external markets in order to reduce the reliance on donor funding.

Two additional products came out of the workshop, a short film (<http://vimeo.com/90118667>), where participants talk about their CBA experiences, and what the workshop means for the future of CBA in the WIO and an online map (<http://bit.ly/1dvBhO4>). This map shows locations of 84 known CBA project sites.

Data analysis and writing of scientific publications based on recent deep-water crustacean trawl surveys

During 2011 and 2012, the South West Indian Ocean Fisheries Project (SWIOFP) undertook 4 deep-water bottom trawl surveys to assess the fisheries potential of crustacean resources in Kenya, Tanzania, Mozambique and Madagascar. The aims of these surveys were to assess abundance, species composition, and biomass of crustacean resources with potential for fisheries development. The surveys also aimed to identify other taxa (fish, sharks, cephalopods)

that may be caught by trawls in deep water, either as targeted or bycatches. However, SWIOFP ended in March 2013 before the data from these 4 surveys could be properly analysed. Additional funds were solicited from WIOMSA for data analysis, and the write-up of regional management recommendations and scientific publications.

In November 2013, ORI organized a workshop in Durban, South Africa, which brought together eleven scientists from Madagascar, Mozambique, South Africa and Tanzania and using data from deep-water crustacean trawl surveys to: develop scientific capacity building through advanced analyses of combined databases using state-of-the-art analyses software and techniques; improve scientific writing skills through drafting publications for the peer-reviewed literature; disseminate information important to fisheries, environmental management, and biodiversity conservation through a synthesis of results and recommendations to the South West Indian Ocean Fisheries Commission (SWIOFC); and produce 2 peer-reviewed publications in international journals.

Payment for Ecosystem Services and Climate Compatible Development

The East African Forum for Payment for Ecosystem Services (EAFPES) in partnership with Kenya Marine and Fisheries Research Institute (KMFRI) and the Institute of Marine Sciences (IMS) of the University of Dar es Salaam organized a training workshop attended by 29 participants that aimed at building the capacity of coastal and marine resources managers, policy makers, practitioners and conservationists and community group leaders from Kenya, Tanzania, Mozambique and Madagascar on the concepts and practices of Payments for Ecosystem Services (PES) and Climate Compatible Development (CCD). The training was held in Kenya in November 2013 and included a field visit to Gazi Bay mangrove forest where there is a pilot PES (carbon credit) scheme- the Miko-koPamoja Project. Participants recommended that because PES and CCD concepts and practices are emerging in the WIO region and there is still a huge gap on knowledge and skills, future efforts should be directed towards having similar workshops annually and rotating around the WIO countries.

Training Course on Mangrove Ecosystems

The First International Training Course on Mangrove Ecosystems in the Western Indian Ocean, was organized jointly by the Kenya Marine and Fisheries Institute (KMFRI) in collaboration with the United Nations University Institute for Water,



Environment and Health (UNU-INWEH), University of Nairobi (UoN), Coastal Oceans Research and Development - Indian Ocean (CORDIO) East Africa, UNEP Nairobi Convention and the World Wide Fund for Nature (WWF) "Coastal East Africa Initiative" (CEA-NI). The course was held in December 2013 in Diani, Kenya and at the Kenya Marine and Fisheries Research Institute's Mangrove Center in Gazi. In total, twenty participants attended from the WIO region.

Participants were a mix of young professionals, academics, park rangers and managers that deal with mangroves. The course comprised lectures, group discussions, and demonstrations and covered diverse topics including, mangrove biology and ecology, faunal and floral diversity, restoration and management tools, ecosystem-based climate change adaptation and mitigation, coastal resilience, mangrove fisheries, mangrove communities and livelihoods, as well as the application of economics, policies and laws for mangrove management.

Summary

All these activities came up with different products ranging from training manuals (e.g. course on Scientific Tools for Coastal Biodiversity Assessments, Course on Mangrove Ecosystems and Building Capacity for applying Payments for Ecosystem Services and Climate Compatible Development); a policy brief (e.g. Building Capacity for applying Payments for Ecosystem Services and Climate Compatible Development); management recommendations (e.g. capacity building through advanced data analysis and writing of scientific publications based on deep-water crustacean trawl surveys) and setting-up of network (e.g. Community based aquaculture in the Western Indian Ocean).

Course on Scientific Tools for Coastal Biodiversity Assessmentst

The Advanced course on Scientific Tools for Coastal Biodiversity Assessments was held in Mozambique in December 2013. The course was organized by University Eduardo Mondlane and the University of Lisbon, Portugal (with participation from University of Aveiro). Main objectives of the course were to provide capacity building to young researchers from the WIO region on scientific tools for assessments of coastal biodiversity, with strong emphasis on scientific design and statistical approaches and methodologies. The course was attended by 21 participants from Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar and Mauritius. The course focused mainly on coastal biodiversity quantification and basic statistical methods for improving the analytical skills of the young participants. In particular, the emphasis was on the techniques for analyzing richness and diversity of coastal marine communities. Theory lessons introduced concepts and computer exercises provided practice in statistical packages used for dedicated analytic approaches.





Workshop participants on a rocky shore in Inhaca

© J. Paula

NOAA/WIOMSA Training Course for MPA Professionals on Understanding and Communicating Climate Change

The National Oceanic and Atmospheric Administration (NOAA), Engility Corporation and the Western Indian Ocean Marine Science Association (WIOMSA) with the support of the United States Agency for International Development (USAID) held the first of three capacity building trainings on climate change for Marine Protected Area Managers. The training took place in Grahamstown, South Africa from November 19-23, 2013. The three trainings are part of a program that will focus on understanding climate change; improved data and information collection, education and awareness on the potential impacts of climate change on their resources, as well as tools they can use to raise awareness of climate change issues and build support for MPAs among policymakers and communities; vulnerability assessment to strengthen the capacity among MPA managers to assess vulnerability to climate and non-climate stressors; and alternative livelihoods to build the resilience of vulnerable coastal communities, including through education, training, and incentives. In addition to the above, the climate change program includes a mentor or training of trainer program to provide regional marine resource practitioners with the knowledge, skills, and techniques to take over the program in time (3-5 years).

The theme of the first training in Grahamstown was on Understanding and Communicating Climate Change. The mentor training preceded the training course to provide the 12 mentors with tools for facilitating participatory trainings and advance in depth exposure to the curricula for Understanding and Communicating Climate Change. The objectives of the Understanding and Communicating Climate Change Training were to provide a basic understanding of the root cause of climate change- the types of physical, chemical and biological changes that have begun to or may occur and anticipated impacts on habitats, species, natural systems, and human communities; to familiarize participants with tools for communicating climate change issues to key stakeholders such as policymakers and communities; to assist

participants to develop a stakeholder engagement plan for planning for climate change. The objectives of the mentor program preceding the Understanding and Communicating Climate Change Training were to equip 12 mentors who are committed to building climate change capacity in the region with skills on facilitating participatory training programs and to begin to familiarize mentors with training agendas and materials to enable them to take on increasing roles and responsibilities for training delivery (e.g., facilitating exercises, facilitating plenary sessions), preparing them eventually to become course instructors.

The 12 mentors and additional 23 participants who attended the training came from eight countries in the WIO region - Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania). Two participants from outside the region (Maldives and Egypt) were invited to facilitate cross-regional learning and to build off the reef resilience program undertaken by The Nature Conservancy (TNC) and NOAA in June 2013. The positions that mentors and participants hold include environmental researchers, research scientists, wardens, marine biologists marine scientists, program coordinators, and conservation officers/managers. Most individuals worked directly for MPAs either through their government or a non-governmental organization. However, some participants worked for organizations that provided support to MPAs.

ISCD Program in 2013

WIOMSA in conjunction with the NIRAS Natura AB and the School of Global Studies of the University of Gothenburg hosted the 4th and 5th training courses on Integrated Sustainable Coastal Development in October and December 2013. The trainings brought together participants from Kenya, Tanzania, Mozambique, Ghana, Liberia, Bangladesh, Cambodia, Vietnam, China, DPR Korea and Myanmar. The ISCD program targets decision and policy makers involved in coastal management and develop-

ment, key persons with the ability to initiate and drive change processes, subject matter specialists with responsibilities related to planning and use of coastal zones, and other professionals involved in integrated coastal development. The ISCD workshops have so far trained 141 participants and will conclude in 2015.

Improving the Management Effectiveness of MPAs through Certification of MPA Professionals: WIO-COMPAS 2013 Diary

French Level 1 Certification Assessment Event Held in Madagascar

The Western Indian Ocean Certification of Marine Protected Areas Professionals (WIO-COMPAS), in conjunction with the Wildlife Conservation Society, Madagascar (WCS) successfully conducted the 9th Certification Assessment event for WIO-COMPAS in March 2013 resulting in three experts in Marine Field Operations from Madagascar being certified MPA PRO Level 1. The level 1 event (L 105), conducted in French and Malagasy (a definite first for WIO-COMPAS), was sponsored by WCS Madagascar and was held in Toliara, Madagascar from the 25-28 March 2013.

Six candidates attended the event out of eight candidates who enrolled into the program for the L 105 offering. WIO-COMPAS heartily congratulates Huyghens Behanarina (WCS), Toky Voajanahary (WCS) and Victor Baba (Madagascar National Parks) for their MPA PRO certification! With the addition of the Malagasy MPA PROs, WIO-COMPAS now boasts 51 MPA PROs in its ranks! Two candidates were pending and had to provide further evidence of competence within 6 months of the event. One candidate was considered ineligible for certification for not meeting the mark required for certification and will need to reapply into the program after attaining sufficient experience.

Pending No More

WIO-COMPAS is delighted to announce that former pending Level 1 candidates, Lucy Kivunzi of Kenya Wildlife Service who attended the Level 1 event held in November 2012 (L104) and Bienvenue Zafindrasilivonana from Blue Ventures Conservation who attended the Level 1 Event in Madagascar in March 2013 (L105) have provided sufficient evidence and have been recommended by WIO-COMPAS assessors for certification pending the Certifying Board's approval in the very near future. This is another reminder that pending status just means another opportunity for gaining experience and getting feedback for the professional development of MPA Professionals.

WIO-COMPAS Updates:

Certification Renewal Process

The WIO-COMPAS Secretariat has finalized the process for MPA PROs to renew their certification. The first group to apply are those MPA PROs from the years 2008 (L201) and 2009 (L202). All certified MPA PROs must renew their certification every five years showing evidence of continued employment related to MPAs for most of the past five years and professional growth. The Secretariat will be writing to relevant MPA PROs once the process is complete.

New WIO-COMPAS Publication Out

The Paper "The WIO-COMPAS Programme: RPL in Action" by Lawrence Sisitka, Meg Pahad and Glenn Ricci is out! Recognition of Prior Learning (RPL) is a major issue in the hiring process and WIO-COMPAS was able to provide a model for the assessment field. A rarity we are told! The Paper has been accepted by the Environmental Education Association of Southern Africa (EEASA) Journal. Meg and Lawrence will be presenting the paper at the South African Qualifications Authority RPL Conference on the 25 February 2014 and the full paper will be submitted to their journal thereafter.

Leading the World in Professionalizing PA Management

WIO-COMPAS was designed from the start as a model for how the protected area (PA) community, as well as the larger natural resources management field, could improve management effectiveness by systematically improving staff competence and performance. WIO-COMPAS partnered with IUCN to develop the Global Partnership for Professionalizing Protected Area Management (GPPAM). An international group of PA experts from terrestrial and marine areas are working now on producing guidelines and materials which will be launched at the World Parks Congress this November. Our goal is to support the global community in advocating for competency-based professional development for PA staff. MPA PROs have been vital in helping others realize the value and impact of such a vision.

© A. Adera

Coconut tree crying for help due to erosion and climate change, Kipini, North Coast, Mombasa, Kenya



© J. Rakotoniaina

*A young fisher going to fish Octopus,
Madagascar.*



INFORMATION DISSEMINATION AND COMMUNICATION

In 2013, we worked across a variety of media, created compelling content, and convened meetings, workshops and the symposium with leading scientists, the private sector, nongovernmental organizations, government officials and policy makers to create issue-driven dialogue around key issues, with the intention of positively influencing outcomes as part of our commitment towards impact-oriented communication and information dissemination that add value beyond our scientific grants. WIOMSA disseminates information about its activities and communicates with its membership, partners and general public through a range of means. These include the WIOMSA website, blog, Newsbrief, Annual Report and the WIOMSA Magazine. WIOMSA also produces the peer reviewed Western Indian Ocean Journal of Marine Science and supports the production of books.



THE SCIENTIFIC SYMPOSIUM RETURNS TO MAPUTO

WIOMSA held the 8th WIOMSA Scientific Symposium at the Indy Girassol Congress Hotel and Spa from the 28th of October to the 2nd of November 2014, in collaboration with the Universidade Eduardo Mondlane, bringing together over 400 participants to present their scientific work in six parallel sessions and in a poster session. Maputo hosted the symposium for a second time with the event returning to the country of the 3rd symposium in 2003. The opening ceremony of the symposium on the 28th of October 2013 was presided over by the Chair of the Local Organizing Committee, Prof Salomao Bandeira, and was officially opened by the Chief guest, Mr. Victor Borges, the Minister of Fisheries, Mozambique. Over 500 oral and poster presentations were made during the first three intensive meeting days on themes including deep sea fisheries, fisheries management, economic valuation of resources, invertebrate fisheries, corals and coral reef biology, climate change, anthropogenic impacts on the coastal zone, governance processes, ecology, conservation, fish communities, small-scale fisheries, genetics, biodiversity, spatial planning, and socio-economics.

The 31st of October was set aside as a day for special sessions, focusing on key emerging issues in the WIO region. 10 special sessions were organized on a range of topics including discussions around managing the potential environmental impacts of the emerging oil and gas sector, through to investigating ways in which social media can enhance the practice of marine science. It remains apparent that this Symposium continues to be viewed as an important gathering place for stakeholders ranging from marine scientists, NGOs, Government Departments and the private sector, from within and outside of the region, to discuss pressing issues.

Six keynote presentations were delivered during the Symposium. Jeppe Kolding and Tom Hecht enlightened the

delegates with some interesting/controversial approaches to small-scale fisheries management, and aquaculture development respectively. Christopher McQuaid shared insights into historical trends in marine resource utilization in southern Africa, while Yusuf Adamo spoke about socio-ecological aspects of coastal resource users in Mozambique in a historical context. The final two keynote presentations by Pierrick Penven and Biliiana Cicin-Sain focused on regional oceanographic modelling, and management of Areas Beyond National Jurisdiction (ABNJs) respectively.

Contributions by students was again outstanding in the 8th symposium with more than 30 oral presentations and as many posters coming from students. Student Oral and Poster presentations were judged by the Symposium Scientific Committee. Kerry Reid from the University of Pretoria won the Best Overall Student Oral Award for her presentation on "The role of southern Africa in the colonisation history of *Pomatomus saltatrix* between the Atlantic and Indian Oceans". Other daily first place winners were Daniel Raberinary and Sander den Haring. 1st runner ups in the oral presentations went to Khyria Karama, and Ilkser Kiper, while the 3rd position went to Lola Masse and Robert Katikiro. Ryan van Rooyen from the University of Kwazulu-Natal won an award for the best poster with his poster titled "Genetic and morphological variation of the assimineids (Mollusca: Caenogastropoda: Rissoidea) of the St Lucia Estuary, South Africa. Nathalie Verlinden took the 2nd position while Sieglind Wallner won third place in the poster competition.

The Symposium Photo Competition was once again successful with several excellent contributions being made. The winners of the 8th Symposium Photo Competition were announced at the closing cocktail hosted by the University of Eduardo Mondlane at the University's Botanical Gardens



A cross section of symposium participants in a group photo

© WIOMSA

on the 1st November 2013. The theme of this photo contest was "Science and Society: Building Partnerships for Action." The purpose of the Photo Contest was to harness photo talent illustrating and conveying the many linkages between Science and Society in the Western Indian Ocean. The photo entries demonstrated interesting and innovative interactions between science and society. 45 entries were received for the competition. A panel of organizers selected 22 photos to be exhibited during the symposium from which symposium participants voted for their favourites. In a landslide victory, Jérôme Bourjea of IFREMER, Délégation La Réunion, won the vote taking first place with his photo titled "Juvenile green turtle entangled in a plastic bag saved by a sport fisher under a collaboration with *Kelonia* and Ifremer". The second place went to Yara Tibirica for her photo "Nudibranchs – the butterflies of the ocean (*Chromodoris africana*)". Johnson Rakotoniaina photo "Malagasy fisher woman with her natural sunscreen" was declared third. The winners received attractive prizes. All the photos entered in the competition will be used in WIOMSA publications and materials over the next year, in a tribute to all contestants.

The engagement of communities in WIOMSA events is always a good way to raise awareness of the marine environment and the threats that it faces. In the run up to the 8th WIOMSA Symposium the Eduardo Mondlane University organized a number of events to raise awareness of the upcoming conference and to ensure that the event was publicized outside the scientific circles. The University organized a boat competition on Saturday, 19 October 2013 at the Bairro do Triunfo. This event was organized with the intention of raising the visibility and profile of the symposium. The winners of the competition were Angelo Mundengo who took the first place, Ernesto Cowana came in at number 2 and Armando Germano placed 3rd. The Centro de Pesquisa do Ambiente Marino e Costeiro (CEPAM) in Pemba organized an art competition involving local artists who made ebony wood carvings depicting different aspects of marine life from the perspective of the artists.

During this inaugural art carving competition, all entrants for the competition received cash prizes for their works of art. The first position went to Mandela Guilherme for an intricate carving of a wooden boat, 2nd place went to Fabiao for a carving of a lady carrying fish on her head, Alide Suali won the 3rd place for carving a woman holding a fish in her hand. Vincente Joao's carving of a dolphin in the Mozambique Channel won 4th place in the competition. Eduardo Mondlane University organized a school drawing competition in Pemba and Inhaca for primary school pupils. The competition entrants were the schools themselves and the judges faced challenging choices in determining the winning schools as the drawings received were of very high quality. The winning drawings were selected based on creativity and to what

extent the drawings covered the theme of the competition. The winning schools from Pemba were EPC de Chuilba which took the first position. The 2nd and 3rd positions went to drawings from EPC de Maringanha School.

One very important aspect of the Symposium that is sometimes overlooked is the extensive networking that occurs during evening functions after the formalities of the day are over. The 2013 symposium was no exception with three official receptions organized by the hosts. Monday evening saw a cocktail party being hosted on the lawns of the Girasol Hotel with entertainment provided by a local traditional dance group who encouraged participants to join in their dances. Great fun was had by all! A function and dinner was provided on Wednesday evening at the Natural History Museum, a facility run by UEM. Popular contemporary Mozambican music was played in the outdoor venue after dinner encouraging many to try their hand on the dance floor. The final evening was taken up by the Symposium banquet and closing ceremony held in the Botanical Gardens at the UEM. While great effort had been made to ensure a memorable outdoor occasion for this special function, Mother Nature demonstrated her might by providing a heavy thunder storm early on in the evening. Fortunately several marquees allowed guests to shelter, and spirits were not dampened by the rain. Although some of the formalities were disrupted, a great evening was had by all. In addition to these 'official' social functions, several other Maputo gathering spots became popular for 'unofficial' evening socializing. The most popular included Mundos, Maputo Waterfront and Gil Vincente late night music venue, among others.

Several excursions were offered to delegates on the last Saturday before departure. These included a day trip to Inhaca Island, a city tour of Maputo, and a day trip to the Kruger Transfrontier Park. The most popular of these turned out to be the trip to Inhaca Island, where a visit to the UEM Field Research Station and snorkeling on the island's reefs were among the attractions. The inclement weather of the previous evening persisted and strong winds ensured that the ferry trip to and from Inaca was not the smoothest of rides.

An event of this magnitude and complexity could not have taken place without many months of hard work prior to the meeting in Maputo. As reiterated in most of the addresses made during the Symposium, special thanks need to go to Symposium Scientific Committee for administering the scientific aspects of the programme prior to the conference and also for judging student competitions, the local organizing committees in Maputo and Zanzibar, and the many other supporters who made this event both logistically and financially possible. All sponsors are thanked for their contributions while a special vote of thanks goes to the Swedish Government for once again supporting the Symposium extensively.

© J. Bourjea

A Juvenile green turtle entangled in a plastic bag was saved by a sport fisher under a collaboration with Kelonia and Ifremer. Winning Photo, 7th WIOMSA Scientific Symposium Photo Competition.





Overheard...

“Attending this 5 day event has benefitted me both professionally and personally. It has given me an opportunity to share and learn best practices for my research work and participate in a wide range of networking opportunities with eminent scientists and industry experts present at the conference. It also allowed me to build up my team management skills by providing a forum where I was able to take note of what is happening with regard to innovative new developments in the marine science area in response to emerging trends. I was also given the opportunity to share my research work through poster presentation and the feedback I received inputs that gave my research new directions. Furthermore, I was able to have direct access to exhibits and presentations from many organisations and thus gaining more valuable information about what other firms are doing and where they are focusing their efforts”

Rima Bessoo, University of Mauritius

“The Symposium gave me the opportunity to attend several events and dozens of presentations. I made a number of new contacts, which I hope to leverage into new and improved collaborations across the WIOregion. None of this would have been possible without the travel grant that I received from WIOMSA.”

Shawn Peabody, Blue Ventures Conservation

The WIOMSA Symposium was for me a sound success and a valuable experience. I was particularly thrilled to discover how much work is being done all over the WIO in my particular field of research. I study coral reproduction in northern Mozambique and it was great to see how the reproductive ecology of corals is also being assessed in various locations. Phenomena of ‘mass-spawning’ such as the one I focus on in Mozambique are also being described in locations such as Mauritius and the Reunion Island. Hearing about the research done there and sharing experience with other researchers was truly enriching. Having attended most of the coral talks, I also feel I have acquired considerable insights on the status of coral research in the WIO and learned with passion about new aspects of coral ecology. I also feel that I have been successful in communicating my research. This led to exciting conversation with experts in the field which constituted important networking opportunities, which I hope will result in research collaboration in the near future.

Erwan Sola, University of Kwazulu Natal

PUBLICATIONS IN 2013

During the Eighth WIOMSA Scientific Symposium, WIOMSA introduced a new publication, the Symposium Newsletter. Two issues were produced, the first issue before the Symposium and the second one during the event. The objective of the Newsletter was to provide an avenue for participants and interested parties to communicate information to delegates on news items, book launches, bursaries, courses, student adverts, invitations to special sessions, job adverts and the like. It was also used by the symposium organizers to communicate major announcements to delegates.

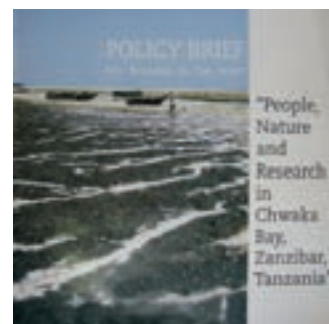
The Western Indian Ocean Journal of Marine Science has introduced a new feature in the Journal known as a Field Note. The purpose of the note is to publish short one-page articles with illustrations that summarize information of scientific value which would otherwise be lost as they would be considered too short to be accommodated as a Short Communication in the Journal.

Three issues of the WIOMSA Newsbrief and one issue the WIOMSA Magazine were also produced in 2013. The theme of the WIOMSA Magazine was "Marine Protected Areas and Tourism: Making MPAs self-sustaining"



Policy Briefs

Two policy briefs were produced in 2013 'People, Nature and Research in Chwaka Bay, Zanzibar, Tanzania' and 'Preparing for Climate Change; A Climate Development Future for Coastal Kenya'. This summarizes the key messages from the book with the same title. The second one was an output of the MASMA-funded workshop on 'Building Capacity for applying Payments for Ecosystem Services and Climate Compatible Development in WIO'.



WIO Journal of Marine Science

Two volumes of the Western Indian Ocean Journal of Marine Science were published

Volume 11 No. 1



- i) Illustrated Checklist of the Decapoda at Europa Island - J. Poupin, M. Zubia, N. Gravier-Bonnet, P. Chabanet and M. Malay
- ii) Population Structure and Reproduction of *Pseudione elongata africana* (Bopyridae, Isopoda) - Gil Penha-Lopes, Joana F. Marques, Miguel C. Lea, Ana F. Carvalho and José Paula
- iii) Genetic Identification and Population Structure of Juvenile Mullet (Mugilidae) Collected for Aquaculture in East Africa - Oskar Henriksson, Augustine W. Mwandya, Martin Gullström, Marika Thorberg, Mats Grahm
- iv) Sexual Reproduction in *Pocillopora damicornis* at High Latitude off South Africa - Lola M. Massé, Mathieu G. Séré, Albertus J. Smit, Michael H. Schleyer
- v) Diversity of the Symbiotic Alga *Symbiodinium* in Tanzanian Scleractinian Corals - Leonard J. Chauka
- vi) Coral Bleaching and Associated Mortality at Mayotte, Western Indian Ocean - Hampus Eriksson, Julien Wickel and Alban Jamon
- vii) Using an Ecosystem Model to Evaluate Fisheries Management Options to Mitigate Coral Bleaching on Western Indian Ocean Coral Reefs - Carlos Ruiz Sebastián and Tim R. McClanahan
- viii) Building Socio-ecological Resilience to Climate Change through Community-Based Coastal Conservation and Development: Experiences in Southern Madagascar - Kame Westerman, Kirsten L.L. Oleson and Alasdair R. Harris
- ix) Climate Change Adaptation in Mauritius: Considering the Role of Institutions - Matthew Gray and Bhanooduth Lalljee
- x) *Hydrolithon* sp. (Rhodophyta, Corallinales): A new threat to the massive 119 coral *Porites lutea* at Reunion Island, Western Indian Ocean - M.G. Séré, M.H. Schleyer, P. Chabanet and J.P. Quod

“The 2012 Annual Report is a top notch publication!”

Lesley Squillante, Assistant Director, Coastal Resources Center Graduate School of Oceanography, the University of Rhode Island.

Books

Four books were published in 2013. These are categorised in two: site-based books and those based on MASMA-funded projects.

Site-Based

WIOMSA's initiative to promote the synthesis information of important case studies in the Western Indian Ocean was realized in 2013 with the publication of *People, Nature and Research in Chwaka Bay, Zanzibar, Tanzania* and *The Maputo Bay Ecosystem* books.

Chwaka Book

Chwaka Bay is a social-ecological system located in the East coast of Unguja, Zanzibar. Rich in ecosystems and resources, the Bay houses a wide variety of species, natural resources and human activities. The *People, Nature and Research in Chwaka Bay*, or "Chwaka book" presents the biological, geological, physical, ecological and social components of the Bay from a scientific perspective. An extensive annotated bibliography is supplied presenting the large scientific production and management documents.

A total of 26 scientists participated in the writing and production of the book from different academic institutions in Tanzania (both Zanzibar and Dar es Salaam), Sweden, the Netherlands and Israel. All authors of the book have long experience working in Chwaka Bay and are all experts in their own disciplines. The University of Dar es Salaam and its Institute of Marine Sciences together with Stockholm University coordinated the writing, editing and production of the book.

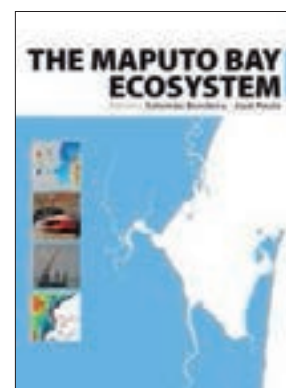
The Maputo Bay Ecosystem

The book presents the current knowledge about Maputo Bay in Mozambique, the largest coastal embayment in the country and a major feature along the eastern African coastline. Located on the fringe of the tropical Western Indian Ocean,

"This symposium newsletter idea is awesome and must surely be a first for any large scientific meeting. Congratulations!"

Thomas Hecht, *Professor Emeritus, Rhodes University, South Africa.*

Maputo Bay is a rich natural complex estuarine system forming a vast and heterogeneous environment with a diverse social and economic context. The book comprises four main parts plus sections within that include special contributions as case studies, for a total of nineteen chapters and thirty case studies. Part I deals with the environmental and human setting (geographical setting, geomorphology and evolution, hydrology and circulation, human settings, and history of research); part II presents the main habitats and ecological functioning (mangroves, seagrasses, coral reefs, charismatic fauna, and adjacent terrestrial environments); part III is on fisheries (semi-industrial shallow-water shrimp, magumba fish and artisanal fisheries); part IV addresses cross-cutting issues (pollution, climate change, and management options). The book further analyses research gaps providing recommendations that intend to contribute for scientific progress and management. It is the result of the contribution of 68 regional and international experts, and is thoroughly illustrated with maps, graphical figures and colour photographic plates.



MASMA Funded

Two books 'Sharing Benefits from the Coast' and 'Reef Fish Spawning Aggregations in the Western Indian Ocean' published in 2013 were based mainly on two MASMA-funded research projects 'Analysis of Benefits from Coastal Resources and Mechanisms for Equitable Benefit Sharing in Selected WIO Countries' and 'Incorporating reef fish spawning aggregations into optimal designs for no-take fishery reserves', respectively. While 'Sharing Benefits from the Coast' was published by the University of Cape Town Press, the other was published by WIOMSA as part of its Book Series.

Sharing Benefits from the Coast: Rights, Resources and Livelihoods

Coastal resources are vital for communities in developing countries, many of whom live in abject poverty. These resources also hold significant value for a number of different sectors such as mining, fisheries and tourism, many of which supply expanding global consumer markets. Although these activities provide opportunities for economic and income growth, global patterns indicate growing levels of economic inequality between custodians of

these resources and those exploiting them, as well as an increasing incidence in poverty.

This book provides novel analyses of these issues, drawing from empirical research in South African and Mozambican coastal communities. It aims to deepen our knowledge about coastal resource use, who benefits and who loses and in what circumstances, why benefits and losses are distributed in the way that they are, the main blockages that prevent greater equity, and strategies to enhance more equitable benefit sharing. These findings have relevance and application for coastal livelihoods, rural governance and resource sustainability – not only in the research sites, but across a world in which community rights are increasingly undermined through land grabbing, unequal power relations and externally driven development interventions.

Reef Fish Spawning Aggregations in the Western Indian Ocean: Research for Management

The book consists of thirteen chapters that explore some very different aggregating species with very different responses to fishing. From rabbitfishes to massive groupers, from species resilient to those highly vulnerable to fishing, the book considers how important it is to consider the selectivity of fishing gear, the importance of when most fishing occurs relative to the aggregation season, and how catchability can change everything. Field and novel modelling approaches were used to develop a predictive vulnerability framework for the data-poor contexts typical of the region. The contrast of spatial protection, often the conservation measure of choice, with

more conventional management was particularly interesting in highlighting the need to examine each fishery separately; protecting the aggregation itself is not necessarily the best way to protect the fishery.

“This book is one of firsts. It is the first documentation of commercially important reef fishes that aggregate to spawn in the western Indian Ocean. It is the first to develop a framework for processing information in data- and management-poor situations where fisheries important to local communities must, somehow, nonetheless be managed. It is the first to explore in detail the outcomes of different management scenarios across very different species fished in very different ways within the same region. In taking this approach, the book also tackles head-on some of the critical questions that we must ask as we come to learn more about spawning aggregations and their fisheries”. Prof. Yvonne Sadovy de Mitcheson, Director, Science and Conservation of Fish Aggregations (SCFRA), University of Hongkong



WIO Journal of Marine Science

Volume 11 No. 2



- i) Analysis of Rainfall Variations and Trends in Coastal Tanzania - S.B. Mahongo and J. Francis
- ii) Beach Sand Supply and Transport at Kunduchi in Tanzania and Bamburi in Kenya - Y.W. Shaghude, J.W. Mburu, J. Uku, J. Ochiewo, N. Nyandwi, H. Onganda, C. Magori, I. Sanga and R.S. Arthurton
- iii) Morphodynamics of the Manyema Tidal Delta at Kunduchi, Tanzania - N. Nyandwi, Y.W. Shaghude, J.W. Mburu, A.M. Dubi, I. Sanga and R.S. Arthurton
- iv) Growth Response of Selected Mangrove Species to Domestic Sewage and Abiotic Stress - A.M.S. Nyomora and K.N. Njau
- v) Panmixia in East African Populations of *Platygyra daedalea* (Scleractinia: Faviidae) - A.H.H. Macdonald, J.M. Lamb and M.H. Schleyer
- vi) Trends in Coastal Development and Land Cover Change: The Case of KwaZulu-Natal, South Africa – B.J. Goble and R. van der Elst
- vii) First Observation of a Pregnant Tiger Shark (*Galeocerdo cuvier*) at Reunion Island, Western Indian Ocean – S. Jaquemet, M.J. Smale, A. Blaison, D. Guyomard and M. Soria
- viii) First observation of *Acropora robusta* (Dana, 1846) on the high-latitude coral reefs of South Africa: A species range extension - C. Floros

“I am impressed by the good quality and interesting works of the 2012 annual report. WIOMSA is going forward, congratulations!”

Chantal Conand, *Professor Emeritus, University of Réunion.*

SCIENCE TO POLICY INTERACTIONS

In 2013, WIOMSA facilitated a number of Science to Policy initiatives including the production of policy briefs and the organization of special sessions/workshops which came up with policy recommendations. Different stakeholders including resources managers, policy makers, practitioners, researchers and community members were involved in the production of the policy briefs and participated in the special sessions and workshops.

With funding from the European Union through the Smartfish project, WIOMSA has been working with the Department of Fisheries Development in Zanzibar to develop a Strategy for improved fisheries governance and management in Zanzibar, and preparation of a new Fisheries Policy. These key documents are expected to be completed in 2014.

WIOMSA is also working with NEPAD and FAO to contribute to the development of regional and pan African policy guidelines for addressing climate change impacts on fisheries and aquaculture. The approach taken has been to undertake four case studies on fisheries from different parts of the continent and to use the results from these studies to provide workable guidelines for governments and regional organisations to develop appropriate climate-smart policies and practices to support the development of the fisheries and aquaculture sectors.



Policy Briefs

The policy briefs produced were 'People, Nature and Research in Chwaka Bay, Zanzibar, Tanzania', which summarised the key messages from a book with the same title, and 'A Climate Compatible Development Future for Coastal Kenya', which was one of the outputs of the MASMA-funded workshop on 'Building Capacity for applying Payments for Ecosystem Services and Climate Compatible Development in WIO'.

The Chwaka Book and the Policy Brief were launched in February 2013 at a formal ceremony presided over by Hon. Abdilahi Jihad Hassan, the Minister of Livestock and Fisheries of the Revolutionary Government of Zanzibar. The launch was attended by some of the authors, directors of different government departments, village heads from the 7 villages in Chwaka Bay, selected villagers who assisted researchers in their work during the collection of data for the book and representatives of NGOs. In his speech, Hon. Hassan acknowledged that the Chwaka Bay book was a useful resource that

would benefit not only to the community in Chwaka but also decision and policy makers in the Zanzibar government as it contained research conducted in Chwaka by scientists spanning a period of over 2 decades. The Policy Brief, which is targeting policy and general public, highlights the book overview, contents and relevance, the key scientific findings and the management findings.

The second policy brief, 'A Climate Compatible Development Future for Coastal Kenya' was the result of the MASMA-funded workshop on 'Building Capacity for applying Payments for Ecosystem Services and Climate Compatible Development in WIO', which was attended by coastal and marine resources managers, policy makers, practitioners and conservationists and community group leaders. This brief, which targets policy makers, resource managers and general public, explores some of the existing policies and mechanisms that could Kenya achieve Climate Compatible Development.

Workshops/special sessions

During the Eighth WIOMSA Scientific Symposium held in Maputo, Mozambique in October 2013, ten special sessions were organized on 31 October 2013, to discuss different priority issues. These sessions provided opportunity for interested parties to discuss in detail opportunities and impacts and come up with policy and technical recommendations for consideration by governments of the region and other stakeholders such as the private sector.

Special Session on 'Oil and gas development in WIO: Opportunities and potential impacts to coastal and marine environment?'

This session was organized by WIOMSA, the Nairobi Convention Secretariat and the University of Eduardo Mondlane to discuss emerging issues related to oil and gas exploration

and development, and impacts on marine and coastal environment. In particular, the session was organised to initiate dialogue amongst different actors involved in the oil and gas industry, including governments, scientists, industry and NGOs, to reflect on how the countries in the Western Indian Ocean (WIO) region could simultaneously benefit from oil and gas resources while maintaining environmental integrity and other benefits to the people, in line with Decision CP7/8 of the Seventh Conference of Parties to the Nairobi Convention (COP7).

In summary, the session identified and prioritised key areas that need to be addressed to enable countries in the WIO region to benefit from development of the oil and gas sector while maintaining ecosystem integrity to safeguard other economic activities and livelihoods.

© A. Adera

*One of Benefits of Mangrove Trees,
Gazi Bay Landing Beach, South
Coast, Kenya.*



PARTNERSHIPS

Strengthening existing and building new partnerships is at the core of WIOMSA's philosophy. Three new collaborative partnerships were developed in 2013. These were for the implementation of the 'Registration and Licensing Pilot Project' (with Rhodes University of South Africa); for the writing of a proposal on the development of a regionally Locally Managed Fisheries Network for submission to the MacArthur Foundation (with CORDIO, Wildlife Conservation Society, WWF and Conservation International) and for the production of the WIO Regional State of the Coast Report (with the Nairobi Convention and the UNEP's Division of Early Warning and Assessment).

WIOMSA continued its partnership with the Intergovernmental Oceanographic Commission of UNESCO's Sub Commission for Africa and the Adjacent Island States (IOC-AFRICA) for the improvement of climate outlooks for short and long rain seasons in the Greater Horn of Africa region, through supporting the 'Regional Ocean Experts' meeting held on the 13-19 August 2013 in Nairobi, Kenya and the 35th Climate Outlook Forum for the Greater Horn of Africa region, COF35 held on the 21-23 August 2013, in Eldoret, Kenya,





This Vezo fisherman works everyday to find what he and his family can eat, in good or bad weather. On this day, he has caught no fish, Songeritelo, Toliara, Madagascar.

© A. Rabary

Rhodes University

In 2013, WIOMSA was awarded a tender by the EU-IOC SmartFish programme to develop a pilot fisheries registration and licensing programme along the Tanzanian side of Lake Victoria. WIOMSA partnered with the Rhodes University in South Africa to deliver this project. Rhodes University's Department of Ichthyology and Fisheries Science has been assisting the SmartFish Project on several aspects of the component to improve Monitoring, Control and Surveillance (MCS) in the region, particularly with regards to training and capacity building activities involving the responsible authorities and other stakeholders in both coastal and inland fisheries.

Even though this project has been focused on a freshwater fishery, partnering with this expertise has allowed WIOMSA to become involved and learn about an area of operation that holds opportunity for marine fisheries as well. If this concept for improving licensing and registration systems for fisheries in the region is successful, the Association will be in a good position to promote similar approaches in other areas of the region. There are already plans to test the system in coastal fisheries in Tanzania.

National Oceanographic and Atmospheric Administration (NOAA)

WIOMSA has formalized a partnership with NOAA in the United States following on from exploratory interactions during 2012. Priority needs (with regards to the capacity of Marine Protected Area (MPA) managers to address climate change impacts in their areas of operation) were identified during a regional workshop held in Cape Town, South Africa early in 2012.

To respond to these priorities, the NOAA and the WIOMSA proposed a capacity building program starting with three focused trainings, as well as a mentor or training of trainer program, to provide regional marine resource practitioners with the knowledge, skills, and techniques to take over the program in time (3-5 years). With the support of the United States Agency for International Development (USAID), the first training on Understanding and Communicating Climate Change took place in Grahamstown, South Africa from November 19-23, 2013. A second training on Vulnerability Assessments and Adaptation Planning, and a third on Tools for assessing and monitoring climate change impacts will take place during 2014 and 2015.

This partnership allows WIOMSA to tap into the skills of instructors with global experience, and allows the promotion of experience sharing at both a regional and international scale. The concept behind the programme is to contribute to the building of a core of highly competent and motivated MPA practitioners in the WIO. For this reason, it is anticipated that the same group of 32 participants from 9 WIO countries will continue to take part in the programme, with the intention that they in turn are better able to build capacity in their own MPAs and countries in time.

A partnership approach to develop a regional network for locally managed fisheries in the WIO

WIOMSA has received a grant from the MacArthur Foundation to coordinate a process of designing a regional network for Western Indian Ocean local fisheries management to build community capacity and governance frameworks. This grant has resulted from a request from the Foundation for

several leading regional NGOs to submit separate proposals for this process in the WIO. These organization included COR-DIO, Wildlife Conservation Society, WWF and Conservation International. Discussions among these partners suggested that it would be most appropriate to tackle this project in a combined fashion rather than separately, and a joint proposal, lead by WIOMSA, was subsequently developed for submission to MacArthur. Blue Ventures has also been included due to their extensive experience with locally managed fisheries in Madagascar. The partners agreed that, if the proposal was successful, the project should be coordinated by WIOMSA due to the Association's existing regional networks and reach.

Now that the grant has been awarded, work will continue during 2014. While WIOMSA has worked with most of these partner organization previously, this project provides a unique opportunity for closer collaboration with multiple organisations at the same time; a desirable situation in that it allows different strengths and experiences to be harnessed for a common cause. It is anticipated that this partnership approach will pave the way for other joint working relationships in the future and increase the impact that can be achieved with the funding and expertise available in the WIO coastal and marine sector.

NEPAD and FAO

2013 also saw WIOMSA being invited by the NEPAD/FAO Fisheries Project (NFFP), a Sida-funded collaborative initiative, to participate as a WIO representative in the development of a

policy brief on strengthening resilience and reducing vulnerabilities to climate change and disaster impacts in African fisheries and aquaculture. The policy brief was intended as a contribution to the second Conference of African Ministers of Fisheries and Aquaculture scheduled for 2014. This involvement with NEPAD/FAO led to the WIOMSA being contracted to coordinate a process of documenting case studies in the WIO and West Africa of how climate change has impacted on fisheries, and potential adaptation options available. This is an ongoing partnership with FAO, and the collaborative work continues. WIOMSA sees this as an opportunity to build its profile as a credible and reliable partner on fisheries matters in the WIO, and to build on the existing partnerships with other UN agencies such as UNEP and UNDP.

Community Based Aquaculture in the WIO - Regional Network

Through the MASMA-supported workshop on 'Community based aquaculture in the Western Indian Ocean: Challenges faced and lessons learned', a new network "Regional Community-based Aquaculture in the WIO region" was established. This network will be an open access platform, aiming mainly at sharing information. It will involve as many stakeholders as possible, including government agencies and private sector organizations.

The network could be access from <https://www.facebook.com/CBAWIONetwork> and <https://groups.google.com/forum/?hl=en-GB#!forum/cba-wio>.

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Livelihood alternative to reduce pressure on fishing; Sea Weed Farming at Kibuyuni Shimoni South Coast, Kenya.





Malagasy fisher woman with her natural sunscreen. 2nd Place Photo, 7th WIOMSA Scientific Symposium Photo Competition.

© J. Rakotoniaina

RESOURCE MOBILISATION

Resource mobilization continues to be a priority for all the organs of WIOMSA, not least for the Secretariat. A focus has been placed on investigating funding options to contribute to the core running costs of the Association, in line with the objective of ensuring a sustainable future for WIOMSA. One of the key elements to the strategy to ensure this sustainable future has been the establishment of the WIOMSA Trust (WIT) in 2012. WIOMSA has been able to contribute to the capitalization of the WIT during 2013 through funds generated from WIOMSA activities. USD 250 000 was contributed to the Trust in 2013, with USD 200 000 coming from WIOMSA and USD 50 000 coming from WIOMSA's own sources. Further, WIOMSA received four proposals on potential investment opportunities for the Trust from Sustainable Capital, Nedbank, Standard Chartered and AXYS Capital. These proposals will be reviewed by the Trustees in 2014.

In 2013, WIOMSA explored, and in some cases implemented, different innovative ways for resource mobilization, some of which are discussed in this section.



US Foundations

WIOMSA has received interest (from a funding point of view) from two US Foundations, and has won a grant from the MacArthur Foundation for an 18 month period. With this initial grant there is potential for long term support in the small-scale fisheries sector in the WIO. WIOMSA are also assisting the Rockefeller Foundation to investigate the feasibility of support for a fisheries governance program for South Africa and/or Mozambique. There is a good possibility of receiving grant funding from the US National Marine Sanctuary Foundation in the near future to further our work on supporting marine protected area management in the region.

Provision of Technical Services

WIOMSA continues to provide technical support to the Nairobi Convention and IOC/UNESCO, and has developed closer ties with the Indian Ocean Commission (IOC) and FAO. WIOMSA provided technical support to the regional EU funded project, SmartFish, which is implemented under the framework of IOC. WIOMSA made contact with NEPAD, the African Union and the African Development Bank and has been successful in receiving a contract to assist the NEPAD/FAO Fisheries Project (NFFP) with several climate change and fisheries case studies in the WIO and West Africa.

These high profile organisations are important to engage with and the opportunity exists to increase the level of technical support provided to them with regard to WIO information

and expertise. This is an area of growth in terms of increasing and broadening sources of funding for the Association.

New EU funded projects such as that focusing on WIO Biodiversity are planned for the WIO in the near future. There may also be opportunity to provide some supporting services to other new initiatives such as the World Bank SwioFish1 project that will also start soon. WIOMSA will continue to work hard in marketing itself to ensure that it continues to be seen as an attractive partner to support such initiatives.

Partnerships and Joint Programming

Partnerships with multilateral organisations continue to provide a steady income stream, where WIOMSA plays the role of regional partner to coordinate and implement programmes in the WIO. In these cases funds come in through services rendered as the regional partner. There have also been some successes in being seen as an attractive technical partner for regional marine and coastal projects such as the GEF funded projects, and being contracted by these projects to assist at a technical level.

Efforts have been put into developing programmes with other NGO partners and using the combined reach of all the organisations to improve the chance of accessing funding.

© J. Rakotoniaina

How Malagasy fishers carry their fish.



This is being tested with the Resilient Coasts Programme (a programme developed jointly with IUCN, CORDIO and the Nairobi Convention), and other potential initiatives through the WIO-C (a group of likeminded regional and international NGOs, for which WIOMSA currently provides a Secretariat function).

Organization of Training Courses

Coordination and organization of training events is also a growing area. However, WIOMSA needs to be more business-minded when negotiating agreements to support these important services. We have arrangements with international private sector companies such as NIRAS and International Resources Group, as well as NOAA and USAID among others, to assist with various training events, with other training opportunities in the pipeline.

In summary, there seems to be a trend towards WIOMSA increasingly providing contracted services to other organisations. Various models have been tried and a mixed and flexible approach seems to work well. Providing specialist fee-based input from the staff of the Secretariat itself has not been so successful as these staff simply do not have the time to make this feasible. Contracting other expertise to assist when needed has provided a workable solution to this increased volume of work, with WIOMSA taking on a stronger role in coordination rather than providing specialist input into

projects. This approach is dependent on the quality of the consultants involved, and WIOMSA is fortunate to have access to a pool of high quality experts through its membership and networks. When expertise is contracted in it has been important to ensure that the Association charges reasonable overheads and sufficiently accounts for time inputs of Secretariat staff. A range of scenarios in terms of providing services have been tested over the last few years, including during 2013, and it is becoming easier to determine the types of projects and contracts that are beneficial for WIOMSA to take on.

While modalities have been tested to ensure that projects work in a manner that ensures WIOMSA receives reasonable compensation for services rendered, it has been equally important to scope the emerging opportunities that are developing in the region. Climate change is still on most project and funders agendas. Aquaculture is not yet a major item in the regional agenda although there are several focused programmes anticipated where WIOMSA could play a regional role, such as the EU funded aquaculture development project for EAC countries. Oil and gas, coastal development including ports, and fisheries are emerging as priority areas for both research and implementation efforts over the next few years, while MPAs and conservation issues will remain important to the work that WIOMSA does.

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Products from seaweed culture which is an alternative livelihood activity.





Traditional fishing with the sky scrapers in Maputo fading away at the horizon.

© L. Eggertsen

PWANI PROJECT ZANZIBAR OFFICIALLY CLOSED

By Narriman Jiddawi

The Pwani project which was inaugurated in Zanzibar on the 23rd March in 2012 officially closed at Zanzibar Ocean View hotel in a two days workshop held on 13-14 November 2013. The Pwani project built on the previous experience and investments of the United States Agency for International Development (USAID), the Coastal Resources Center (CRC) at the University of Rhode Island (URI), the Tanzania Coastal Management Partnership (TCMP), the Government of Tanzania, and other partners such as WIOMSA and the Institute of Marine Science of the University of Dar es Salaam (IMS).

The Pwani Project's goal was to sustain the flow of environmental goods and services; reverse the trend of environmental destruction of critical coastal habitats; and improve the wellbeing of coastal residents in the Bagamoyo-Pangani and Menai Bay Seascapes. The Project worked towards this goal by supporting local participation in natural resources management, integrating socio-economic and other cross-cutting issues and promoting institutional and resource user behaviors that are appropriate for the long-term management of the Northern Tanzania Seascape. The Project also built local capacity for integrated approaches to conserve biodiversity. At the same time, it provided gender equitable and sustainable economic benefits to coastal people through partnerships with local and national government, the private sector and civil society organizations.

In Zanzibar, the Pwani Project was funded by USAID through WIOMSA. Other partners in Zanzibar were the Institute of Marine Sciences and Menai Bay Conservation Area team. The Zanzibar component of Pwani implemented a package of activities related to improving the management of the Menai Bay Conservation Area, improving the communities' capacity to adapt to climate change and promoting women's entrepreneurship. During its implementation, the project managed to assist the community of Menai Bay Conservation Area (MBCA) in Zanzibar in several ways and deliver on its objectives. Some of the key activities and achievements were:

Maintenance and expansion of no-take zones for intertidal areas

At the outset of the Pwani Project, there were four community based "no-take zones" on Fumba Peninsula. The Pwani Project helped to improve these existing no-take zones by revisiting and revising their associated by-laws. The project also helped to initiate two new zones in Unguja Ukuu and Kikungwi villages. A new management plan was developed for these new no take zones and by laws developed to ensure that the community can continue to monitor and manage their no take zones in a sustainable manner beyond the project's life. Marker boards were displayed at these different sites to let everyone know the positions of these no take zones and the importance of following the rules.

Improving the sustainability of Dolphin Tourism in Menai Bay

Dolphin tourism is one of the important economic activities of Kizimkazi, in MCBA and many people depend on this business. Through the Pwani Project, forty dolphin tour guides were trained on sustainable dolphin tourism and were accredited by the Menai Bay Conservation Area authority. Project Officers also conducted seminars on customer care to Dolphin Tour Operators. This training aimed at helping the dolphin operators to adopt sustainable tourism business practices. The training also aimed at increasing the capacity of tour operators in skills such as attracting customers and on record keeping.

Improving the wellbeing of Women in Fumba

Another activity of the Pwani Project was to continue to empower women economically along Fumba Peninsula through strengthening their skills as small business entrepreneurs. A series of trainings were conducted to teach the ladies how to make good quality products using sea shells and half pearls and how to package their products. The project also developed and delivered an English language course to improve the communication skills of the women to enable them communicate easily with tourists. The project provided advice and help in getting more market channels and gaining access to exhibitions where products were sold. Brochures were produced and distributed in Stone town to provide information to tourists and other prospective buyers on where to get the ladies products. This was in an attempt to continue expanding the women's selling outlets in Stone town. In addition, a small kiosk was officially launched and opened in Fumba in February 2012 to serve as a base for the women to display and sell their products to tourists on their way to Kwale and other islands in Zanzibar. Existing Savings and Credit Co-operative (SACCOS) groups were trained on how to provide loans and collect profits. In addition, the Project helped establish two SACCOS in Zanzibar- the Kizingo shell craft jewelry group and the Chaza Cooperative comprising entrepreneurs from Nyamanzi, Bweleo and Fumba (Chaleni and Bondeni) villagers

The Chaza Cooperative Society Resource Centre

One of the greater achievements of the Pwani Project and the Fumba community and Bweleo was the official inauguration of the Chaza Cooperative Society Resource Centre on 3rd March 2013. The centre was opened by the Minister of State in the President's Office and member of the House of Representatives from Dimani Dr. Mwinyihaji Makame. During his opening speech, the Minister expressed his happiness in recognizing the efforts taken by the women of Chaza Cooperative and emphasized - the importance of doing their work

in a sustainable way while conserving the environment. He also said that he hoped that the centre would generate a close link between the community making jewelry and the markets in Stone town and elsewhere. The inauguration was attended by 150 people including community members of the 4 villages, local NGOs and government institutions. Also present were village heads of the four villages, the Manager of Menai Bay Conservation Area who have played a key role in ensuring that the community participates actively in all the activities and the facilitators were getting the best possible cooperation.

Climate Change Adaptation

The Pwani Project conducted vulnerability assessments for Paje and Jambiani villages and identified adaptation actions which focused on controlling beach erosion. Together with the project officers, the villagers and local hotels have actively replanted terrestrial plants and ipomea grass along the beaches to control erosion. The adaptation committees which were formulated under this project continued to be active in providing awareness to the other members of the community on the issues of Climate change and how to adapt to this new situation.

The Pwani project proved very successful as community continues to be active in all aspects of the project through the experiences gained. During the closing ceremony of Pwani in Zanzibar, Dr. Shaghude and Dr Jiddawi received certificates of appreciation for participating in the climate change part of the project which was also part of the Pwani overall project.



The Resource Centre.

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© M. Eggertsen

Less is more; small boats operated by local fishermen are excellent for sampling near the coast, Tofo, Inhambane Province, Moçambique.



MEMBERS CORNER

One of the key success factors for WIOMSA as a Non Governmental Organization and membership Association lies in the strength of our membership. This section is dedicated to highlighting activities and news of WIOMSA members in 2013. In this edition, we highlight the 5th WIOMSA General Assembly, The amendment of the WIOMSA Constitution, new institutional members, appointments and an obituary.



5th WIOMSA General Assembly

Over 150 members attended the 5th General Assembly of WIOMSA on the 1st of November 2013 and passed a number of key resolutions that will shape the future of the Association. Some of the resolutions made by the assembly were the adoption of the WIOMSA Secretariat Intercessional Report (2010-2013), the approval and adoption of the amendments to the WIOMSA constitution and the election of the WIOMSA Board of Trustees. The Assembly was held after the completion of the 8th WIOMSA Scientific Symposium that was held at the Indy Girassol Congress Hotel and Spa in Maputo, Mozambique. Other agenda items at the Assembly included the opening of the Assembly by the President, the presentation of WIOMSA Country Reports by present Country Coordinators, statements by outgoing and the incoming new Board of Trustees and the closing of the General Assembly by the outgoing President. As a membership organization, the General Assembly provides opportunity for the involvement of the membership in the matters of the Association such as defining WIOMSA's priorities and amendment of the Constitution.

Parting Words

“It is also with regret that I come to the end of my term. I can honestly say that serving on the WIOMSA Board has been a privilege and career highlight. Sharing a common vision with committed people and especially the Secretariat has been very rewarding. I hope I have done justice to those who voted for me in the first place. Good progress has been made towards a new dispensation, especially in terms of the Trust. But ultimate success can't rely on Secretariat and the Board alone. We as members need to play a more active role. It's no longer what WIOMSA can do for you but what you can do for WIOMSA!

For a start let's more actively promote membership. As it currently stands some 60% of delegates to the symposium are NOT paid up members. Hence, there is room for improvement. It is not just about finances – it is about the collective voice and hence influence that WIOMSA can muster. We can consider ourselves scientific custodians of the West Indian Ocean and together we can make a difference to the region's biodiversity and the people who depend on it. WIOMSA is on the threshold of even greater achievements- best if we can all pull together.”

Rudy van der Elst, *outgoing WIOMSA Board member.*

WIOMSA amends its Constitution

As part of the organizational change agenda that WIOMSA has pursued since July 2012, the year 2013 was devoted to finalizing the amendments to the WIOMSA Constitution. These amendments took into consideration the recent developments within WIOMSA and within the legal and institutional framework under which WIOMSA operates. The amended constitution was approved and adopted by the Fifth WIOMSA General Assembly in November 2013.

The new constitution is not prescriptive or too narrow but has taken a broad and futuristic perspective. It has provided for the setting up of the Trust Fund, more involvement of the private sector in the Association's activities and the establishment of a consultancy or other business, as need arises in the future. Other substantive amendments were done were in Article 2 on the Aims and Objectives), Article 3 (Membership), Article 6 (Termination of Membership), and Article 8 (Finance), Article 9.1.2 (Meetings of the General Assembly), Article 9.3 (The Secretariat), Article 9.3.1 (Functions of the Secretariat), Article 15 (Indemnity), Article 17 (Amendments to the Constitution), and Article 18 (Dissolution).

New Institutional Members

The number of Institutions signing up for membership of WIOMSA has been slowly but steadily growing. In 2013, the University of KwaZulu-Natal made history by signing up and paying for institutional membership fees for the next 10 years! We are pleased to announce that we also added the following Institutions to our Membership in 2013:

- ▶ Wetlands International
- ▶ Leibniz- Centre for Marine Tropical Ecology (ZMT) GmbH
- ▶ The Nature Conservancy (TNC)
- ▶ Mombasa Polytechnic University College
- ▶ Reef Conservation Mauritius
- ▶ The Ministry of Fisheries and Livestock, Zanzibar

Institutional Members of WIOMSA enjoy a wealth of benefits from the Association including free copies of WIOMSA publication (Annual Reports, the WIOMSA Magazine, Western Indian Ocean Journal of Marine Science, and Book Series), 10% discount off on WIOMSA books on Sale, 10% discount on advertisement rates in the WIOMSA Magazine; eligibility of members covered by the institution to be elected to and/or vote in the WIOMSA Board and Country Coordinator elections, subsidized registration fees for WIOMSA symposium; recognition in the WIOMSA website as paid Institutional Members, use of WIOMSA logo subject to WIOMSA rules

and regulations, free announcements on the WIOMSA blog and website, dedicated access by listed members to the members' only site on the website (www.wiomsa.org- Membership Services) and regular updates on WIOMSA activities through being included in the Association's mailing list.

Institutional Membership Fees

Institutions are able to nominate individual members from their staff; depending on the amount of fees paid. Nominated members are considered regular individual members who do not have to pay fees.

- ▶ Institutions paying for 10 members; US \$ 500 (Can nominate 2 free additional members including the head of institution)
- ▶ Institutions paying for 11-20 members; US \$ 1000 (Can nominate 2 free additional members including the head of institution)
- ▶ Institutions paying for between 21-25 members US \$ 1500 (Can nominate 2 free additional members including the head on institution)

Sign up today and enjoy these benefits by contacting secretary@wiomsa.org

WIOMSA Board Member appointed to Head IRD Office



In September 2013, Dr. Pascale Chabanet was appointed as the Representative of the Institute of Research for Development (IRD) in La Réunion, Mayotte and Iles Eparses. In 2008, she joined 2008 the IRD La Réunion office, working her way up to Assistant Director in 2009 and to the directorship position. Pascale joined the WIOMSA Board of Trustees in 2009 and was re-elected for her second term in October 2014. We wish her well in her new position!

Parting Words

“It was amazing to me how WIOMSA managed to achieve such a broad range of activities with a relatively small amount of funding.

The credit goes largely to a very efficient Secretariat, headed by an Executive Secretary who works around the clock to manage a multitude of tasks. He is ably assisted in these tasks by an equally efficient team. This makes the responsibilities of the Board that much easier. The Board therefore is able to review the relevant documentation online and exchange comments prior to a meeting where final decisions are taken. The professionalism and experience of Board members made the decision-making process an efficient and intellectually stimulating exercise.

During my time on the Board, I also learned a great deal from colleagues on the Board, the Secretariat and WIOMSA members with whom I interacted. There is still a considerable amount of work to be done, including resource mobilization to make the WIOMSA Trust a credible entity within the region and on a global level, carrying on the MASMA agenda, continuing to strengthen the networks and build new partnerships. I am confident that the new Board supported by the Secretariat and members will manage this challenging agenda with confidence.

I hope to remain engaged in different ways to support WIOMSA, with a particular focus on resource mobilization for the WIOMSA Trust. It has been an honour and a privilege to serve on the Board of Trustees of WIOMSA for two terms.”

Indumathie Hewawasam,
outgoing WIOMSA Board member.

The sun sets on founding WIOMSA member

Dr. Micheal Mutua Nguli, one of the founding members of WIOMSA passed away in August 2013 while receiving specialist treatment in Nairobi. Dr. Nguli was until his demise a Senior Research Scientist at the Kenya Marine and Fisheries Research Institute (KMFRI) which he joined in 1980 and he was among the first scientists to establish the Department of Physical Oceanography at the institute.

As a founder member of WIOMSA, Dr. Nguli played a pivotal role in ensuring the Association remained focused on supporting the development of Oceanography on the East Coast of Africa. He participated in almost all WIOMSA symposia and was poised to attend the 8th symposium in Maputo. The WIOMSA Country Coordinator for Kenya, Dr. Jacqueline Uku led the WIOMSA General Assembly in holding a minute of silence in honour of Dr. Nguli during the General Assembly on the 1st of November 2014. Dr. Nguli leaves behind a widow and two sons.



1. Group Photo of Chwaka Bay Book Launch, Chwaka Zanzibar, February 2013
2. Chwaka Bay Book Launch, February 2013
3. MASMA Program Committee Members Meeting in Johannesburg, South Africa, March 2013



4. WIO-COMPAS L 105 Certification Event, Boat Patrol Exercise, Sarodrano, Madagascar, March 2013
5. Marine Stewardship Council Meeting, Stone Town Zanzibar, March 2013
6. WIOSA President Nirmal Shah and Organizational Assessment Consultant Brian Davy at the Educational Centre of the Oceanographic Research Institute, Durban, South Africa, April 2013
7. Board Members Tour of Ushaka Sea World, Durban, South Africa, April 2013



8. Opening of the Pwani Project Chaza Cooperative Resource Centre, Fumba, Zanzibar, March 2013

9. Program Committee Meeting, Gothenburg, Sweden, May 2013

10. Program Committee Members in Group Photo with WIOMSA Secretariat, Gothenburg, Sweden May 2013.

11. 50th Birthdays for Margareth Kyewalyanga, WIOMSA Board Member and Tim Andrew, WIOMSA Secretariat, Zanzibar, May 2013

12. Norwegian Students visit WIOMSA Secretariat Office, Zanzibar June 2013

13. Signing of an MOU between the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) and the Western Indian Ocean Coastal Challenge (WIO-CC), Seychelles, July 2013.





18. Poster Session, 8th WIOMSA Symposium, Maputo, Mozambique, October 2013

- 14. Participants at the WIO-CC meeting, Seychelles, July, 2013
- 15. Opening Ceremony, 8th WIOMSA Scientific Symposium, Maputo, Mozambique, October 2013
- 16. Display of photographs and carvings from the 8th WIOMSA Symposium Art and Photo competition, Maputo, Mozambique, October 2013
- 17. 8th WIOMSA Symposium, Mozambique, October 2013
- 19. Start of the Boat Race, 8th WIOMSA Symposium Boat Race, October 2013
- 20. Banner, 8th WIOMSA Symposium Boat Race, October 2013

19. Start of the Boat Race, 8th WIOMSA Symposium Boat Race, October 2013

20. Banner, 8th WIOMSA Symposium Boat Race, October 2013

21



21. Board members at the 5th WIOMSA General Assembly, Maputo, Mozambique, November 2013

22. Student volunteers manning the symposium registration desk, Maputo, Mozambique, October 2013

23. One of the mentors explaining an exercise, WIOMSA, NOAA Climate Change Workshop, Grahamstown, South Africa November 2013

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24. Participants work on Climate Change Time Line, WIOMSA, NOAA Climate Change Workshop, Grahamstown, South Africa November 2013

25. Participants in an energizer, WIOMSA, NOAA Climate Change Workshop, Grahamstown, South Africa November 2013

26. ISCD Workshop Participants with fishermen in Kizimkazi, Zanzibar, December 2013

27. ISCD discussion with Menai Bay Conservation Area Management Team and Fisheries Committee, Zanzibar, December 2013

28. ISCD Mentor Discussions, Stone Town, Zanzibar, December 2013

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION CONSOLIDATED STATEMENT OF RECEIPT AND PAYMENTS For the period ended 31/12/2013

| | Note | 2013 US\$ | 2012 US\$ |
|--------------------------------------------------------|------|---------------------|---------------------|
| Balance b/f | 2 | 898,478.67 | 1,856,703.54 |
| Add Income received | | | - |
| Other Income | 3 | 1,101,012.63 | 858,046.41 |
| Interest Income | | 1,325.40 | 615.90 |
| Masma Income | 4 | 3,306,352.93 | 1,088,703.00 |
| Total Amount Available | | 5,307,169.63 | 3,804,068.85 |
| | | | - |
| Less Payments | | | - |
| Masma Payments | 8 | 2,271,782.09 | 2,401,611.71 |
| Other Payments | 9 | 729,828.26 | 524,679.03 |
| Total payments | | 3,001,610.35 | 2,926,290.74 |
| | | | - |
| | | | - |
| Excess of receipt over payments | | 2,305,559.28 | 877,778.11 |
| | | | - |
| Add back Amount transferred to capital and Trust funds | | 54,096 | 20,701.00 |
| Net excess of receipt over payments | | 2,359,655.70 | 898,478.67 |

NOTES TO THE FINANCIAL STATEMENTS For the year ended 31st December 2013

PRINCIPAL ACCOUNTING POLICIES

This Financial Statement has been prepared based on the following policies

1) BASIS OF ACCOUNTING

- i) Transactions are recorded on cash basis i.e. Income and expenditure are recognized when is received or paid respectively.
- ii) Financial statement is prepared on the historical cost basis of accounting and records are kept on historical cost.

2) DEPRECIATION

All purchases except purchase of fixed assets are expensed during the period of procurement.

3) FOREIGN EXCHANGE TRANSLATION

Transactions denominated in other currencies are recorded and reported into the reporting currency at the rate ruling on the transaction date and closing balances at the closing rate.

**WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION
CONSOLIDATED BALANCE SHEET
as at 31st December 2013**

| | | 2013 | 2012 |
|-------------------------|------|------------------|------------------|
| ASSETS | NOTE | US\$ | US\$ |
| Building | | 315,268 | 315,268 |
| Furniture | | 5,000 | 5,000.00 |
| Cash and Bank | 5 | 2,359,656 | 898,479 |
| Advance Payments | 6 | 114,319 | 130,276 |
| Sub-total | | 2,794,243 | 1,349,023 |
| | | | - |
| Less Projects balances | 7 | 1,672,633 | 500,799 |
| Total net Assets | | 1,121,610 | 848,224 |
| | | | |
| Financed by | | | |
| Accumulated Funds | 11 | 340,911 | 331,302 |
| Trust Fund | 10 | 63,087 | 58,991 |
| Endowment Fund | | 717,611 | 457,931 |
| TOTAL | | 1,121,610 | 848,224 |


.....
Executive Secretary


.....
Finance Officer

4) ADVANCE PAYMENTS.

This constitutes of overdrawn projects of which its subsequent or final tranches are expected soon.

5) PROJECT BALANCES.

This constitutes of ongoing projects/activities with cash balances in our bank accounts

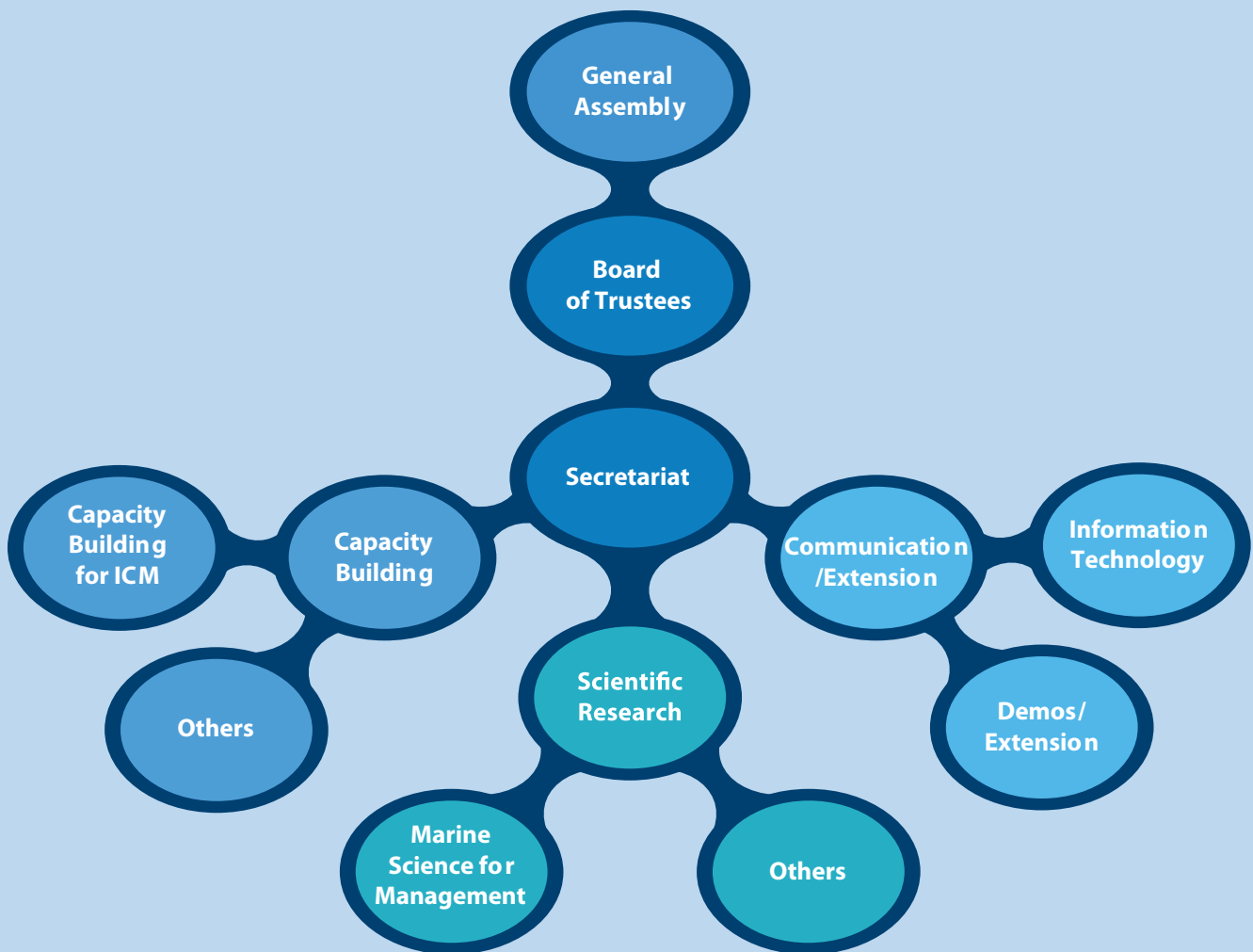
SOURCES OF FUNDS

WIOMSA is mainly funded by SIDA under MASMA program; other donors normally contribute or finance specific activity(s) and lasts when the financed project or activity is completed. Other sources include sale of WIOMSA products such as journals, membership fees and registration fees from WIOMSA Symposium.

WIOMSA's Vision

By 2020, WIOMSA will be widely recognized 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.

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About WIOMSA

Western Indian Ocean Marine Sciences Association promotes the educational, scientific and technological development of all aspects of marine sciences throughout the Western Indian Ocean region with a view towards sustaining the use and conservation of its marine resources.



Western Indian Ocean Marine Science Association

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