



Newsbrief

WIOMSA Board Appoints Co-opted Members

The WIOMSA Board of Trustees has appointed two new co-opted members to the Board: Philippe Sauce and Paul Siegel. The new members were appointed in accordance with the WIOMSA Constitution which stipulates that the Board can co-opt two non-voting members with the purpose of broadening the expertise of the Board.

“We welcome these new members to the Board. They are each respected individuals who bring to the Board a wealth of experience, a broad range of contacts and networks and the ability to lobby for funding from donor organizations. These individuals will provide valuable expertise to the Board and ensure we can continue to fulfil the WIOMSA mission”, Said the President of the Board Dr. Jacqueline Uku.

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Dr. Paul Siegel brings to the Board decades of award winning conservation and sustainable development innovation and leadership in Africa. His areas of conservation and sustainable development expertise include the management of marine, freshwater, and forest ecosystems, community e m p o w e r e m e n t and development, wildlife conservation and management,



conservation finance and international environmental policy. He has lived and worked in West, Central, and East Africa and Madagascar for over 30 years. He holds a Master's and Ph.D. degree in marine biology. After graduating in 1984, he served as a Senior Lecturer at the University of Dar es Salaam in Tanzania. In 1988, he became Field Director of the School for Wildlife Conservation and Management in Kenya, and in 1990, he joined WWF.

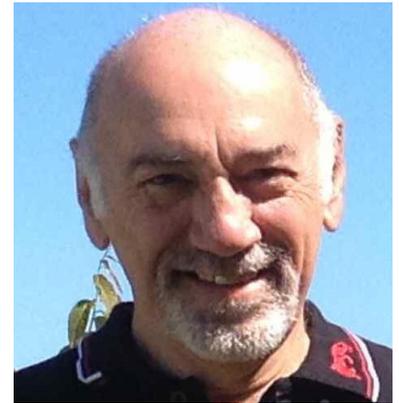
His first WWF appointment was as Technical Advisor in Madagascar where he ran an innovative Debt for Nature program which converted nearly 6 million dollars of bad Malagasy debt

into trees and forestry training. From 1996-2000 he was WWF's Representative in Tanzania during which time he and his colleagues built an extensive program of marine, forest, and freshwater conservation, environmental education, and natural resource policy advocacy. At the end of 2000, Paul took on continental responsibilities as WWF's Marine Conservation Advisor for the Africa and Madagascar program. Most of his time was spent developing, implementing and supporting marine programs across the region (Mauritius to Cape Verde), catalyzing links among African natural resource professionals, liaising and advocating with governments and regional bodies, and mentoring. He also developed and ran an extensive offshore oil and gas awareness programme.

In addition to helping establish strong African conservation/development teams in WWF offices in West, Central and East Africa and the Western Indian Ocean, over the years, Paul has been recognized as a Distinguished Alumnus of the State University of New York (Cortland), was awarded a Fulbright Biodiversity Award, was named an Environmental Fellow of the American Association for the Advancement of Science, and was decorated by the Malagasy Government for service to the Nation as a Chevalier de l'Ordre National de la République de Madagascar. Dr. Siegel retired from WWF in 2012 and is now based in Boone, North Carolina, USA.

Dr. Siegel is an environmental advisor and advocate serving on various Boards such as the BioGuinea Conservation Trust Fund (Guinea Bissau), and the Community Health Care Clinic (Boone, North Carolina, USA). He has also been involved in the establishment of conservation trust funds in Tanzania and Guinea Bissau and has raised millions of dollars since 2001 for environment and sustainable development projects, implementation and oversight of WWF's Tanzania program. He has published over a hundred technical communications presented at scores of meetings in Africa and Europe concerning environment, natural resource management and sustainable development, management of environmental assets, off-shore oil and gas development in West Africa, marine and terrestrial parks and sustainable utilization of marine and terrestrial resources.

Philippe Sauce brings 40 years of professional experience to the Board. He is based in La Réunion, France. Phillippe has a strong business and financial background. He holds a degree in accounting and business administration, legal certificate, university diploma in accounting and business administration, higher diploma in accounting. He is the founder and manager of a number of companies - 3P Partners and Bourbon Services Management which are companies that specialize in business transfer, business valuation and training of business leaders for the implementation of the strategy development for construction companies, creation and management companies and real estate development. He also runs SAPHILOI which focuses on restructuring and reorganization of SMEs with a turnover of 15 to € 25 million in various sectors (industry, food import, medical biology). In 2003-2004, he founded and ran Air Bourbon Company, an airline operating between Reunion and Paris/France



He served as the General Manager of the group health Clinifutur from 1996-2006. Clinifutur is the leading private health care facility in Reunion Island with 80 million euros in turnover, 1000 employees and 200 doctors under contract. In 1988 to 1991, he was the Chief Financial Officer of park "Asterix" near Paris the first theme amusement park in France. In 1984 to 1988, he served as the Director of the National Water Board of Djibouti, a water supply and distribution company serving a population of 500,000 persons in the Republic of Djibouti where he was involved in the complete restructuring of the Board involving its separation from the state budget and implementation of financial and juridical autonomy. In 1974 to 1984, he was the Chief Executive Officer for General Water Company in France.

Philippe is very passionate about the ocean and its well-being and he sees WIOMSA as an appropriate vehicle to contribute in ocean matters in the WIO region.

New Country Coordinators Elected

WIOMSA members have elected country coordinators to serve for the next triennium in their respective countries. The Country Coordinators election is an important process for the Association as they play a vital role in providing a link between the Secretariat and the members in the various member countries. The elections were held in May 2014 across the WIO Countries.

The new Country Coordinators take over from the following outgoing individuals: Dr. Jacqueline Uku (Kenya), Dr. Charles Lugomela (Tanzania Mainland), Dr. Narriman Jiddawi (Zanzibar), Dr. Almeida Guissamulo (Mozambique), Lionel Bigot (La Réunion), Prof. Michael Schleyer (South Africa), and Harifidy Ralison (Madagascar). On behalf of the WIOMSA Board of Trustees and the General Assembly, the WIOMSA Secretariat would like to thank all the outgoing Country Coordinators and congratulate Dr. Daniel Marie who returns for a second term. We have enjoyed the privilege of serving with a distinct group of individuals who have dedicated themselves to serving the Association. Their passion for WIOMSA and their action on behalf of WIOMSA members is a legacy of which they can be proud. We extend our gratitude, respect and praise for the roles they embraced as Country Coordinators. Their efforts and contributions will always remain in our minds.



Dr. Daniel Marie has been re-elected as the Country Coordinator for Mauritius. Dr. Marie has devoted 20 years of his life to research and is presently working for the Mauritius Oceanography Institute as Principal Research Scientist. During his first term as Country Coordinator, Daniel was a good ambassador of the WIOMSA in Mauritius, motivating WIOMSA members to participate in the WIOMSA biennial forum and to write regional research proposals. Daniel laid much emphasis on informing NGO and individuals on the role of the WIOMSA and the importance of securing a WIOMSA membership. He sees the mandate for his second term as encouraging different institutions including NGOs to buckle down and work hard to produce several collaborative regional research proposals in an endeavor to improve marine research and development in the region.



Dr. Nina Wambiji is the new Country Coordinator for Kenya. Nina is a Research Officer at Kenya Marine and Fisheries Research Institute (KMFRI), Mombasa Centre, Kenya. She is currently the Team leader, sub-component of Fisheries Research in the Kenya Coastal Development Project (KCDP), a World Bank funded initiative. Her agenda for the WIOMSA Kenya Chapter is to increase awareness about WIOMSA, encourage membership and participation. She intends to create scientific interest in junior and upcoming scientists in Kenya; encourage participatory research in applied sciences relevant to the coastal communities where the impacts will directly be felt by the stakeholders; increase visibility of work undertaken by Kenyan scientists in different fora (meetings, a list server, and contributions to WIOMSA newsletter); to hold country meetings (scientists, policy makers, the private sector and government institutions); to collaborate with other donors and stakeholders to support WIOMSA activities and to build up teams of experts in different fields who can come together to run multidisciplinary research with scientists in the Western Indian Ocean region and worldwide.



WIOMSA members in Mozambique have elected **Celia Macamo** as their Country Coordinator. Célia is an assistant lecturer at the Department of Biological Sciences at Universidade Eduardo Mondlane. She is pursuing her PhD in Aquatic Botany at Nelson Mandela Metropolitan University in South Africa. Ms Macamo is the country representative for the WIO Mangrove Network and the Contact Person for the Eastern African Forum for Payment for Ecosystem Services. Celia is no stranger to WIOMSA's activities. She was the focal point in the organization and coordination of the 8th WIOMSA Scientific Symposium in Maputo in 2013. As WIOMSA country coordinator, Ms Macamo sees her main goal as increasing the country's engagement with the Association and increase Mozambique's representation in WIOMSA's activities through recruiting individual and institutional members and stimulating competitiveness for grants. She also intends to increase cohesion between members, enhancing/creating a platform where members' issues can be discussed internally.



Dr. Sébastien Jacquemet was elected the Réunion Country Coordinator. Sébastien is a lecturer at the University of Reunion and Director of the Biology Department of the University. He is a beneficiary of WIOMSA MARG Grants and was part of the organizing committee of the 6th WIOMSA Scientific Symposium that took place in Réunion Island in 2009. His vision for the WIOMSA Réunion chapter is to have a strong contingent of paid members from La Réunion and an increased number of applications submitted to the MASMA program. He will be holding an annual seminar for the Chapter in order to enhance the dynamic of marine sciences and to help the emergence of new collaborative projects from Reunion Island, which could involve other scientists from the WIOMSA network.



Dr. Angus Macdonald takes over from Prof. Michael Schleyer as the Country Coordinator for South Africa. Angus is a lecturer in the School of Life Sciences of the University of Kwazulu- Natal. As a younger scientist, Angus's expectation is that he will be able to communicate WIOMSA's mission to the next generation of marine researchers in South Africa. He feels that his broader interest in marine research in the Western Indian Ocean (WIO) will help him to reach those interested in this part of South Africa's ocean diversity. He also intends to facilitate research endeavours between those based in SA and the rest of the participating WIO nations.



WIOMSA members in Tanzania have unanimously elected **Dr. Shigalla Mahongo** as the Country Coordinator for Tanzania mainland. Shigalla is a senior researcher at Tanzania Fisheries Research Institute (TAFIRI), based at the Institute's headquarters in Dar es Salaam. Shigalla has been an active member of WIOMSA, having joined the Association soon after its establishment in the early 1990s, and has since then contributed to its growth into a strong marine science and management organization. Mahongo has been actively involved in various activities of the Association, which has enabled him to identify areas which need future attention in the advancement of marine science and management in the region. Dr. Mahongo intends to work towards promoting Tanzania's participation in WIOMSA activities, thereby contributing towards improving the Association's performance and achieving its vision of advancing marine and coastal science in the region in a sustainable manner.



Dr. Saleh Yahya is the Country Coordinator for the WIOMSA Zanzibar Chapter. Dr Yahya is a lecturer at the Institute of Marine Science of the University of Dar es Salaam. Saleh is well known in WIOMSA, having been involved in the Secretariat's activities in a number of projects including the regional EU funded project, SmartFish. Saleh's intends to increase the number of WIOMSA institutional members for Zanzibar and is targeting government ministries and educational institutions as future members. He also intends to improve the participation of existing members in the Associations activities.



Volanirina Ramahery is the new WIOMSA Country Coordinator for Madagascar. Volanirina works in WWF Madagascar and Western Indian Ocean Program Office in Antsiranana (northern Madagascar) as the Regional Coordinator of the Diana Program. As Country Coordinator for Madagascar, she will active engage in developing opportunities for exchange for Malagasy marine scientists and students in order to improve their technical skills, through better information sharing and networking. She also intends to recruit and retain members to ensure the financial sustainability of WIOMSA.

We would like to congratulate the new Country Coordinators. Our membership is fortunate to have had the opportunity to choose from a number of outstanding candidates. We can indeed say with confidence that the talent, experience and professionalism of the new Country Coordinators will positively impact the capabilities of WIOMSA as a whole.

WIOMSA would also like to thank the outgoing Country Coordinators and the following individuals for effectively coordinating and supervising the Country Coordinator elections in their respective countries: Dr. Melckzedek Osore (Kenya Coastal Development Project), Dr. Chandani Appadoo (University of Mauritius), and Anisca Rajaona (WWF Madagascar).

Zanzibar Hosts Western Indian Ocean Training on Vulnerability Assessment, Scenario Planning, and Adaptation

The National Oceanic and Atmospheric Administration (NOAA) in partnership with WIOMSA and with funding from NOAA and USAID's Climate Change Resilient Development Project (managed by Engility Corp), hosted a mentor training and training course on Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies which took place in Zanzibar, Tanzania from May 31-June 6, 2014. The training brought together 11 mentors and an additional 20 participants from Comoros, Kenya, Madagascar, Mauritius (including Rodrigues), Mozambique, Seychelles, South Africa, and Tanzania. Two participants from outside the region (Maldives and Egypt) were invited to facilitate cross-regional learning.

The vulnerability assessment training was the second in a series of 3 trainings for MPA Managers that are focusing on understanding and communicating climate change; vulnerability assessment and tools for monitoring and assessing climate change. 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 first training, on Understanding and Communicating Climate Change, took place in Grahamstown, South Africa from November 19-23, 2013. During the vulnerability assessment training, participants built upon what they had learned in the first training about climate change impacts, climate information, and communicating climate change to better understand how to assess vulnerability to climate change, develop adaptation strategies, and engage stakeholders and communities.



Participant Allen Cedras presenting on his MPA during the gallery walk.

The objectives of the course were to: review how a changing climate can impact our coastal communities, explore the relationship of community resiliency to MPAs in the WIO region, and understand the relevance of community resiliency to climate adaptation; understand the significance of communities as a source of climate change and adaptation information and explore methods for obtaining information from communities; understand the concept of assessing vulnerability of resources in MPAs and the role of each component - exposure, sensitivity, and adaptive capacity – in that assessment; explore the use of scenario planning and scenario narratives as an alternate or additional tool to vulnerability assessment in order to envision what a plausible future could look like for a given MPA in the context of a changing climate; understand that the selection of adaptation strategies is based

on the ability of the actions to meet the goals and objectives, but that the selection must also factor in feasibility and practical considerations, and anticipate implementation challenges prior to being undertaken. The objectives of the mentor program preceding the Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies Training were 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 and plenary sessions), preparing them eventually to become course instructors.

The training was interactive and included several elements such as a participant poster session or gallery walk where participants presented the posters they had prepared on their MPAs, based on the homework from the first training.

The presentations covered an overview of the habitat and target resources in their MPAs, identified non-climate stressors and their effects on target resources, identified current and future climate stressors, evaluated how climate variability and change affect target resources, and presented issue statements for target resources. Course presentations were delivered on climate change in the WIO, community resilience and community data gathering tools, gathering information from local communities, assessing vulnerability and scenario planning, adaptation and implementation considerations.

The training also included a field trip day. The purpose of the field trip was threefold. Firstly, to give participants an opportunity to learn about an alternative income generating activity in an area adjacent to a local MPA. This involved visiting the Seaweed Centre in Paje, a socially-oriented company established to provide support to women who previously made use of the intertidal zone for the harvest of marine organisms for food. The women have been organized into a collective and have ownership in the company. They farm seaweed in the lagoon close to their villages and the Centre assists in providing processing facilities to enable the manufacture of spa products from the seaweed. This value addition enhances the women's income earning abilities and provides them with an alternative to relying on the highly fluctuating global prices paid for raw dried seaweed. The visit to the Centre allowed participants in the training to interact with the staff of the facility and discuss opportunities and challenges afforded by this approach to development of local communities. Seaweed farming provides an alternative to traditional use of the intertidal zone, and can potentially reduce pressure on this ecosystem, particularly in the face of increasing impacts of climate change. Warming temperatures in the lagoon



Participants interact with community members during the community engagement practical exercises at Menai Bay Conservation Area headquarters on the south coast of Zanzibar.

ecosystem have also had an impact on this alternative activity, prompting farms to move to deeper, cooler waters. The visit allowed participants to explore options for encouraging communities living within and adjacent to their home MPAs to engage in sustainable alternatives, indirectly benefitting the MPA management process by reducing pressure within the protected area.

The second purpose of the field trip was to allow participants to better understand a local MPA (Menai Bay Conservation Area), its resources, and the impacts of climate and non-climate stressors on the MPA's resources. Participants were briefed on the functioning of the conservation area by the MPA manager (one of the participants) and a senior ranger, and were able to discuss issues around management of the MPA with these staff members.

The third purpose of the field trip was to allow participants the opportunity to try out the community engagement skills learned in the classroom on Day 2. A group of sixty fishers and seaweed farmers from villages close to the

MPA were asked to assist with this process. Community members were split into four smaller groups, and training participants were assigned to work with a group. Each group of trainees had prepared the day before to practice a variety of participatory information gathering techniques. An hour and a half was spent by each group using two different techniques to interact with the community members and record information obtained. The trainee groups then reported back on the results of their exercises during dinner in the evening.

Overall the day was full and varied, and complimented the theoretical aspects covered in the classroom.

This second training session will be followed by a third in early 2015 on tools for monitoring and assessing climate change. It is anticipated that the same group of participants will participate. Plans are underway to ensure that this initiative continues into the future and several funding opportunities are being followed by WIOMSA and NOAA to support this regional activity for another 3 years.

The WIO-C bids farewell to Mr Ali Kaka and welcomes in a new Chair and vice-Chair



Group photo of participants at the WIO-C meeting at the Kunduchi Beach Hotel in Dar es Salaam, Tanzania, 24th June 2014.

A full day meeting of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) was held on 24th June 2014, at the Kunduchi Beach Hotel in Dar es Salaam, Tanzania. Apart from dealing with the normal business of the Consortium, it was necessary to elect a new Chair. In addition it was decided that a vice-Chair should be elected for the first time to stand in as necessary.

The WIO-C was officially launched at the Fifth Meeting of the Contracting Parties to the Nairobi Convention held in Johannesburg, South Africa in November 2007. The founding members included a group of like-minded international and regional organizations and agencies who wished to work together to support partnerships that advance marine research, conservation and management in WIO region. The

current membership of the Consortium includes BirdLife International, WCS, WIOMSA, WWF, CORDIO, CI, Blue Ventures, Fauna and Flora International, TNC, IUCN, Wetlands International, and RARE, while close working relationships are maintained with both the Nairobi Convention and the Indian Ocean Commission.

Mr Ali Kaka, IUCN's Regional Director for Eastern and Southern Africa, has served the WIO-C with distinction as Chair since 2011, and decided to step down after a long and fruitful tenure. He has played a major role in bringing together the major NGOs in the region for a common cause, and in addition has fostered closer working relations with both the Nairobi Convention and the Indian Ocean Commission. His depth of experience and quiet diplomacy has greatly contributed to the strength of the

Consortium that exists today. He will be sorely missed but his legacy will live on.

After a closely contested election, Dr Ademola Ajagbe of BirdLife International was elected as the new Chair to serve for a period of two years. Dr Nyawira Muthiga of WCS was elected as vice-Chair. In their acceptance speeches both new office bearers pledged to continue to foster the growing regional-level collaboration among organisations with similar goals and mandates, and to strive to strengthen the cooperation that has started to emerge in marine and coastal initiatives in the region.

The Marine Science and NGO communities congratulate both Ademola and Nyawira on their new positions and wishes them well in carrying out their duties over the next two years!

APPROVED MARG I Grants (2014-2015)

WIOMSA received 43 applications for MARG I in 2014, out of which 15 were awarded grants to conduct research in Kenya, Madagascar, Mauritius, South Africa and Tanzania. 50% of the successful MARG I projects were won by MSc. and PhD. students. The following tables show the names and affiliations of the scientists and the titles of their successful research projects.

Grantee	Title	Institutional affiliation
Flower E. Msuya	Deep water device for farming seaweed: a way of producing the higher valued <i>Kappaphycus alvarezii</i> for coastal communities in Tanzania	Institute of Marine Sciences
Ranjeet Bhagooli	Investigating photo-physiological performance, Symbiodinium and bacterial genetic types in diseased and non-diseased <i>Acropora muricata</i>	University of Mauritius
Aina Le Don NOMENISOA	Spatio-temporal distribution of chlorophyll for contributing in the mitigation of HABs impacts	Institute of Fishery and Marine Sciences, IH. SM/ University of Reunion Is.
Nikki Gartrell/ Sophie Van der Heyden	Genetic diversity, relatedness and gene flow in the vulnerable seagrass, <i>Zostera capensis</i>	Stellenbosch University
Juliet Furaha Karisa	Connectivity and genetic diversity of coral reef ecosystems in Kenya	Kenya Marine and Fisheries Research Institute (KMFRI)
Patrick Kimani Mang'uriu	Value Chain mapping of small scale marine fisheries in Kenya's south coast	Coastal and Marine Resources Development
Amon Kibiwot Kimeli	The effects of mangrove species and density variation on sedimentation and surface elevation change: Susceptibility of the mangroves of Mwache Creek to the effects of sea level rise	Kenya Marine and Fisheries Research Institute (KMFRI)
Mwita Marwa Mangora	Impact of protection on ecological dynamics in mangroves of Wami estuary, Saadani National Park, Tanzania	Institute of Marine Sciences
Daudi J. Msangameno	The Impact of Human-Induced Disturbances on and the Resilience of the Infauna Communities Associated With Sea Grass Meadows in Zanzibar, Tanzania	Institute of Marine Sciences
Maurice Ongon'ga Ogoma	An assessment of waterbird breeding success in relation to hydrological regimes in the Tana River Delta, Kenya	Egerton University
Pagu Julius	Assessment Of Reef Fish Biomass And Density In The Dar Es Salaam Marine Reserves, Tanzania	University of Dar es Salaam
Salum Soud Hamed	Effects of fermented and unfermented blood meal as substitute of fish meal in culture of juvenile silver pompano <i>Trachinotus blochii</i> (Lacepède, 1801) in a circulating aquaculture system	Institute of Marine Sciences
Mwanahija Salehe Shalli	Understanding the weather: Fishermen local knowledge and weather forecasting in Mkinga District, Tanga, Tanzania	Institute of Marine Sciences
Miriam Wainaina	Cage culture of seaweed <i>Kappaphycus</i> (Small-scale intensive aquaculture): is it an answer for better yield compared to the traditional off-bottom technique?	Kenya Marine and Fisheries Research Institute (KMFRI)
Zo Tsihoarana RASOLOARIJAO	Field survey on recent situation of seahorse in the Southwest of Madagascar and their husbandry mastering	Institute of Fishery and Marine Sciences, IH. SM

APPROVED Marine Research Grants II (MARG II)

A total of 11 MARG II grants were awarded between January to June 2014. These grants are awarded to individual scientists for the purpose of sharing or gaining technical experience as well as data processing and manuscript write up within the WIO region and, where necessary, outside the region. The awardees are from Kenya, Tanzania, Mauritius, and Madagascar. More than half of the applicants are PhD students who requested these grants to support visits to other institutions mostly for data analysis and analytical work.

MARG II

	Name and affiliation	Visited Institution
1	Charles Mitto Kosore, Kenya Marine and Fisheries Research Institute (KMFRI)	The University of Cardiz, Spain for analytical work and data analysis
2	Andrew Minu, University of Dar es Salaam	The Department of Water and Environmental Studies, Linköping University for analytical work and data analysis as part of his PhD
3	Joyce Kulekana, Tanzania Fisheries Research Institute (TAFIRI)	The School of Ocean Sciences, Bangor University for data analysis as part of her PhD
4	Edda Miray Fitahia, IH.SM, University of Toliara	The Mer Molécules Santé (MMS) EA2160, Faculty of Pharmacy, University of Nantes for analytical work and data analysis
5	Zo Tsihoarana Rasoloarijao, IH.SM, University of Toliara	The Department of Environmental Affairs in Cape Town for analysis of data
6	Mathias Igulu, Tanzania Fisheries Research Institute (TAFIRI)	The Radboud University of Nijmegen, the Netherland to defend his PhD thesis
7	Henitsoa Jaonalison, IH.SM, University of Toliara	The ARDA Marine Station Le Port, La Reunion for data analysis and writing a paper
8	Gedice Fernand, IH.SM, University of Toliara	The Faculty of Pharmacy, University of Nantes (France) to complete the studies of the third year of Ph.D and data analyses
9	Sandeep Shivram Beepat, University of Mauritius	The Faculty of Marine Sciences, Annamalai University, India for data analysis as part of his PhD
10	Zahirah Dhurmeea, University of Mauritius	The IRD UMR 212 EME (Écosystèmes Marins Exploités) in Mahe Seychelles as part of her PhD
11	Pavane Annasawmy, the University of Cape Town, South Africa	The Research Unit UMR EME in the Centre de Recherche Halieutique Méditerranéenne et Tropicale (CRH), Sete, France as part of her MSc

Building Capacity for Payment for Ecosystem Services (PES) and Climate Compatible Development (CCD) in the Western Indian Ocean (WIO) Region

By Mwita M. Mangora and Caroline Wanjiru

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 conducted a training workshop that aimed at building capacity of coastal and marine resources managers, policy makers, practitioners and conservationists and community group leaders from four major countries of the WIO (Kenya, Tanzania, Mozambique and Madagascar) on the concepts and practices of PES and CCD. The training was held in Kenya from 25th – 30th November 2013 at Kaskazi Beach Hotel – Diani with a field visit to Gazi Bay mangrove forest where there is a pilot carbon credit scheme, the Mikoko Pamoja Project. Thirty five participants attended. The rationale for this workshop emerged from the fact that while climate change is threatening to wreak havoc on ecosystems, the ever increasing human populations has also continued to put more pressure on the already vulnerable ecosystems, jeopardizing the ecosystem services that they provide for the well-being of human kind. Ecosystems are therefore at the cross roads of conservation and development. Valuable ecosystem functions and processes that make up ecosystem services such as clean air, pure water, rich soils and healthy biological activities are embedded in virtually every marketed product but their contributions are often not well understood, neglected, and undervalued.

Despite the multitude of opportunities of recruiting coastal and marine ecosystems services into PES schemes and the ample commitment towards practicing CCD in coastal areas, there are resource constraints and lack of necessary knowledge and skills in identifying potential sites and design of PES schemes suitable for both sites and local communities.

This training workshop therefore focused on enhancing understanding of the theories and practices of PES and CCD through lectures, discussions, and a field visit to one of the PES project under implementation. Participants brought up and shared various opportunities and challenges from their respective countries. Key topics that were covered during the workshop included:

- (i) Concepts, definitions, and values of coastal and marine ecosystems
- (ii) Society and climate change impacts, adaptation and mitigation
- (iii) Theory and practice of stakeholders' engagement in natural resources management
- (iv) Theory of valuation of natural capital
- (v) Theory and practice of PES with case study comparative local examples of Mikoko Pamoja Project and Lake Naivasha Basin project and Sasumua Watershed scheme in Kenya
- (vi) Identifying drivers and developing scenario for CCD
- (vii) Elements of policy and governance relevant to PES and CCD

Emerging market-based conservation tools like PES aims to reward and motivate people to conserve the ecosystems. Basically, PES is an arrangement involving contractual agreements that provide a financial incentive to communities for conservation and restoration that ensure sustainable supply of the ecosystem services. With the pressures of climate change, the concept of CCD is coined in the policy and governance dimensions. CCD means development that minimizes the harm caused by climate impacts, while maximizing the many human development opportunities presented by a low emission, more resilient, future. CCD addresses those contextual challenges that policy makers face in making choices about which activities to prioritize and pursue to ensure that the impacts of climate change are kept at the minimum and ensure 'triple win' strategies that result in low emissions, build resilience and promote development simultaneously. Simply, CCD essentially promotes mainstreaming climate change into policy options to reduce the need for choices. So, PES is one of the mechanisms that can be used to achieve CCD.

A full workshop report, a policy brief and a peer reviewed training manual will be produced as outputs of this workshop.

WIO Scientist Receives Prestigious International Award



Dr. Bosire working on mangroves in the Zambezi.

Dr. Jared Bosire was selected as the 2014 International Fellow of the Society of Wetland Scientists. The Award was conferred to Dr. Bosire at the ceremony of the Annual Conference of the Society of Wetland Scientists (SWS/JASM) held in Portland, Oregon, USA in May 2014. As the 2014 awardee, Dr. Bosire was given the opportunity to deliver a plenary presentation to the Society during the Annual conference on the 20th of May 2014. This was the inaugural presentation by an International Fellow to the Society, which was introduced to the annual conference agenda in 2014 by SWS in a bid to elevate the stature and visibility of the International Fellow award. Dr. Bosire was also feted at an official reception with the Board of Directors of SWS.

The International Fellow Award is presented to an internationally outstanding wetland scientist for distinguished contributions to the field of wetland science and for fostering the aims of the SWS within their own country and abroad. Dr. Bosire was nominated for the award by his wetland colleagues who spoke very highly of him and the impact and stature of his work. The Fellowship was presented in recognition of his exemplary record and service towards fostering the aims of SWS.

Dr. Bosire is an internationally leading wetland scientist with a focus on wetland biodiversity conservation to support livelihoods, specifically mangrove forest ecology and conservation. He is a renowned mangrove scientist and conservationist in Kenya, an extremely understudied region of the world. He previously worked as Assistant Director responsible for marine and coastal research at the Kenya Marine and Fisheries Research Institute. He is currently the Conservation Manager for WWF Kenya Country Office. Dr. Bosire is a dedicated mangrove scientist with impressive scientific contributions on mangrove ecology, conservation, restoration, and policy.

His research and publications have been on a diverse range of topics from restoration ecology and mangrove forest regeneration to sustainable forest management and poverty alleviation. He has worked for many international organizations as lead technical expert and has played a very important role in wetland science capacity building in East Africa and the western Indian Ocean region. At WWF, Dr. Bosire is currently engaged in policy development and conservation in a multi-stakeholder environment at national, regional and international levels. He has shown his commitment to the conservation, management and understanding of mangrove forests in Kenya, the WIO region, and globally.

WIOMSA would like to congratulate Dr. Bosire on receiving the SWS International Fellow Award.

Regulating Noise Pollution from Offshore Oil and Gas Exploration in Kenya

By Dr. Nicholas Kimani



Whales are among the marine animals known to be susceptible to a range of physiological effects and injuries that have been attributed to sources of anthropogenic sound.

Introduction

The huge interest in offshore oil and gas exploration along Africa's east coast promises to turn the region into the epicentre of an energy boom.

Over the last decade, countries like Kenya have attracted millions of dollars in investments from international oil companies, which utilize the latest technologies, including advances in deep-sea drilling, to find new deposits of oil and natural gas. These developments are certainly exciting. At the same time, we should pay attention to the environmental concerns and scientific questions posed by such activities.

Seismic Surveys

One issue that we should be concerned about is the practice of seismic surveying, which plays an integral part in offshore oil and gas exploration.

This is the practice whereby oil and gas companies build profiles of the seabed by bouncing sound waves off the seafloor to detect deposits. Specialized equipment is then used to detect and record the returning reflections. Instruments, known as hydrophones, are towed behind the air-guns and are then used to record the series of reflections from the layers of rock that make up the ocean floor. Based on knowledge of the velocity at which the energy released from an explosion travels through different types of rock, geo-physicists can develop profiles of the seafloor.

During seismic surveys, blasts of compressed air are emitted every ten to sixty seconds. The surveys can last anywhere from weeks to many months. Furthermore the sound generated, which is comparable to a plane taking off, can be detected literally thousands of kilometres

away. This is because water is an excellent medium for sound transmission. Sound travels almost five times faster through seawater than through air, and low frequencies can travel hundreds of kilometers with little loss in energy.

Environmental Concerns

The main environmental concern is that offshore seismic surveys may impair hearing and cause ear damage in marine fish and mammals.

Whales and dolphins are highly sensitive to the high-energy seismic explosion. Seismic survey activity has been linked to these animals being stranded on beaches due to their disrupted hearing and sense of direction. Fish also utilize sound for navigation, selection of habitat, mating, predator avoidance, prey detection and communication. Impeding their ability to hear biologically relevant sounds might interfere with these critical functions.

The Legal Position

There is no Kenyan legislation that deals specifically with the adverse environmental impacts of seismic surveys.

In general, the main law currently governing Kenya's upstream sector is the Petroleum (Exploration and Production) Act, last revised in 2012. Under the Act, ownership of hydrocarbons is vested in the State, and the Minister of Energy has wide-reaching powers to regulate the sector. The Act also includes a model Production Sharing Contract (PSC), which contractors have to enter into with the State as the basis for engaging in exploration and production (E&P) activities, and subsequently, for sharing proceeds of production with the State. Both the Act and the model PSC are acknowledged as lacking appropriate provisions on environmental protection.

Kenyan law also regulates offshore oil and gas through the Environmental Management and Coordination Act of 1999 (EMCA), and the Environmental Impact Assessment and Audit Regulations (EIA/EA) of 2003. Essentially, an EIA is conducted in order to identify impacts of a

project on the environment, predict likely changes on the environment as a result of the development, evaluate the impacts of the various alternatives on the project and propose mitigation measures for the significant negative impacts of the project on the environment.

Neither EMCA nor the EIA/EA Regulations, however, create sectoral environmental criteria specifically aimed at regulating seismic surveying activities. Unfortunately the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 fail to set specific standards.

Without setting specific standards, the question may be asked as to how the government would control, remedy or stop seismic surveying that is affecting Lamu's Manda Bay, whose shores are lined with mangrove forests, where fish stocks are known to spawn. Similar concerns would apply to the marine life found along Kenya's South Coast—the turtles and whale sharks of Diani, or the Dugong population of Watamu, or even the ecotourism industry that has grown around these species.

Summary

Although exploration and production in the offshore arena is essential if worldwide demand for oil and gas is to be met, it must be undertaken responsibly. To do this, government must institute the necessary scientific studies that would inform appropriate legal interventions.

We can only hope that the regulatory energies currently being directed towards establishing a stable legal regime for oil and gas activities in Kenya will extend to developing a comprehensive environmental legal framework.

The gloomier prognosis, that offshore oil and gas exploration and production activities could proceed with minimal concern for environmental impact, hardly bears contemplating.

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Latest Issue of WIO Journal of Marine Science is out!

The latest Issue of the Western Indian Ocean Journal of Marine Science, Volume 12 No. 1 is out and consists of ten papers, which are:

- **Effects of Sewage Discharge on Polychaete Communities in East African Peri-urban Equatorial and Subtropical Mangroves** - Gil Penha-Lopes, Pedro Fidalgo e Costa, João Gil, Stefano Cannicci, Adriano Macia, Stephen Mwangi, José Paula
- **Distribution and Abundance of the Sponge *Spheciospongia vagabunda* (Ridley, 1884) (Phylum: Porifera, Class: Demospongiae) in a Shallow Mauritian Lagoon** - Sandeep Shivram Beepat, Chandani Appadoo, Daniel E.P. Marie, José Paula, Kannan Sivakumar
- **Patterns of Meiofaunal Colonisation as an Indicator of Reforested *Rhizophora mucronata* Mangrove Recovery in Gazi Bay, Kenya** - Amos Kyalo Mutua, Agnes Muthumbi, Micheni J Ntiba, A. Vanreusel
- **Survival and Growth of *Tilapia zillii* and *Oreochromis urolepis urolepis* (Order Perciformes; Family Cichlidae) in Seawater** - Alex Nehemia, Aviti John Mmochi, Matern Mtolera
- **A Questionnaire-based Consideration of Coral Farming for Coastal Socio-economic Development in Mauritius** - Nadeem Nazurally, Baruch Rinkevich
- **Tourism, Reef Condition and Visitor Satisfaction in Watamu Marine National Park, Kenya** - Benjamin Cowburn, Robert Sluka, Joy Smith, Mohamed Omar Said Mohamed
- **Holothurian (Echinodermata) Diversity in the Glorieuses Archipelago (Eparses Islands, France, Mozambique Channel)** - Chantal Conand, Mulochau Thierry, Pascale Chabanet
- **Length-Weight Relationship and Condition Factor (K constant) of *Dentex maroccanus*, Valenciennes 1830 (Family Sparidae) at Malindi, Kenya** - Christopher M. Aura, Rashid O. Anam, Safina Musa and Edward Kimani
- **Record Litter Size for the Bull Shark, *Carcharhinus leucas* (Muller & Henle, 1839), Documented in the Seychelles** - J.E.G. Nevill, D. Bamboche and H. Philoe
- **First Observation of the Slow Dragonet *Callionymus aagilis* Fricke, 1999 in Its Natural Environment** - M. Pinault, A. Daydé, R. Fricke



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WIOMSA through its Commissioned Competitive Research Grant Programme is pleased to announce a call for proposals for research on "Understanding the Port-Environment Nexus for the Major Ports of the Western Indian Ocean region". In the first call issued early this year, none of the proposals submitted were successful. The focus of the call has changed from understanding the relationships and interactions between ports, urban development and coastal and marine environment to focus on ports and coastal and marine environment interactions.

The deadline for submitting full proposals at WIOMSA is 30th September 2014. The MASMA Programme Committee will review the submitted proposals and applicants will be informed of the Committee's decisions within a period of two months. Proposals should be submitted to: secretary@wiomsa.org

For more details, please visit www.wiomsa.org



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