WIOMSA

Coasts Ocean and People

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

ANNUAL REPORT 2018

WESTERN INDIAN OCEAN
MARINE SCIENCE ASSOCIATION

25 years

WIOMSA would like to thank the following people for their contribution to the 2018 Annual Report

PHOTOS

Aadila Omarjee, Council for Scientific and Industrial Research (CSIR), South Africa
Carlos Littulo, Centro Terra *Viva-Estudos e Advocacia Ambiental*, Mozambique
Christophe Mason Parker, Global Vision International, Seychelles
Ewout Knoester, Wageningen University & Research, Netherlands
Fanny Kerninon, *Université Brest*, France
Frédéric Ducarme, *Le Centre universitaire de formation et de recherche de Mayotte,* Mayotte, Comoros
Lina Mtwana-Nordlund, Stockholm University, Sweden
Isabel Urbina Baretto, *Université de La Réunion*
James Robinson, University of Lancaster, UK
Jean Harris, WILDTRUST, South Africa
Jeremie Ndriamanja, SEED, Madagascar.
Mário Ngonga, Quirimbas National Park, Mozambique
Mattia Ghilardi, University of Perpignan, France
Nuri Steinmann, Aquaculture Value Chain for Higher Income and Food Security in Malawi, Malawi
Obed Matundura, Kenyatta University, Kenya
Pedro Ferreira, Pedro Ferreira Underwater Photography, Mozambique
Peter Chadwick, conservation photographer, South Africa
Rahim Saggaf, Rahim Saggaf Photography, Zanzibar
Radonirina Lebely Botosoamananto, *Université de Toliara*, Madagascar
Romy Chevalier, South African Institute of International Affairs, South Africa
Sumaiya Arabi, CSIR, South Africa
Thabang Makua, TM Photography, South Africa

CONTRIBUTING AUTHORS

Nina Wambiji, Kenya Marine and Fisheries Research Institute, Kenya

COVER PHOTOS

The Port of Durban. © Thabang Makua, TM Photography, South Africa
Teamwork in the 77th Lava flow reef, Reunion Island. © Isabel Urbina Baretto
Seaweed farmers in Zanzibar. © Rahim Saggaf

BACK COVER PHOTO

Port of Port Elizabeth. © Aadila Omarjee

PRINTING

Jamana Printers, Dar es Salaam, Tanzania

Editing: Lilian Omolo and Claire Attwood

LAYOUT & DESIGN

Cohoots in Design, South Africa

WIOMSA

Coasts Ocean and People

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

ANNUAL REPORT 2018

25 years

Celebrating the past, shaping the future

Boat building in Pangani, Tanzania © Rahim Saggaf

TABLE OF **CONTENTS**

A WORD FROM THE **PRESIDENT**

The year 2018 marks WIOMSA's 25th anniversary. As we celebrate this huge milestone and look back at how far we have come as an organization, I am certain that our visionary founders never expected the small non-governmental organization they set up in 1993, with seed financing of less than USD 30 000 annually from Sida Sarec – disbursed through the IOC of UNESCO – to become one of the most influential regional players in the marine and coastal science arena in the Western Indian Ocean. Over the years it might have felt like we were not doing much, that our operations may not have yielded much, but today we can look back with pride and recognize that the building blocks that were laid by the founders of WIOMSA have borne much fruit.

When we reflect on our success, we can confidently state that it stems from two things: first what we have contributed to the field of marine and coastal science in terms of research, governance and management; and secondly and more importantly, what our constituents and beneficiaries have built for themselves through our partnership with them.

We knew from the very beginning that our focus and interest would be in linking the knowledge that emerges from research to the management and governance issues that affect marine and coastal ecosystems in the region. We took bold steps to achieve this, from the deliberate and strategic planning of research projects to foster institutional, multi-country and multidisciplinary collaboration, to the involvement of management authorities in the planning and execution of research projects. From the start we established good communication and ensured the dissemination and sharing of research results through various media, including publications, the WIOMSA Symposium and other conferences. We also cultivated strategic partnerships with intergovernmental organizations to further our science to policy agenda.

From the onset, we were very focused on capacity development. This made sense in the early 1990s because the marine and coastal research landscape lent itself to such a response. It was characterized by very few research institutions, with little or no involvement of national scientists in the national and regional research programs; a limited number of marine scientists, with the majority of them being fisheries biologists; an absence of research priority setting mechanisms at the regional level; limited collaboration; and sporadic linkages to priority management issues. WIOMSA benefitted early on from establishing and solidifying its niche as the go-to competitive marine and coastal research grant council which responded to the priority needs of the region, a position that the Association continues to enjoy. Much has changed since the launch of WIOMSA a quarter of a century ago and the Association has had to strategically adapt to the changing environment to remain relevant. Our programmes have had to change too; for instance, today our capacity development initiatives are geared towards improving capacity for ocean governance.

We have been extremely fortunate to have had the generous, dedicated and committed support of the Government of Sweden through Sida, which has enabled us to grow and expand our work programme over the past two decades. Our work has also been made possible because of the contributions of donors and partners such as USAID, the US State Department, United Nations Environment Programme, the European Union, Mac Arthur Foundation, IOC of UNESCO, Indian Ocean Commission and many others who share in our vision of promoting the development of marine and coastal science professionals, advancing marine

and coastal science, and promoting the conservation and sustainable development of the coastal and marine environment. Good partners have played a crucial role in our success. WIOMSA's institution building and partner-centered approach ensures that the people with whom we work can take charge of their projects and the progress they have made and can create their own pathways to optimal, sustainable, resilient institutions that ultimately contribute to a prosperous Western Indian Ocean where the resources are managed sustainably. We also have a very good team in terms of members. I believe our members carry WIOMSA in their hearts in the countries we operate in and they will always go the extra mile for the Association.

While we have achieved much success today, we are not complacent. We continue to work hard, to seek improvements to our strategic model and learn new skills. We maintain our spirit of partnership and service to the coastal and marine environment of the Western Indian Ocean and our willingness to venture into new and challenging grounds. We have set our sights on the very long term and are committed to the goals we have set. To this end, there has been a move on our part towards consolidating knowledge from publications into regional reports and programmes such as the Regional State of the Coast for the Western Indian Ocean Region, the Climate Change Strategy for the Western Indian Ocean Region and the Critical Habitats and Marine Protected Areas Outlook of the Western Indian Ocean. We have shifted our engagement beyond the publication of scientific materials to the realm of policymakers by facilitating the establishment of the Science to Policy Platform within the Nairobi Convention. We hope this will lead to consistent dialogue to influence policymakers on the protection and maintenance of critical marine habitats in the face of national development initiatives.

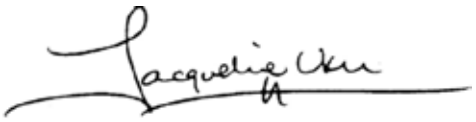
Our challenge now is to ensure we continue to grow and become an even more successful organization in the next 25 years. There are a few things which are key to getting us there. Corporate governance and leadership are crucial to WIOMSA's success. In February 2018, the WIOMSA Board of Trustees held a meeting to elect the officials of the Association and I am honoured to report that I was elected to continue as WIOMSA President for a second term. We welcomed Prof Ranjeet Bhagooli as the Vice President and Prof Yunus Mgaya as the Treasurer of the Association. We also re-appointed Prof Paul Siegel as a returning co-opted Board Member and appointed Ms Rebecca Loustau-Lalanne as the second co-opted member. The Board looks forward to the fresh perspectives Rebecca brings to WIOMSA with her experience as First Secretary in the Multilateral Affairs Division of the Ministry of Foreign Affairs in Seychelles and hopes to use her expertise to establish a stronger science to policy link.

WIOMSA's sustainability is another key pillar of the Association. We set the foundation for sustainability in 2012 with the establishment of the WIOMSA Trust. We will continue to mobilize resources to capitalize the trust and have begun investing the funds that we have raised so far. In 2018, the Board appointed Mr Philippe Sauce as its financial advisor on matters pertaining to the WIOMSA Trust. Philippe served on the WIOMSA Board from 2014 to 2017 and brings much needed expertise in the management of the WIOMSA Trust and the implementation of the WIOMSA Strategic Plans, the development of which was initiated in 2017.

I am pleased to report that we made good progress in advancing the key principles of the Strategic Plan in 2018. The initial draft of the Strategic Plan was circulated to WIOMSA members and partners who have provided substantial comments and insights that the Board will be making decisions on in preparation for the launch of the plan in 2019.

In terms of our programme areas, we will continue to work on communicating our science meaningfully through the science to policy engagement, we will focus on building our project portfolio and building trust amongst our members. We will pursue long-term engagement with development partners and work with intergovernmental partners to further the WIOMSA agenda. The focus of our current work programme (2018 to 2022) "Generating the scientific and policy-relevant knowledge for achieving SDG 14 and facilitating implementation of the Paris Agreement in the WIO Region" has helped us to assess our achievements against the Sustainable Development Goals (SDGs). We have partnered with various institutions to work on SDG 14. For instance, we have started working on targets 14.1 on marine pollution in collaboration with the African Marine Waste Network and the IOC of UNESCO. We are working on target 14.3 on ocean acidification in collaboration with the IOC of UNESCO, and on targets 14.2 and 14.5 with the Nairobi Convention. I am proud to report, that in 2018 we launched new projects on ocean acidification, marine litter monitoring, and on coastal cities; all of which are highlighted in this Annual Report. Another key area that we are beginning to focus on is innovation, intellectual property and data management. We have engaged a consultant whose terms of reference include developing a data management policy to provide direction on accessibility of the information and knowledge that is generated from WIOMSA projects. I consider this a very timely action by the Board. The Network of Women in Marine Science that I launched during the 10th WIOMSA Scientific Symposium in 2017 made good progress in its operations in 2018. Its journey is outlined in detail in this report.

It would be remiss of me to conclude this statement without expressing my sincere appreciation to fellow Board members, the MASMA Programme and Cities and Coasts Project committees, the WIOMSA Trust trustees, the editorial board of the Western Indian Ocean Journal of Marine Science, the WIOMSA Country Coordinators, our members, donors, partners and committed employees for their support over the years. It is with your support that we have been able to achieve such growth in 25 years. Together, let's claim our victories, celebrate our progress and keep pushing forward on the path to our vision. I hope you will continue with us on this journey. My Board colleagues and I will do our very best to ensure that you will be inspired to continue to be part of the WIOMSA journey into the future.



FROM THE **WIOMSA SECRETARIAT DESK**

The year 2018 was a defining one on several fronts. We launched new initiatives, forged ahead on the science to policy nexus, fostered new strategic partnerships and accomplished much in our capacity development and research activities. All these efforts, individually and in combination, contribute to WIOMSA's foray into new areas of research, focusing on coastal cities, ocean acidification and marine litter/microplastics, developing new partnerships and strengthening the links between science, policy, action and society.

A damselfish guards its patch of turf next to a coral reef restoration site in Mauritius. © Christophe Mason Parker

Innovative initiatives

In 2018, we launched a new four-year initiative, the Cities and Coasts (C&C) Project which is funded by the Government of Sweden and whose goal is to build and strengthen human and institutional capacity in coastal and marine planning for sustainable coastal cities in the Western Indian Ocean region. This is the first time that WIOMSA is implementing a project whose focus is coastal cities. To realize its goal, the C&C Project is aiming to mobilize scientists to collaborate with other key stakeholders in coastal cities – such as local authorities, city planners, policymakers from central government, the private sector, civil society and citizens – in research co-design and the co-production of the knowledge, capacity building, and decision-support tools needed to support the transformation of coastal cities towards sustainability. The recognition of cities as the locus for change in economy, society and environment, started at the Rio +20 Conference and culminated in the 2030 Agenda, with the inclusion of SDG 11: make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable Cities and Communities). SDG 11 recognizes urbanization and city growth as a transformative force for development.

We are delighted to announce that for the first time, WIOMSA is providing both technical and financial support to selected countries in the region to set up monitoring programmes for marine litter and ocean acidification. Monitoring programmes are important because they provide the first steps in establishing baselines against which to measure change, particularly in establishing the degree of success of mitigation strategies.

Such monitoring simultaneously sets priority targets for interventions necessary to ensure that countries track their progress toward fulfilling their SDGs. Support for the establishment of marine litter monitoring programmes has been provided to Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania, while support for ocean acidification monitoring programmes has been given to Kenya, Mauritius, Mozambique, Seychelles, South Africa and Tanzania.

Another exciting initiative we began in 2018 was the development of the Data Governance and Management (DGM) Policy, whose objective is to contribute to the following actions and activities: monitor and evaluate the use of WIOMSA data for regional impact; communicate the value of WIOMSA project outputs, outcomes and impacts, including the long-term value of regionally important data; reduce duplication of investment in data; and ensure that WIOMSA data can be known (discovered) and contributes to a regional pool of knowledge. Project teams will be expected to demonstrate how and where project outputs and data are published and they remain responsible for reporting the external publications of MASMA-related products to WIOMSA. All requests for data access and reuse must be reported to WIOMSA in order to trace its use and potential impact. WIOMSA will maintain repositories at OceanDocs and the Nairobi Convention Clearinghouse.

The development of the policy was preceded by stakeholder engagement that involved MASMA project team leaders who were sent a questionnaire in order to obtain operational insight into the current practices and constraints of the programme, as it relates to spatial data generation, creation of metadata, spatial data availability and accessibility, etc. Through this exercise, it was determined that while there may be a repository of reports and other written outputs, the data underlying the MASMA-funded research is not discoverable and therefore not available or accessible for reuse. Three key findings of the questionnaire on current MASMA data governance are shown below.

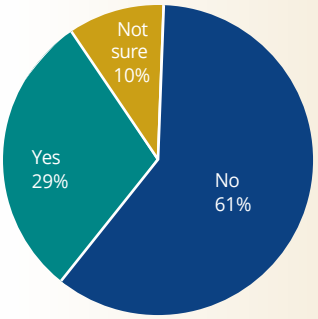


Fig A. **Was metadata compiled for the data?**

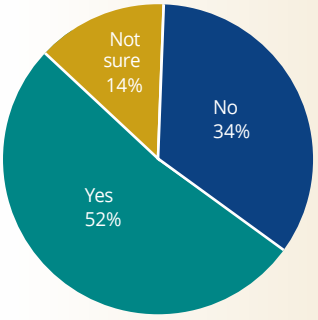


Fig B. **Are there any restrictions on the use of the dataset?**

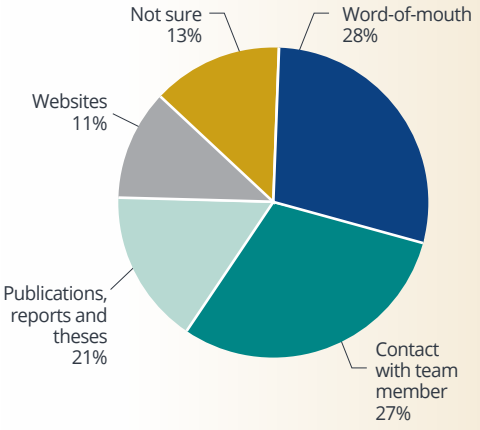


Fig C. **How can someone know about the dataset? How can the dataset be found?**

Science to policy initiatives

The development of the Science to Policy Platform for the Nairobi Convention has been discussed in a series of technical meetings organized by the Nairobi Convention Secretariat.

WIOMSA has been instrumental in the facilitation of the Science to Policy Platform dialogue. The aim of the platform is to support the efforts of the Contracting Parties of the Nairobi Convention to integrate relevant scientific evidence and findings into their efforts to protect, manage and develop the coastal and marine environment in a sustainable manner.

The Science to Policy Platform was piloted during the Ninth Conference of the Parties to the Nairobi Convention (COP 9), held in Mombasa, Kenya in August 2018. This COP was preceded by two key steps. First, WIOMSA in collaboration with the Nairobi Convention, invited members of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) and the Forum of Academic and Research Institutes (FARI) to submit a list of emerging issues of regional and/or global importance to be tabled at COP 9 for information or decision. Several institutions responded to the request. The second step was the organization of "the Science to Policy Forum for the UNEP/Nairobi Convention", jointly convened by the Nairobi Convention, Indian Ocean Commission (COI) and WIOMSA and held in Durban, South Africa in July 2018. The meeting, which was attended by senior government officials and experts drawn from non-governmental organizations, academic and research institutes, examined the discussion papers and made policy recommendations which were forwarded to the COP 9 for deliberation and decision.

This process proved to be very efficient because at least 60 percent of the decisions adopted in the COP 9 came through it. Contrary to previous COPs, these decisions were supported by strong scientific evidence and were discussed in at least two meetings before being presented to the meeting of the Heads of Delegation for deliberation and adoption.

Preamble

Acknowledging the partnership with the United Nations Human Settlements Programme to address the environmental challenges and opportunities posed by rapid urbanization, especially of coastal cities in the Western Indian Ocean region as articulated in the 2030 Agenda for Sustainable Development, Sustainable Development Goal 11 and the New Urban Agenda on sustainable cities and communities,

Decisions

- ***Decision CP.9/9. Climate change adaptation and mitigation***
  - To further urge Contracting Parties to consider undertaking climate change vulnerability assessments of their urban coastal areas, including of urban spatial planning processes, and to consider working towards integrating marine natural capital;

- ***Decision CP.9/13. Enhancing cooperation, collaboration and support with partners***
  - To request the Secretariat to collaborate with the United Nations Human Settlements Programme and other partners to develop a regional action plan and road map to assist the Contracting Parties to integrate the New Urban Agenda into coastal cities in the Western Indian Ocean region for the protection of the marine and coastal

As a co-organizer of COP 9, WIOMSA played a crucial role in the organization of both the Science to Policy Forum and COP 9, not only through supporting participation of some of the FARI members, providing Secretariat support and covering simultaneous translation costs during COP 9, but also facilitating and preparing, in conjunction with partners, several discussion papers that led to a number of decisions. This is the second time that WIOMSA has co-organized a COP, the first being COP 8 in June 2015.

One of the main achievements of the C&C Project in 2018 was its success in promoting the importance of coastal cities as one of the transformative forces of the coastal and marine environment to the scientific community and decision-makers at the regional level, and the resulting recognition that this should be prioritized as an important area for action. This led to the addition of texts in the Preamble and a decision related to coastal cities in the COP 9.

Strategic partnerships

Partnership building is an area where significant progress was made in 2018. Several new partnerships were created with the IOC of UNESCO for development of the monitoring programmes for ocean acidification; with the African Marine Waste Network for the marine litter monitoring programmes; and another with the German–Africa Partnership Programme of BMZ for work in the science to policy space.

Also, through the C&C Project, two new partnerships were initiated. The first was with UN-Habitat that resulted in the organization being formally recognized as one of the key partners of the Nairobi Convention. The

Out at sea early in the morning, Sainte Luce, South East Madagascar.
© Jeremie Ndriamanja, SEED Madagascar

second was with the Global Environment Facility/United Nations Environment Programme-funded project on "Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIO-SAP)" which focuses on marine litter and municipal wastewater, among other issues.

Strong collaboration between WIOMSA and the Nairobi Convention has led to good progress being made in the development of the Science to Policy Platform and the Critical Habitats and Marine Protected Areas Outlooks for the Western Indian Ocean. These initiatives aim to inform recommendations to Contracting Parties of the Nairobi Convention with a view to assisting them to achieve SDG targets 14.2 and 14.5. Details of these initiatives are provided in other sections of this Annual Report.

Grants to support different activities

A total of 69 grants were issued in 2018 through the MASMA Programme (research, workshops/courses and publications); monitoring programme; C&C Project (research and workshops/courses) and MARG programme.

An analysis of the projects that we have supported in 2018 shows that a majority of the MASMA/C&C Project and monitoring programme grantees (both from within and outside the region) are first-time recipients. Two inferences can be drawn here: the first is that these granting programmes are attracting new applicants outside the traditional constituency, and secondly that new topics such microplastics pollution, tuna fisheries and coastal cities that have not been previously proposed are included in the approved projects. Interesting patterns are revealed from a gender analysis of the lead experts of the different projects. On one end of the spectrum are the research and ocean acidification projects, which are overwhelmingly male dominated, and on the other are the marine litter and MARG III, which are highly dominated by female scientists.

Building capacity for ocean governance

GRANT PROGRAMME	COMPONENT	NUMBER	COUNTRY COVERED
MASMA	Research	4	Kenya, Mozambique, South Africa & Tanzania
	Training workshops/courses	2	
	Publications	1	
Monitoring	Marine litter	6	Kenya, Madagascar, Mauritius, Mozambique, Seychelles & Tanzania
	Ocean acidification	6	Kenya, Mauritius, Mozambique, Seychelles, South Africa & Tanzania
C&C Project	Research	2	Kenya & South Africa
	Training workshops/courses	1	
MARG	MARG I	19	Kenya, Madagascar, Mozambique & Tanzania
	MARG II	7	Kenya, Madagascar, Mauritius, South Africa & Tanzania
	MARG III	21	Kenya, Madagascar, Mauritius, Mozambique, South Africa & Tanzania

Building capacity for ocean governance

In 2018, the MASMA programme and C&C Project supported more than 200 individuals from the WIO region (excluding Somalia) to implement different capacity development activities. This included students who benefitted from marine research grants (MARG). The grants are meant to support: research in home countries for young and upcoming scientists (MARG I); conducting data analysis or thesis write-up outside home institution (MARG II); and travel grants to symposiums and conferences to present findings (MARG III). More than 44 percent of the successful MARG I projects were won by masters and doctoral students. This highlights the programme's contribution to capacity development in different institutions in the region. The programme further supports equal participation of young and upcoming female marine scientists in the region in various capacity developments programmes.

We at the Secretariat wish to thank the Board, the MASMA Programme and C&C Project committees, the WIOMSA Trust trustees, the editorial board of the Western Indian Ocean Journal of Marine Science, the WIOMSA Country Coordinators, our members, donors and partners for their commitment and support to the Association and also for keeping us on our toes by always giving us feedback and good advice!

Port of Durban
© Ardila Omarjee

GOVERNANCE AND BOARD DECISIONS

The WIOMSA Board of Trustees aims to continuously strengthen its structure through streamlining and optimizing its governance and operations.

The Board governs the work of the Association, shaping WIOMSA's direction through key policy decisions that guide its day-to-day activities and providing guidance for the accomplishment of the organization's strategic mission and objectives. The Board aims to build strong institutional governance within WIOMSA and provide effective management tools for the Association.

The WIOMSA Board of Trustees met twice in 2018, in March and October, and made key strategic decisions as highlighted in this section of the Annual Report.

Mother and child. Subsistence harvesting, Black Rock, KwaZulu-Natal, South Africa. © Toufiek Samaai

Crafting the new WIOMSA vision: key Board decisions in 2018

Strategic Plan for WIOMSA: integrating members' comments

The Board initiated the development of a Strategic Plan for WIOMSA in 2017. A working draft of the plan was circulated to WIOMSA members in May 2018 and the members overwhelmingly supported the recrafting of the draft objectives and core principles of the strategy to be more inclusive of the engagement of WIOMSA members and constituents in the achievement of WIOMSA's vision.

Based on the comments of members and partners, the Board proposed a new WIOMSA vision: "WIOMSA is a leader in promoting the development of marine and coastal science professionals, advancing marine and coastal science, and promoting conservation and sustainable development of the coastal and marine environment".

Further, the Board proposed new objectives for the Strategic Plan as follows: (a) support high quality science for management and policy applications (knowledge generation); (b) engage stakeholders (governments, intergovernmental organizations, businesses, community groups and the citizenry) to enhance the use of science for societal and environmental benefits and to influence the research agenda; (c) strengthen and facilitate science to policy dialogue; (d) promote and facilitate innovation in science and management; and (e) promote and strengthen the participation of WIOMSA members in the Association's activities. The Board will work with the consultants and the Secretariat to complete the Strategic Plan in readiness for its launch in 2019.

Large catch of Emperor Red Snapper (Lutjanus sebae), or "bourgeois", by offshore commercial fishers in Seychelles. © James Robinson

New WIOMSA Board members and officials

The 38th meeting of the Board of Trustees was held in Nairobi, Kenya in February 2018 and the first order of business was the election of the new Board officials and appointment of co-opted Board members. Dr Jacqueline Uku was elected to continue serving as WIOMSA President, Prof Ranjeet Bhagooli was elected Vice President and Prof Yunus Mgaya as Treasurer. The Board of Trustees retained Prof Paul Siegel as a co-opted member for another term, and appointed Ms Rebecca Loustau-Lalanne as the second co-opted Board member. The Board appointed Philippe Sauce as its financial advisor to the WIOMSA Trust. The Secretariat and the broader WIOMSA community would like to take this opportunity to wish the new Board the best of luck in undertaking their duties over the next four years.

Appointment of new Programme Committee members

The Board appointed new MASMA Programme committee members and made some structural changes to the composition of WIOMSA's Programme committees. Prof Kassim Kulindwa was appointed as the Chair of the MASMA Programme Committee (MASMA PC), taking over from Prof Ian Bryceson who stays on as a member of the committee. The Board appointed Prof Håkan Berg, Prof Jorge Santos, Prof Moenieba Isaacs, Dr Jan Robinson, Dr Pascale Chabanet as new PC members.

In addition, the Board decided on the constitution of a new PC to oversee the new Cities and Coasts (C&C) Project. Prof Lena Gipperth moved from the MASMA PC to head the C&C Project Committee. Dr David Gilbert also moved over from the MASMA PC, joining the C&C PC as a member. Other members who were appointed by the Board include Prof Mwakio Tole, Dr Elin Torell, Prof Pius Yanda and Prof Coleen Vogel.

The election of WIOMSA Country Coordinators

The Board approved the results of the WIOMSA Country Coordinators elections held in April 2018 in Kenya, Madagascar, Mauritius, Mozambique, La Réunion, South Africa, Tanzania mainland and Zanzibar. Dr Nina Wambiji, Ms Volanirina Ramahery, Dr Saleh Yahya, Ms Célia Macamo, Prof Sébastien Jaquemet and Dr Angus MacDonald are serving for a second term while Dr Blandina Lugendo and Mr Nadeem Nazurally are were elected as new Country Coordinators. The Board also requested Dr Jude Bijoux to continue in service as the Country Coordinator for Seychelles.

Appointment of WIOMSA staff

The Board approved the recruitment of three new staff: a Coordinator for the C&C Project, a Communications and Engagement Coordinator, and an Accountant to service both programmes and the Association as a whole. The new staff are Dr Valentine Ochanda, Ms Jedida Oneko and Ms Yusra Saleh.

The future of the WIOMSA Symposium

The Board decided on measures to improve the quality and overall experience at the WIOMSA Scientific Symposium, including holding the Symposium triennially rather than biennially and capping the number of participants attending the event, based on quality of abstracts and stricter registration measures. The improvement of the quality of abstracts will be attained through the introduction of longer abstracts and/or completed papers and classification of abstracts into "completed work" and "work in progress". The Board also discussed the possibility of holding sub-regional meetings; but this will be explored further after consultations with WIOMSA Country Coordinators and other key partners.

The network of Women in Marine Science

Following the launch of the network of Women in Marine Science in the Western Indian Ocean in October 2017, WIOMSA commissioned a consultancy to assess the needs and aspirations of women in marine science and to develop a proposition of the institutional arrangements and activities for the network.

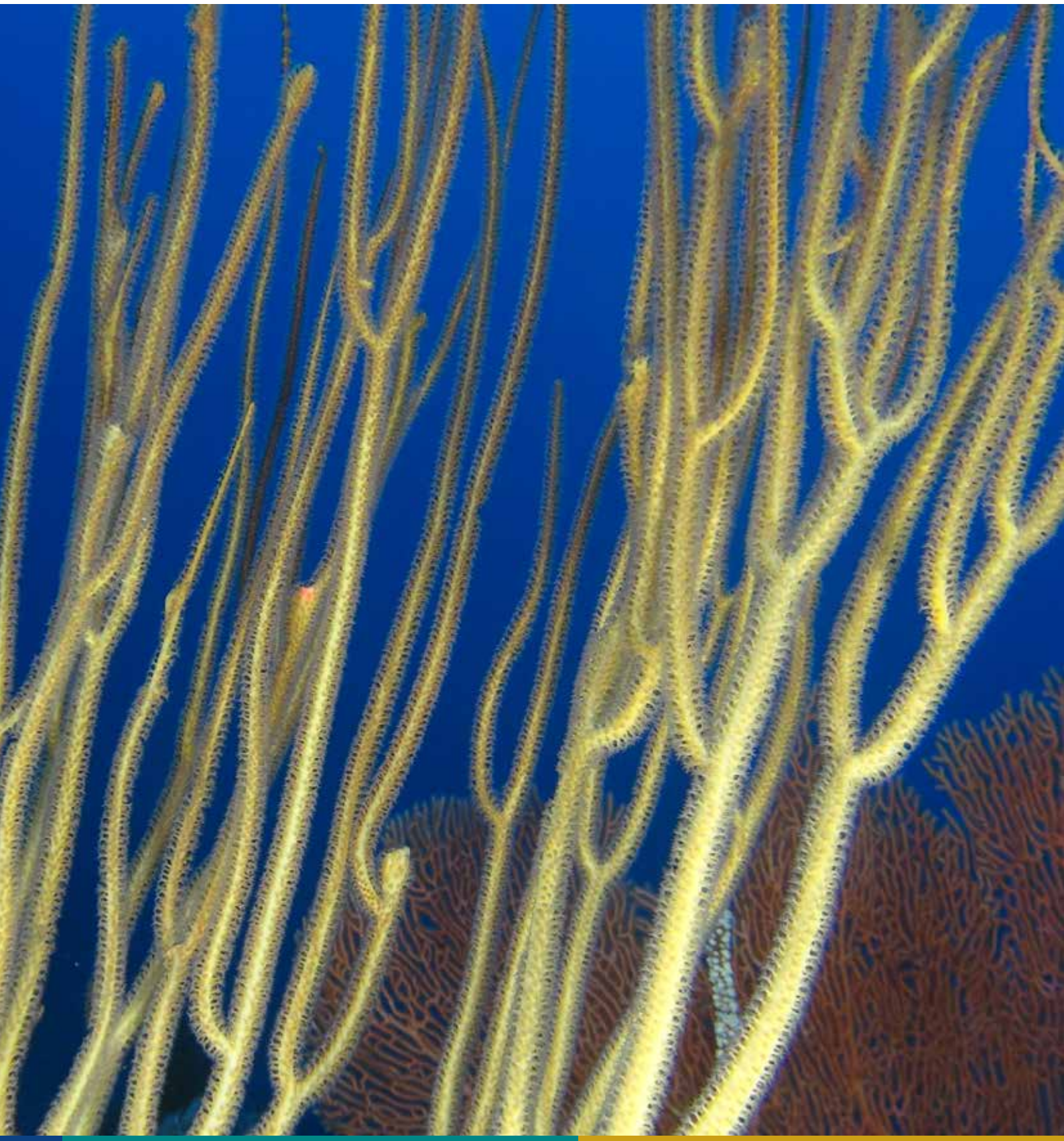
The consultant's report was presented and discussed at the 39th meeting of the WIOMSA Board of Trustees where the Board approved the network's purpose, objectives and membership (an exclusively female network). The Board also decided that the network will remain an integral and central part of WIOMSA and not operate as a standalone or independent body separate from the Association.

STRENGTHENING **SCIENTIFIC CAPACITY**

The MASMA Program and the Cities and Coasts Project activities in 2018.

From research project to proof of concept: Kenya at the center of a regional initiative of **Turtle Excluder Device trials** to support sustainable fisheries.

Huge Beautiful Sea Fans Subergorgia spp are prominent features in the 50 m to 80 m mesophotic zone at Anjuoan Island, Comoros. © Jean Harris



The MASMA Programme and the **Cities and Coasts Project**

The MASMA Programme aims to develop and improve the capacity of individuals and institutions to produce high-quality research outcomes and to monitor changes in the marine and coastal environment to enable improved ecosystem-based management and decision-making. The Cities and Coasts Project aims to build and strengthen human and institutional capacity in coastal and marine planning for sustainable coastal cities in the Western Indian Ocean region.

These two initiatives provide funding and technical support for coastal and marine research, training and communication in the Western Indian Ocean region. In this section on strengthening research capacity, we highlight the projects that were implemented under the MASMA Programme and the Cities and Coasts Project in 2018 and demonstrate how the goal of the current work programme, "generating scientific and policy-relevant knowledge for achieving sustainable development goals and facilitating implementation of the Paris Agreement in the WIO", has been translated into concrete initiatives and projects. MASMA and the Cites and Coasts Project are not only working towards Sustainable Development Goal (SDG) 14, but other related goals such as SDG 13 on climate change. They aim to address the knowledge gaps identified by global and regional processes, and specifically those that promote the achievement of the SDGs targets.

In 2018, WIOMSA awarded funding through the competitive research grants process for research (MASMA, Cities and Coasts Project and MARG) and set up monitoring programmes for ocean acidification and marine litter as part of its activities for strengthening scientific research. We outline some of these activities in this section of the Annual Report.

A. Marine Research Grant (MARG)

In 2018, 19, 7 and 21 grants were awarded under MARG I, II and III grants, respectively. These grants are meant to support research in home countries for young and upcoming scientists (MARG I), conduct data analysis or thesis write-up outside home institutions (MARG II) and provide support for travel to symposiums and conferences for the purpose of presenting findings (MARG III). More details on the grants are provided in the tables opposite.

A team of students learning the Indo-Pacific Seagrass Network research protocols for ecological survey in Zanzibar, Tanzania. © Lina Mtwana-Nordlund

MARG I

Number of approved MARG I grants for the year 2018 per country and gender (a total of 86 applications were received)

COUNTRY	FEMALE	MALE	TOTAL
Madagascar	1	2	3
Kenya	2	3	5
Tanzania	1	6	7
Mozambique	3	1	4
Grand Total	**7**	**12**	**19**

MARG II

Number of approved MARG II recipients for the year 2018 per country and gender (a total of 19 applications were received)

COUNTRY	FEMALE	MALE	TOTAL
Tanzania	2	1	3
South Africa		1	1
Madagascar	1		1
Kenya		1	1
Mauritius	1		1
Grand Total	**4**	**3**	**7**

MARG III

Number of approved MARG III recipients in the year 2018 per country and gender (a total of 36 applications were received and 21 were funded)

COUNTRY	FEMALE	MALE	TOTAL
Kenya	4	2	6
Madagascar	2		2
Mauritius	2		2
Mozambique		1	1
Portugal		1	1
South Africa	3		3
Tanzania	5	1	6
Grand Total	**16**	**5**	**21**

B. MASMA research grants

The MASMA Programme continues its tradition of supporting cutting edge research with a view to linking the knowledge that emerges from research to the management and governance issues that affect marine and coastal ecosystems in the region. In 2018, the MASMA Programme approved four projects covering a wide-range of topics, such as fish recruitment, restoration of seagrass habitats, underexploited coastal tuna species and microplastics pollution.

a. Larval fish production and dispersal in critical habitats of coastal East Africa

Lead and partner institutions: Kenya Marine and Fisheries Research Institute (Kenya); Institute of Marine Science (Tanzania); Stockholm University (Sweden)

Countries covered: Kenya and Tanzania

The project is investigating how food provisioning services, in the form of fish larvae production, are threatened by coastal habitat degradation and how production of this natural resource is related to climate change and coastal development in coastal East Africa. In addition, the project is identifying sensitive seagrass habitats that need protection and threshold values for healthy productive seagrass habitats. It will also estimate the socio-economic costs of the loss of seagrass beds to fisheries. The project is looking at the dispersal potential of fish larvae from the seagrass habitats to where adult fish spawn, and predicting future economic impacts, including the provision of scientific information that can lead to improved management and protection strategies in coastal East Africa.

b. Ecosystem-based protection of the coastal zone: the effectiveness of seagrass meadows in coastal erosion management

Lead and partner institutions: University of Dar es Salaam (Tanzania); Eduardo Mondlane University (Mozambique); Lund University (Sweden); Institute of Marine Science (Tanzania) and World Maritime University (Sweden)

Countries covered: Tanzania and Mozambique

The project is investigating how to strengthen coastal habitat resilience against coastal erosion by combining terrestrial and marine ecosystem-based protection. In addition, the project is working to identify and evaluate ecosystem services provided by seagrass meadows for humans and improved biodiversity in WIO region. The end product is to come up with best practices for seagrass restoration, with a view to providing technical guidelines on how seagrass can be restored, and inform evidence-based decision making for sustainable coastal management.

c. Enabling sustainable exploitation of the coastal tuna species (Kawakawa and Skipjack) in the Western Indian Ocean

Lead and partner institutions: Rhodes University (South Africa); Institute of Biological Environment and Rural Sciences (United Kingdom); Plymouth Marine Laboratory (United Kingdom); University of Sokoine (Tanzania); Kenya Marine and Fisheries Research Institute (Kenya); University of Dar es Salaam (Tanzania); Tanzania Fisheries Research Institute (Tanzania) and Fisheries Research Institute (Mozambique)

Countries covered: South Africa, Mozambique, Tanzania and Kenya

The project is working to describe genetic diversity, population structure and connectivity of two commercially important tuna species (Kawakawa and Skipjack) for small-scale fisheries from South Africa, Mozambique, Tanzania and Kenya. In addition, the project will relate the findings to economic benefit, biological and environmental information to inform management and the development of an artisanal tuna fishery in the region.

d. Assessment of the ecological aspects of microplastic pollution in Dar Es Salaam, Zanzibar and Mombasa coastal marine environments

Lead and partner institutions: University of Dar es salaam (Tanzania); National Museum of Denmark (Denmark); Kenya Marine and Fisheries Research Institute (Kenya); Roskilde University (Denmark); and University of Dodoma (Tanzania)

Countries covered: Tanzania and Kenya

The project is assessing microplastic pollution in the sediment, water and biota from samples collected from Dar es Salaam, Zanzibar and Mombasa coastal marine environments. In addition, the project will investigate the uptake of microplastic distribution in the tissue samples, and the final fate and effects of microplastics in representative samples of pelagic and benthic marine organisms. The overall goal is to quantify the difference in the occurrence and distribution of microplastics in various aquatic environmental matrices and examine the adsorption of chemicals from microplastics, their ingestion, trophic transfer and chemical release, and a wide array of ecotoxicological effects on invertebrates and vertebrates. A further project goal is to communicate the findings of the study to the public, relevant national and international authorities and decision-makers in the region.

Community-based monitoring training course in the south of Toliara, Madagascar. © Radonirina Lebely Botosoamanant

An aerial view of Stone Town City, Zanzibar, Tanzania. © Rahim Saggaf

C. Cities and Coasts Project Research Grants

2018 marked the first year in the implementation of the Cities and Coasts project. A good portion of this time was spent laying the foundation to realise the overall goal of the Programme. Nonetheless, significant progress has been made in the implementation of different components of the project in the ten months since inception with two research projects being approved for funding.

a. Smart and sustainable transitioning for coastal cities in the face of global environmental change, is based on prototyping transdisciplinary networks for peer-to-peer learning between cities

Lead and partner institutions: Coastal and Marine Resources Development (Kenya); eThekwini Municipality/Durban (South Africa); University of the Witwatersrand (South Africa); Macquarie University (Australia); County Government of Mombasa (Kenya); Kenya Marine and Fisheries Research Institute (Kenya) and University of KwaZulu-Natal (South Africa)

Countries covered: Kenya and South Africa

The Project aims to develop the empirical evidence underpinning the process of building capacity and prototyping smart and sustainable outcomes through the process of peer-to-peer learning between cities. Whilst this is a research project that seeks to better understand governance and implementation challenges in African coastal cities through a climate change lens, the project is built around a set of practical outcomes that complement existing activities in the two partner cities. The focal city is the County Government of Mombasa (CGM), Kenya which has developed a number of remediation projects that respond to service delivery and development-related challenges within the water and sanitation, waste and environment sectors.

b. Cities and climate change in coastal Western Indian Ocean – a grand challenge (CICLICO)

Lead and partner institutions: Nelson Mandela University (South Africa) and GERICS (Germany)

Countries covered: South Africa

The Project aims to explore and plan, with decision-makers and society in the city of Port Elizabeth, how the diverse and often uncoordinated objectives of coastal and marine planning can be implemented to enable improved adaptation to climate change in vulnerable coastal cities through the use of climate services for city planning tools. The specific research objectives of the project are to: 1) undertake participatory mapping of the coastal and marine planning systems of the Nelson Mandela Bay municipality in Algoa Bay; 2) build a system dynamics model consisting of the key causalities of managing coastal and marine space in a changing climate; and, 3) co-create climate services using system dynamic models as proof of concept. This will result in an understanding of the use of area-based management approaches, governance perspectives, environmental assets and stakeholder conflicts in light of climate change. The medium-sized coastal city of Port Elizabeth in the Nelson Mandela Bay Municipality on the shores of Algoa Bay, South Africa, will be explored as a case study for this project.

D. Monitoring programmes

In 2018, two calls to support the establishment of monitoring programmes were issued. The first was a call to support institutions to establish ocean acidification observation systems in the field, investigating biological response to ocean acidification stress using experimental set-ups in the laboratory. The second call was for institutions to undertake marine litter monitoring programmes in the Western Indian Ocean Region. For the ocean acidification call, a total of 21 proposals were submitted, six of which were approved for funding. For for the marine litter monitoring call, six proposals were approved out of 16 submitted.

A sustainable city calls for – among other things – controlled livelihood activities, routine infrastructure maintenance and responsible residents. Cows scavenging through litter thrown on a roadside, Changamwe, Kenya. © Obed Matundura

Plastic waste on Ushaka beach. In the background is the City of Durban, the Moses Mabhida stadium and the Vetches reef, Durban, South Africa. © Aadila Omarjee

Ocean acidification

The approved ocean acidification monitoring projects from six countries are:

i) Strengthening of the national capacity for monitoring ocean carbon chemistry and its impacts on coastal ecosystems and human livelihoods (Kenya Marine and Fisheries Research Institute)

ii) Oceanic carbonate chemistry observatory in Mauritius waters (Mauritius Oceanography Institute & University of Mauritius)

iii) Ocean acidification initiative in Mozambique (Eduardo Mondlane University)

iv) Establishment of ocean acidification observation (University of Seychelles)

v) Ocean acidification observation and experiments in South Africa (Oceanographic Research Institute)

vi) Ocean acidification observation in Tanzanian coastal waters (Tanzania Fisheries Research Institute)

Marine Litter

For the marine litter monitoring projects, six proposals were approved and are:

i) Marine litter dynamics and monitoring in the coastal waters of Mombasa city, Kenya: an input to source reduction and place-based management initiatives (Kenya Marine and Fisheries Research Institute)

ii) Characterizing and assessing marine litter sources from the Madagascar coastline in the south-west Indian ocean (CETAMADA)

iii) Marine litter monitoring in Mauritius, Rodrigues and outer islands (University of Mauritius)

iv) Awareness and monitoring of marine litter in Mozambique (Universidade Lúrio)

v) Managing the threat of marine plastic pollution in Seychelles (The Ocean Project Seychelles & The Seychelles Islands Foundation)

vi) Marine litter monitoring programme in Dar es Salaam (Nipe Fagio)

Turtle Excluder Device Trials

From research project to proof of concept: Kenya at the center of a regional initiative of Turtle Excluder Device trials to support sustainable fisheries

Adapted from an article by Nina Wambiji

The ByCAM project which was supported by WIOMSA through a MASMA research grant entered its final phase in 2018 by testing a turtle excluder device in Kenya in April to May 2018. The BYCAM project was aimed at promoting the reduction of undesired catch in fisheries by assessing and testing innovative technologies in the fisheries of the region.

The Kenya Marine Fisheries Research Institute partnered with the local shrimp fishing industry (ITTICA Limited and ALPHA Limited) to evaluate the Turtle Excluder Device (TED) as an additional component of its trawl nets with the objective of avoiding the accidental catch of turtles and other large species, mainly sharks and rays. Preparations of the trawls and the trials were conducted between 7 April and 3 May 2018.

An example of a trawl catch that uses a TED to reduces the catch of rays; and a trawl catch made without the use of a TED, with some rays in the catch. © Michel Nalovic

Mr Rashid Anam (KMFRI and vessel crew) with the new TED mounted on the trawl net. © Michel Nalovic

For the project, Michel Nalovic, a shrimp trawl fishing gear expert from French Guiana, was hired to build the TEDS – the aluminum grids that were to be inserted and tested in the trawls of the fishing vessel, Roberto. The F/V Roberto was availed by Mr Basta Alessandro, proprietor of ITTICA Limited. In his statement during the closing meeting, Mr Basta said that

"Anything we can do to help the administration to achieve their sustainable development objectives is a plus for us, and we don't eat the turtles, so it's good by me if we can get gear that works on turtles without reducing production".

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

Dr Edward Kimani, the Assistant Director in charge of marine fisheries research at KMFRI who is responsible for the Kenya TED project, said that the benefits were designed to be multi-faceted. "Kenya now has gained expertise to build our own quality TEDs locally, and it has been demonstrated that TEDs can be used without any loss of target catch, while at the same time training one of our researchers, Mr Rashid Anam to conduct experiments of this type at sea. The reduction of large sharks and rays potentially improves fishing efficiency, by reducing the weight in the trawl net as well as the sorting time on deck.

KMFRI has also reinforced its link with industry on a project that could be beneficial to more countries than Kenya in the WIO region. Indeed, the global market landscape is changing, with consumers increasingly leaning towards sustainable products. The EU TED report available at www.rapporttedeu.com shows that the EU may soon be moving towards an import ban on tropical shrimp not captured with TEDs, as the US did 30 or so years ago. With this project our industry stays on the cutting edge of developing its blue economy and could be a model in the region."

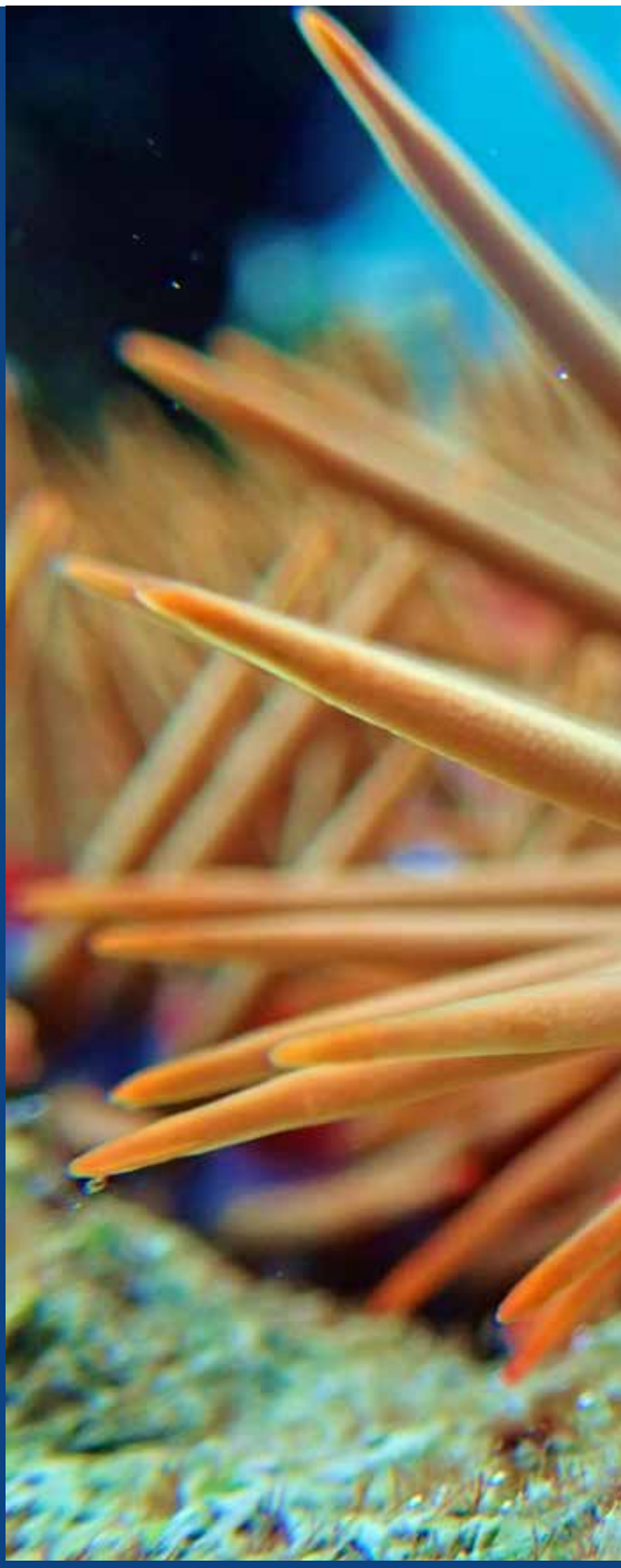
SCIENCE TO POLICY INTERACTIONS

Influencing policy and practice. WIOMSA continues to work at the intersection of **science and policy to ensure that science is integrated into regional policy development** and that relevant policies consider both scientific knowledge and the needs of science.

One of the more important activities undertaken in 2018 **was the operationalization of the Science to Policy Platform** during the 9th Conference of the Parties to the Nairobi Convention.

Since 2017, WIOMSA in conjunction with the Nairobi Convention has conducted a series of workshops on **Senior Leadership Proficiency Renewal in the management of coastal and marine resources** in the Western Indian Ocean.

WIOMSA working with the Nairobi Convention, governments started working on the four **Sustainable Development Goal 14 targets to set up baselines upon which strategies to address challenges** could be developed and progress could be tracked over time.



Every rose has its thorns: the coral-eating, venomous sea star Acahtnaster planci. © Frédéric Ducarme.

Influencing policy and practice

Advancing science to policy action is at the heart of WIOMSA's mission. WIOMSA continues to work at the intersection of science and policy to ensure that science is integrated into regional policy development and that relevant policies consider both scientific knowledge and the needs of science. Further, the overall goal of the MASMA Programme for the period 2018 to 2022 is **to establish and operationalize a regional science to policy platform by 2022 that generates knowledge, builds capacity, mobilizes resources, and shares scientific and policy-relevant knowledge to assist the WIO region to deliver on the 2030 Agenda for oceans, islands and coasts, and climate change.** For the purpose of achieving these twin objectives, WIOMSA in conjunction with various partners, is involved in initiatives geared towards influencing policymakers for the increased protection and maintenance of critical marine habitats in the face of national development initiatives. Some of WIOMSA's efforts in this area in 2018 are highlighted in this section of the report.

Initiating the Science to Policy Platform of the Nairobi Convention

One of the more important activities undertaken in 2018 was the operationalization of the Science to Policy Platform during the 9th Conference of the Parties to the Nairobi Convention (COP 9) held in Mombasa, Kenya in August 2018. WIOMSA played a crucial role in the organization of the Science to Policy Forum – which preceded the COP – and in COP 9 itself.

The Science to Policy forum meeting informs the decisions of the COP 9

In preparation for COP 9, the Nairobi Convention, the Indian Ocean Commission and WIOMSA jointly hosted a Science to Policy Forum meeting in Durban, South Africa in July 2018. The objectives of the meeting were to discuss the role of the Forum for Academic and Research Institutions (FARI, for which WIOMSA is the Secretariat) in the Science to Policy Platform of the Nairobi Convention; to discuss the policy-relevant scientific themes aligned to both WIOMSA and the Nairobi Convention priorities; and the relevant work programmes. The workshop also discussed proposed policy decisions to be taken to COP 9. WIOMSA played a crucial role in facilitating and preparing background documents to support key COP 9 decisions. **Some of the decisions proposed by WIOMSA and partners that were adopted during COP 9 include:**

- **A decision on the management of marine litter and municipal wastewater** in the Western Indian Ocean which calls on the Nairobi Convention and partners to develop a regional strategy or action plan or both on the management of marine litter and microplastics and the establishment of a marine litter regional technical working group in the Western Indian Ocean region, and to develop capacity building programmes on marine litter and microplastics, including microbeads, for a

harmonized approach to data generation, monitoring and reporting.

- **A decision on climate change adaptation** which requests parties to undertake climate change vulnerability assessments of their urban coastal areas, including urban spatial planning processes; and which urges countries to address the impact of ocean acidification including through capacity development and enhancement of scientific cooperation in partnership with research and academic institutions.
- **A decision on the development of the Critical Habitats and Marine Protected Areas** outlook. WIOMSA is responsible for the technical coordination of the production process.
- **A decision on science to policy** dialogue which calls for enhanced support for the science policy platform, including FARI.

Wings to fly: Science to Policy Platform takes off at COP 9

Since 2001, the Contracting Parties to the Nairobi Convention have expressed the need for the establishment of a science to policy platform to facilitate dialogue between policymakers and scientists.

This vision was realized at COP 9, in August 2018. In the lead up to the event, WIOMSA in collaboration with the Nairobi Convention, invited members of the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C) and FARI to submit a list of emerging issues of regional and/or global importance

Sardine fever, KwazuluNatal, South Africa.
© Sumaiya Arabi

to be tabled at COP 9, as decisions or information points. Several institutions responded to the request, leading to a review and development of discussion papers that were discussed at the Science Policy Forum in Durban highlighted above, and ultimately presented as policy recommendations for consideration by the Contracting Parties at COP 9.

This process, implemented under the umbrella of the Science to Policy Platform, resulted in a most meaningful impact because at least 60 percent of the decisions adopted in the COP 9 came through the platform. This is a leap forward in the process of having policy decision-making backed by sound scientific evidence and WIOMSA is very proud to be associated with the Science to Policy Platform!

Decisions sponsored or facilitated by WIOMSA included:

- **Decision CP.9/3. Management of marine litter and municipal wastewater in the Western Indian Ocean**
- **Decision CP.9/9. Climate change adaptation and mitigation**
- **Decision CP.9/10: Marine spatial planning for the blue and ocean economy – Article 3**
- **Decision CP.9/11: Development of Critical Areas and Marine Protected Areas outlook**
- **Decision CP.9/12. Science to policy dialogue**
- **Decision CP.9/13. Enhancing cooperation, collaboration and support with partners – Articles 8 and 10.**

Renewal of **policymakers' leadership skills**

Since 2017, WIOMSA in conjunction with the Nairobi Convention has conducted a series of workshops on Senior Leadership Proficiency Renewal in the management of coastal and marine resources in the Western Indian Ocean. The first two workshops were held in Kenya and Tanzania respectively, with the third one being hosted by the Ministry of Environment in Mahe, Seychelles in April 2018. In all, 17 senior government officials, including permanent secretaries, directors and assistant directors from relevant ministries and parastatals in Seychelles, Tanzania, Madagascar and Kenya, were involved in the Seychelles workshop. The workshop series targets senior leaders who are tasked with policy decision-making, those who have the responsibility of managing environmental resources and those who can significantly influence decision-making within their respective nations. The aim is to equip the participants with the skills necessary for informed decision-making that is critical in the management of oceans. It is also expected that the support will lead to the development of appropriate capacity required to effectively implement the various components of regional projects such as the implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIO SAP) Project and increase the capacity of stakeholders in Western Indian Ocean region to effectively manage and control the impacts of land-based activities on the coastal and marine environment. About 70 government officials from the Western Indian Ocean region have been trained since the inception of these workshops.

An aerial view of mangroves: the coastal lifeline of the Quirimbas National Park, northern Mozambique. © Romy Chevalier

Assisting Countries to set up baselines for the sustainable development goals targets

In 2018, WIOMSA working with the Nairobi Convention, governments of the region and national / regional / international partners, started working on the four Sustainable Development Goal 14 targets with the aim of assisting the countries of the region to set up baselines upon which strategies to address challenges could be developed and progress could be tracked over time.

Through this work, countries are assisted in securing information that could be used in their reporting on national, regional and international obligations in relation to these targets.

For **target 14.1** *(by 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution),* with the technical support of the African Marine Waste Network, is supporting the undertaking of marine litter in six countries namely, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania. The objectives of this programme are to identify and quantify litter sources and hotspots on land, track and monitor plastic litter as it is transported from source to sea – including quantification and identification of litter in coastal areas and to quantify and monitor changes to macro-, meso-, or micro- litter and plastics.

With the technical support of the IOC of UNESCO, WIOMSA is also working on **target 14.3** (*minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels*) through its support to six countries which are either establishing ocean acidification observation systems in the field, investigating biological response to ocean acidification stress using experimental set-ups in the laboratory, or a combination of both. The countries are Kenya, Mauritius, Mozambique, Seychelles, South Africa and Tanzania.

Further, WIOMSA in collaboration with the Nairobi Convention worked on **targets 14.2** (*by 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans*) and **14.5** (*by 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information*) by developing several products, including a regional outlook on the status and baseline of marine protected areas in the WIO region, a second outlook on critical habitats in the WIO, and a third outlook of policy recommendations.

The purpose of the three outlooks is to give governments of the Western Indian Ocean region options for achieving a quantitative, qualitative and representative 10 percent MPA coverage by 2020.

The MPA Outlook has provided a baseline on the protection status at country and regional level; the percentage coverage that is under (and proposed for) formal protection; the approaches to conservation; the gaps in current protective coverage (geographical/habitat); locally managed marine areas and other non-formal protections; and a management effectiveness snapshot.

In addition to the regular peer review process, WIOMSA and the Nairobi Convention have included a national validation process to the production of all the outlooks to ensure that they are not only accurate, credible and relevant but also fit for the purpose of informing policy recommendations. The purpose of the Critical Habitats outlook is to establish baselines on the extent and location of critical marine habitats across the region, assess the extent of protection of these habitats, identify the habitats most in need of increased protection, where this protection would be most effective in terms of conservation of the habitat and the species they support, and define and develop an assessment and monitoring framework using relevant indicators to track progress. Part of the outlook development process is to establish a repository of MPA and critical habitat information in the form of a database. Both the MPA and the Critical Habitat outlooks also provide an assessment of the potential impact of large-scale developments on MPAs and critical habitats. A dashboard will also be developed that will enable the countries to monitor progress. Considerable progress has been made in the development of the Critical Habitats outlook.

First record of coral spawning in the barrier reef of Toliara, Madagascar. © Radonirina Lebely

CAPACITY DEVELOPMENT

WIOMSA develops practical **capacity building programmes that transform how people perform their core functions** – from what they do today to what they can do differently tomorrow.

11 new Marine Protected Area Professionals (MPA PROs) have been added to the growing ranks of certified MPA PROs in the Western Indian Ocean region.

Growing the next generation of fishermen. A young father crafting the first pirogue for his son in south - west Madagascar.
© Mattia Ghilardi

Building capacity for **coastal** and **ocean governance**

The broad goal of WIOMSA's capacity building programme is to increase the capacity of institutions and individuals to manage and undertake inclusive decision making and to cope and adapt to changing circumstances, including the eradication of gender bias in the marine sector. WIOMSA believes that the best way to unlock the potential of the individuals it works with is through the power of targeted capacity building. The Association has taken a broad perspective on capacity development as a process by which individuals and organizations improve their ability to perform their core functions. WIOMSA and its partners have been at the forefront of initiating and pioneering innovative capacity building programmes, which go a long way towards improving the individual capacity of professionals and consequently the management effectiveness of their organizations. That is why, working with various partners, WIOMSA develops practical capacity building programmes that transform how people perform their core functions – from what they do today to what they can do differently tomorrow. One such programme is the Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) whose 10th anniversary story is captured in this section of the Annual Report.

In 2018, over 200 individuals from all the countries in the WIO region (with the exception of Somalia) benefited from different capacity development activities implemented by WIOMSA and its partners. These included students who benefitted from Marine Research Grants (MARG) and different capacity development events that WIOMSA supported or co-organized in collaboration with partners. Table 1 below summarizes the Association's capacity development efforts in 2018.

CAPACITY DEVELOPMENT EVENTS	NUMBER OF PARTICIPANTS	FEMALE	MALE
Renewal workshop for senior leaders on the management of coastal resources (participants from Seychelles, Kenya, Madagascar, Tanzania)	17	5	12
Introduction to R Programming	21	10	11
WIO-COMPAS Certification Level 1 for field rangers	10	2	8
WIO-COMPAS Certification Level 2 for MPA managers	2	1	1
Marine Spatial Planning training for French speaking countries – Mauritius (organized with the IOC of UNESCO and the Nairobi Convention)	40		
Marine Spatial Planning training for Anglophone countries – Kenya (organized with the Nairobi Convention and the IOC of UNESCO	32		
Marine organisms' response to climate change: adaptation or extinction (in collaboration with Lund University)	31	14	17
Support to attend the Blue Economy Conference	8	1	7
Capacity building for impact for the Cities and Coasts project	16	5	11

New MPA PROs added to WIO-COMPAS ranks in 2018

The Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) held a combined Level 1 (L 109) and Level 2 (L 208) certification assessment event in Mombasa in September 2018 and as a result 11 new Marine Protected Area Professionals (MPA PROs) have been added to the growing ranks of certified MPA PROs in the Western Indian Ocean region! Mwachanze Mohamed, Mohamed Namuna, Abdalla Godana, Beatrice Jerop and Brenda Koech from KWS; Ewald Van Wyk from CapeNature (South Africa); and Henvik Visser, Ralph Kelly and Warren Sables from SANParks were certified as MPA PRO Level 1, while Magreth Mchome from the Marine Parks and Reserves Unit in Tanzania was certified as MPA PRO Level 2.

According to Lawrence Sisitka, the head assessor and moderator of the WIO-COMPAS programme, the combined event represented both the ever-evolving nature of the WIO-COMPAS programme and its profound continuity. This is only the second full event to include both Level 1 and Level 2 candidates. In addition, Level 2 MPA PROs Said Shee Mohamed from Kenya and Edward Richards from South Africa, joined the event as part of their journey to becoming WIO-COMPAS assessors. The programme's profound continuity was illustrated by the fact that two of the assessors, Arthur Tuda and Peter Chadwick, were successful candidates in the very first certification event (L 201) held in Malindi 10 years ago. They subsequently became Level 3 WIO PROs in 2012, together with a third person involved in the Mombasa certifications, Anè Oosthuizen.

The future of WIO-COMPAS can also be seen in the bright, committed young MPA personnel who participated in the event, most for the first time, and undoubtedly some of these will go on to become senior WIO PROs, and perhaps even assessors. MPA management authorities in the WIO are certainly doing their bit to ensure the sustainability of WIO-COMPAS by encouraging their staff to apply for certification. This was particularly evident in the Mombasa event where the KWS Assistant Director for Coast Conservation Area, Mohammed Kheri, led a 20-person team of KWS personnel to observe the first day of the certification with a view to having them understand the process as potential candidates in future. A record number of South Africans applied for the L 108 certification, another indication of the faith that SANParks and CapeNature have placed in the WIO-COMPAS programme for improving the effectiveness of MPA management.

With 10 years of experience under its belt, WIO-COMPAS is looking forward to an exciting future. Visit the WIO-COMPAS website www.wio-compas.org for more information on upcoming events.

WIO-COMPAS Assessment: marine ranger interaction with fishermen in Mombasa Marine Park. © Peter Chadwick

PARTNERSHIPS

Partnerships, collaboration and network building were some of the defining features of WIOMSA's foundation and remain an important pillar of the Association today, 25 years on.

The year 2018 was an important one for the **Women in Marine Science Network (WiMS).** WiMS was formally launched in 2017 during the 10th WIOMSA Scientific Symposium in Dar Es Salaam, Tanzania and interest in the network has been high from the very start.

SWIOFish fisheries research inception meeting. The objective of this partnership is to contribute a broader regional / international perspective, experience and expertise and ensure high quality research outputs.

Children play with sailing boats made out of old thongs in Jambiani, Zanzibar. © Nuri Steinmann

Partnerships and network building

Partnerships, collaboration and network building were some of the defining features of WIOMSA's foundation and remain an important pillar of the Association today, 25 years on. It is only through working with partners that WIOMSA has been able to deliver on its wide-ranging objectives. The Association has over the years hosted, and continues to facilitate, several networks such as the Forum of Heads of Academic and Research Institutions (FARI), the Group of Experts on Marine Protected Areas (GEMPA) and the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C). WIOMSA has built a reputation as a trusted partner as a result of its efforts to deliberately incorporate national, institutional and individual members into its activities.

In 2018, WIOMSA made significant progress in partnership building. For the MASMA Programme, three new partnerships were created: one with the IOC of UNESCO for research on ocean acidification, a second with the African Marine Waste Network for the monitoring of marine litter, and a third with the German–Africa Partnership Programme of BMZ for work in the science to policy space. Further, through the activities related to the operationalization of the Science to Policy Platform and production of the Critical Habitats and Marine Protected Areas Outlooks, the partnership with the Nairobi Convention continues to be strengthened. In the Cities and Coasts Project, WIOMSA fostered three strategic partnerships with UN-Habitat, the Nairobi Convention on urban spatial planning and the GEF/UNEP-funded project on "Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIO-SAP)". This project focuses on marine litter and municipal wastewater, among other things. These partnerships resulted in several positive decisions in the 9th Conference of Parties of the Nairobi Convention.

In November 2018, WIOMSA participated in the First Global Monitoring for the Environment and Security and Africa (GMES & Africa) Forum in Gabon. The GMES & Africa Support Programme, a crystallization of the long-standing cooperation between Africa and Europe in space science and technology, is a € 30 million joint programme co-financed by the European Commission and the African Union Commission.

The GMES & Africa Programme is being implemented through 10 different Regional Implementation Centres (projects) covering all the regions of Africa, and includes both terrestrial- and marine and coastal-focused projects. These projects will run for three years from mid-2018 to mid-2021. WIOMSA is part of the consortia that are implementing two of these projects in eastern and southern Africa: 1. Marine and Coastal Service Development for Southern Africa, led by the Council for Scientific and Industrial Research in South Africa; and 2. Marine and Coastal Management in the East Africa Region, led by the Mauritius Oceanography Institute. WIOMSA is mainly responsible for the user-engagement and capacity building aspects embedded in these two initiatives. Co-design of relevant marine and coastal earth observation services with end-users is central to the approach to be taken in implementation, and WIOMSA will play an important role in facilitating collaboration between end-users and technical experts.

Perhaps the best example of WIOMSA's efforts to build partnerships and host networks in 2018 was the operationalization of the Network of Women in Marine Science (WiMS, an important and integral part of WIOMSA because the network's membership could potentially be half of WIOMSA's constituents!

WiMS was launched to address the gender equality issues facing women marine scientists in the Western Indian Ocean region. WIOMSA believes that improved networking amongst women is critical to address these issues.

This section of the report outlines WiMS activities in its first year. Also discussed is a partnership with the South West Indian Ocean Fisheries (SWIO-Fish) for technical backstopping with respect to priority marine fisheries in Tanzania, and WIOMSA's activities in the Blue Economy Conference in Nairobi.

Women carrying loads of fish, Matemwe, Zanzibar. © Rahim Saggaf

Women in Marine Science Network

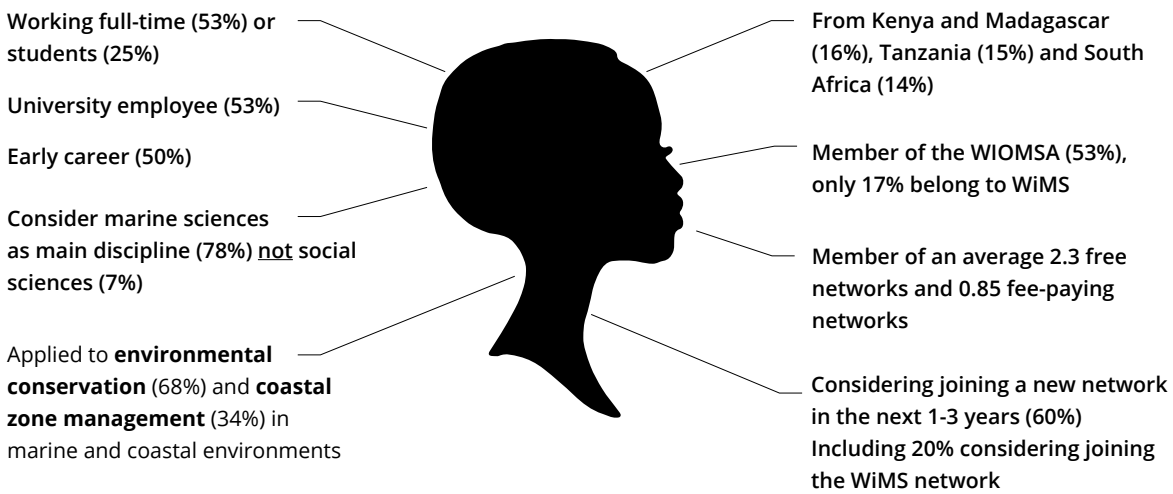
The year 2018 was an important one for the Women in Marine Science Network (WiMS). WiMS was formally launched in 2017 during the 10th WIOMSA Scientific Symposium in Dar Es Salaam, Tanzania and interest in the network has been high from the very start.

In 2018, several measures were taken to make the network operational, starting with an assessment of needs and the development of Terms of Reference (TOR). WiMS finished off the year with a meeting in Nairobi, Kenya, where around 20 women marine scientists were invited to discuss the future of WiMS. During this meeting, the TOR were approved and the first Steering Committee of WiMS was elected.

Assessment of needs and development of Terms of Reference.

In 2018, WIOMSA commissioned a consultant to help make WiMS operational. The consultant assessed needs for women in the network and developed its TOR. The assessment was conducted through an online questionnaire that targeted women in marine science. The survey, which was distributed via the WIOMSA website and social media platforms, got a good response from 325 women.

1.1 Profile of women marine scientists in WIO region (who responded)



From the survey, it was clear that the majority of respondents wanted a network for women only that would be open to all disciplines within the field of marine science. They also wanted the network to cover the entire Western Indian Ocean region and to be connected to WIOMSA.

When asked what personal benefits they anticipated they would gain from WiMS membership, the respondents' answers ranged from sharing and gaining ideas, to supporting other women, increased interactions with like-minded scientists and a forum where women scientists can connect. To the question on the professional benefits they might enjoy as a result of WiMS membership, respondents mentioned opportunities for creating valuable contacts, staying up-to-date with research developments in the Western Indian Ocean, identifying collaborators, setting up a platform to discuss issues of common interest, and helping to attract and retain female talent in marine sciences.

The WIOMSA Board of Trustees met in October 2018 to discuss the survey results and provide input on the structure and future of WiMS.

A key Board decision from the Board was that the network would remain an integral and central part of WIOMSA and not operate as a standalone or independent body, separate from the Association.

Meeting in Nairobi December 2018

WIOMSA invited selected female members of the WIOMSA community to a meeting in Nairobi in December 2018 to discuss the results from the questionnaire and to discuss and approve the TOR of WiMS. The meeting was attended by women from different countries in the Western Indian Ocean region, as well as women from diverse scientific backgrounds.

Results from the workshop:

- ***Approved TORs including:***
  - **Membership** – the network will be open to women marine scientists from any country in the world. All members of WiMS must first be members of WIOMSA. Membership of WiMS comes at no additional cost.
  - **Organizational structure** – the network is to be led by a Steering Committee elected by the members of WiMS. The Steering Committee will be elected for a period of three years. WiMS will continue to be a part of WIOMSA. The Steering Committee shall have a chairperson, a vice chair, an executive member, a representative from the WIOMSA Board, a network coordinator from WIOMSA and one country representative from each of the countries in the Western Indian Ocean.
  - **Roles and responsibilities** of members in the Steering Committee.
  - **Network activities** – short term, medium-term and long-term plan for the network activities. Network activities include: professional development and research enhancement, collaboration and advertising platform and advocacy.
- ***Elected Steering Committee.***
- ***Elected Chair of the Steering Committee.***
- ***Monitoring and evaluation.***

The Steering Committee of WiMS

Veronica Bristol, *Chair and Country Representative Seychelles*

Rebecca Loustau-Lalanne, *WIOMSA Board Representative*

Emma Forsberg, *Network Coordinator (WIOMSA)*

Meaghen McCord, *Vice Chair and Country Representative South Africa*

Yvonne Waweru, *Executive Member and Country Representative Kenya*

Volanirina Ramahery, *Country Representative Madagascar*

Nashreen Soogun, *Country Representative Mauritius*

Rosemarie Mwaipopo, *Country Representative Tanzania (mainland)*

Esmeralda Mariano, *Country Representative Mozambique*

The way forward

WiMS is moving into 2019 with plenty of ideas and with vision for the future. After the meeting, WiMS created accounts on different social media platforms, including Facebook, Twitter and Instagram. Work on a dedicated website for WiMS also started, with the launch of the website planned for the first quarter of 2019. One of the first tasks for the newly elected Steering Committee will be to plan WiMS activities during the 11th WIOMSA Scientific Symposium in Mauritius in 2019.

Huge beautiful Sea Fans Subergorgia sp Anjuoan Island, Comoros. © Jean Harris

SWIOFish fisheries research inception meeting

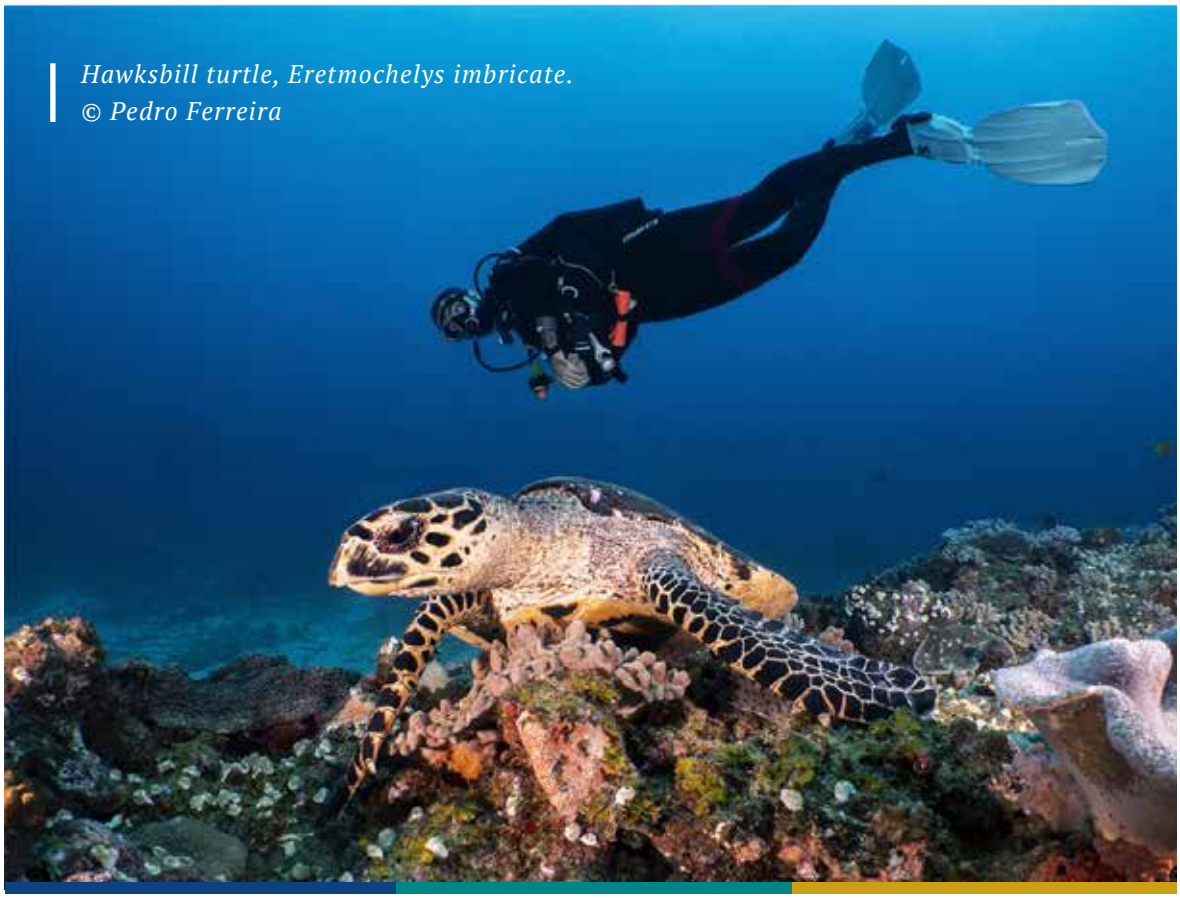
WIOMSA has been contracted to provide technical backstopping over a two to three-year period, to the SWIOFish Tanzania Project Research Committee (PRC) in respect of research activities conducted under the project into priority marine fisheries (small pelagics, octopus, prawns, tuna and tuna-like fishes, reef fishes).

The objective of the partnership is to contribute a broader regional / international perspective, experience and expertise and ensure high quality research outputs.

This assignment forms part of SWIOFish **Component 2. Improved governance of priority fisheries**, *Sub-component 2.1. Knowledge and management of priority fisheries*, Sub-section 2.1.2. Strengthening research to determine stock status and factors affecting status.

The research activities relate to the inshore waters and territorial seas of Mainland Tanzania and Zanzibar, but not deep-sea fisheries in the exclusive economic zone beyond the territorial waters, under two of the implementing agencies: the Ministry of Livestock & Fisheries, Mainland; and the Ministry of Livestock & Fisheries, Zanzibar.

Our daily catch. A boat carrying a large load of fish at the end of a day of fishing, Angoche, Quirimbas National Park, Mozambique. © Mário Ngonga



Hawksbill turtle, Eretmochelys imbricate.
© Pedro Ferreira

The Terms of Reference (TOR) for the assignment initially cover a period of 18 months (November 2017 to April 2019) as Phase 1, and require that the consultant provides technical research backstopping to the PRC upon request, in the following areas:

(a) preparation and periodic review of the SWIOFish integrated research plan prepared by the PRC; (b) preparation and/or review of TORs for SWIOFish-funded research activities; (c) review and editing and strengthening, when warranted, of research proposals prepared by research institutions or researchers, in response to the above ToRs, particularly in regard to methodology selection and planning; and (d) quality-control (i.e. reviewing and commenting on) of the draft research outputs that come out of each research initiative linked to the SWIOFish Project. It is envisaged that Phase 2 of the assignment will run over a 12 month period from May 2019 to April 2020 and be the subject of a second backstopping contract.

In order to carry out this assignment WIOMSA has recruited a team of regional and international fisheries experts to provide the highly specialized skills needed to provide input to the research programme. The pool of experts will provide both a quality control function as well as a capacity building function. An inception meeting for the assignment was hosted by the Ministry of Livestock and Fisheries (Mainland) in Dar es Salaam in February 2018. The aim of the meeting was for the PRC, project teams and fisheries experts to work together to finalize fisheries research proposals and plan projects so that they provide robust management advice upon their completion. Good progress was made at the meeting and a detailed workplan was agreed to for the next steps of the SWIOFish research process.

REGIONAL ENGAGEMENTS: **SPECIAL PROGRAMMES AND EVENTS**

WIOMSA's work is guided by over two decades of experience and the firm belief that it goes further in reaching its objectives when it finds synergies and works shoulder to shoulder with partners towards a common goal. ***Over the past year, WIOMSA was part of three of significant events which are highlighted in this section of the 2018 Annual report.***

The WIO-COMPAS program, the first programme of its kind in the world to certify marine protected area (MPA) professionals, celebrated its 10th anniversary! WIOMSA is extremely proud of the work done and the achievements earned over the last 10 years and of the value that WIO-COMPAS brings in its efforts to improve the management effectiveness of MPAs and enhance the capacity of MPA professionals by equipping them with the right competencies. This important milestone has been achieved thanks to strategic partnerships with individual MPAs and MPA management authorities.

WIOMSA participated in **the Sustainable Blue Economy Conference** that was held in Nairobi, Kenya in November 2018. The organization is proud to be associated with the first global conference on the sustainable blue economy that brought together nearly 20 000 participants from around the world. The conference debated how to build a blue economy that harnesses the potential of the oceans, seas, lakes and rivers to improve the lives of all, particularly people in developing states, women, youth and indigenous peoples, and leverages the latest innovations, scientific advances and best practices to build prosperity while conserving the ocean for future generations. WIOMSA partnered with regional and UN organizations in organizing events during the conference.

The work to implement the Climate Change Strategy of the Western Indian Ocean continues within the **MASMA Programme and the Cities and Coasts Project**. WIOMSA partnered with the University of Lund to organize a workshop on climate change in September 2018.

Crane taking flight off a buoy in the Port of Durban. In the background are the central sandbanks which form an important habitat for the birds in the port. © Aadila Omarjee


M-2

A decade of certifying MPA professionals: **WIO-COMPAS celebrates its 10th Anniversary**

The year 2018 was truly a landmark year for WIO-COMPAS which celebrated its 10th anniversary. Celebrating a 10-year anniversary as **a programme that is solely dedicated to the support and professional development of marine protected area (MPA) rangers and managers** is no mean feat. Such initiatives end up petering out slowly due to a lack of demand and financial support. However, the WIO-COMPAS programme has not only gone the distance since the first certification event in 2008, but is also thriving because it has established a niche that sets it apart from the usual emphasis of capacity development through certificate-based training courses. WIO-COMPAS takes a competence-based approach to individual and organizational capacity development to address the problem of ineffective MPA management in the Western Indian Ocean region, principally for the conservation agencies mandated with this task.

For the programme, these past 10 years have been rewarding! To date, WIO-COMPAS has certified 95 MPA personnel in eight countries and has been integrated into the human resources management activities of two agencies: Kenya Wildlife Service (KWS) in Kenya and CapeNature in South Africa. WIO-COMPAS has been endorsed by the IUCN World Commission on Protected Areas, the Game Rangers Association and WWF South Africa. Further, it is accepted as a blue solution by the Blue Solutions Initiative for building capacity for the sustainable management of the Blue Planet and has been included in the IUCN Certification Guidebook.

Since the first certification assessment event held in Malindi, Kenya in August 2008, 17 certification offerings have been organized in the region: one Level 3 certification event for conservation directors, nine Level 1 certification events for marine field operators and eight Level 2 certification events for site managers. Since the inception of WIO-COMPAS, the programme has systematically sought to increase the pool of assessors in the region, based on the programme demands. Selected assessors – who have on the ground operational experience and knowledge of the local and regional context of MPA management – go through a rigorous training process that includes training on the theory of assessment. They also get on the job training by attending assessment events as observer learner assessors, prior to their taking on full event assessment responsibilities under the mentorship of an experienced assessor. The programme has 13 assessors and seven learner assessors.

To commemorate the 10th Anniversary, WIOMSA President Dr Jacqueline Uku, presided over an awards ceremony to celebrate the heroes and champions of the WIO-COMPAS programme. The cocktail event was held in Mombasa in September 2018. During the event, **certificates of appreciation were given to individuals who have been instrumental in the inception, development and promotion of the WIO-COMPAS programme.** The awardees include Lawrence Sisitka (Rhodes University), Peter Chadwick (conservationist and conservation photographer), Anè Oosthuizen (SANParks),

Arthur Tuda (KWS), Glenn Ricci (Coastal Resources Centre, University of Rhode Island) and Nirmal Shah (Nature Seychelles).

Having achieved the 10-year milestone, WIO-COMPAS intends to hold a strategic review and planning meeting in 2019 to discuss the achievements, challenges, opportunities and future direction for the programme, particularly the issues of developing a community of practice for certified MPA professionals and the renewal of certification.

Another day at the office: two divers assess the health of coral reefs in Kisite Marine Park. © Ewout Knoester

WIOMSA at the **Blue Economy Conference**

A Sustainable Blue Economy Conference was held in Nairobi in November 2018 and WIOMSA actively participated in the conference through the co-organization of a session and a side event. WIOMSA also supported the participation of eight conference participants and delivered a number of presentations at the same time.

The IOC of UNESCO, in collaboration with the Federal Ministry for Economic Cooperation and Development of Germany, Government Offices of Sweden and WIOMSA co-organized a session titled **"Towards a knowledge-based sustainable ocean economy: the contribution of ocean science, observation and marine technologies towards sustainable Blue Economy"**.

The aim of the session was to showcase experiences and best practices to implement a knowledge-based blue economy approach, as well as focus on data needs and research priorities to support blue innovations and a sustainable blue economy.

Kenya Marine and Fisheries Research Institute teamed up with WIOMSA, the Institute of Research for Development, WWF-Germany, Wetlands International, IUCN, and the Irish Embassy in Nairobi to organize a side event on "Harnessing full potential of blue economy through research and

Girls drying octopus in an open market at Ibo Island, Cabo Delgado province, northern Mozambique © photo. Carlos Litulo

innovation". The objectives of the side event were to (a) review the state of aquatic research and its contribution to the Kenyan development agenda; (b) identify opportunities for blue economy investment in Kenya, especially those related to fisheries and aquaculture; (c) enhance public understanding of the role of blue economy in the achievement of sustainable development goals; and (c) bridge existing gaps in knowledge and enhance private sector investment in blue growth in Kenya.

Dr Julius Francis, the Executive Secretary of WIOMSA, was one of the panellists in the plenary session on "The role of science and infrastructural economics and marine spatial planning" and he raised and discussed three questions: where is the data generated from different national and regional research programmes?; is the data generated accessible?; and has the data generated been optimally used? WIOMSA is developing a data management policy that will respond to these questions.

WIOMSA and implementation of the **Nairobi Convention Climate Change Strategy**

The countries of the Western Indian Ocean region have prioritized climate change and its impacts and made commitments to address it through national and regional efforts. In June 2015, the Eighth Conference of Parties (COP 8) of the Nairobi Convention approved the Climate Change Strategy for the Western Indian Ocean region which was developed jointly by the Secretariat of the Nairobi Convention and WIOMSA. The Strategy provides a roadmap for the Nairobi Convention Secretariat and contracting parties to address the impacts of climate change. Further, all the Western Indian Ocean countries are signatories to the Paris Agreement, the central aim of which is to strengthen the global response to the threat of climate change and the ability of countries to deal with the impacts of climate change.

The new MASMA Programme, which started in February 2018, is designed to assist the countries of the region to implement the Paris Agreement and the Climate Change Strategy. **To further the implementation of the climate change strategy, WIOMSA partnered with Lund University to organise a regional climate change workshop**

Grey Reef Shark Carcarhinus amblyrhynchos. © Pedro Ferreira

Regional workshop on **"Marine organisms' response to climate change** – adaption or extinction?"

In October 2018, WIOMSA together with Lund University, Sweden hosted a regional workshop in Mombasa, Kenya. The workshop was an ideal partnership because one of its objectives "furthering knowledge on how marine species in the region are responding to rapid climate change" is in line with the focus of the new MASMA programme.

There is widespread consensus among climate scientists today that global climate change is real and has anthropogenic roots. Marine species are exposed to a large array of stressors, such as warming and ocean acidification, that are linked directly to anthropogenic climate change. The general view on whether natural populations can adapt to anthropogenic change is that many species will fail to acclimatize to rapid climate change effects. An understanding of how species respond to changes associated with climate change is unfortunately not fully developed.

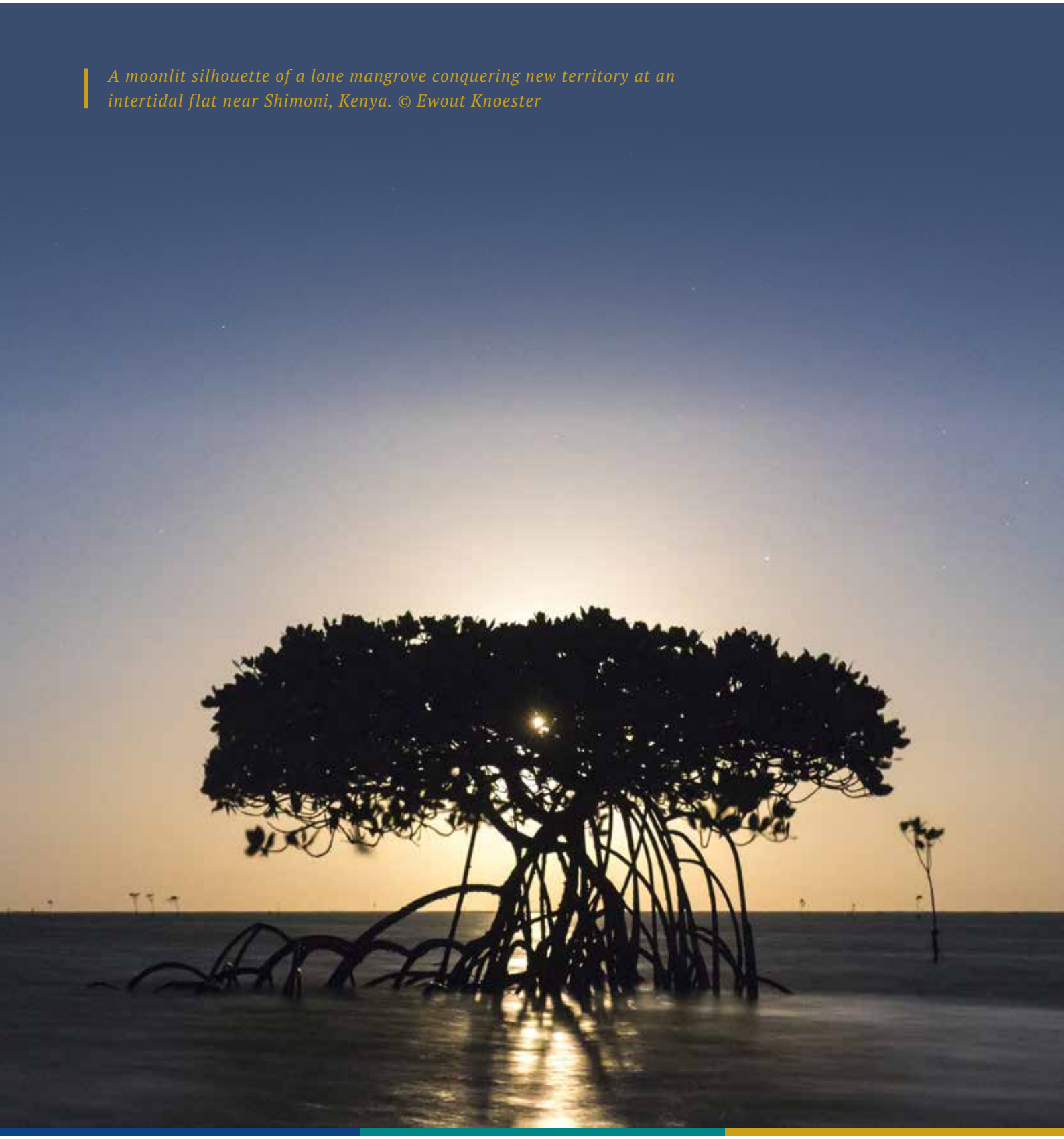
This workshop therefore, aimed to improve knowledge and specifically:

- **Synthesize current knowledge** about how marine species in the Western Indian Ocean region respond to climate change;
- **Identify new research directions** to further understand species' ability or limitations to adjust to anthropogenic stress, this in order to improve future management strategies;
- **Stimulate discussions and facilitate prospective collaboration** between researchers and research groups in the WIOMSA region and to develop comparative research in tropical and temperate climates.

The participants at the workshop were a mix of researchers and experts representing a wide array of both government agencies and non-governmental institutions. The workshop consisted of four keynote presentations and four different sessions (coral reefs, seagrasses and mangroves, fish and climate change). The third day was dedicated to group discussions and groups were composed in line with the areas of expertise.

The aim of the group discussions was to respond to questions on the present knowledge within the research field, what is needed or what areas have been overlooked in the specific fields and the way forward. The results from the group discussions will be summarized into a report/article for publication during 2019.

A moonlit silhouette of a lone mangrove conquering new territory at an intertidal flat near Shimoni, Kenya. © Ewout Knoester



MEMBERS' CORNER

One of the key success factors for WIOMSA as a non-governmental organization and membership-based association is the strength of its membership. This section is dedicated to highlighting the activities and news of WIOMSA members and constituents.

The year 2018 was a time for the renewal and refreshment of the various organs of the Association. From the election of Board members and appointments to the Board, to new faces and the reshuffling of the Programme committees; from the appointment of new staff members who joined the WIOMSA Secretariat, to the election of new country coordinators, we are excited to welcome all the new faces and to continue working with the old hands in various capacities.

WIOMSA's philosophy in recruitment, appointment and election is to engage people with like minds but with a wide range of professional backgrounds, based on the principle of having the right people in the right place; people who can discuss issues with an open mind and go beyond past ways of doing things to speedily implement bold new ideas.

Fishermen landing sea cucumbers from a mariculture farm (Zanzibar, 2018)
© Nuri Steinmann

New WIOMSA Board member

In March 2018, The WIOMSA Board of Trustees elected Board officials and appointed two co-opted members. **Dr Jacqueline Uku was elected by the WIOMSA Board of Trustees to continue serving as WIOMSA President. The Board elected Dr Ranjeet Bhagooli as Vice President and Prof Yunus Mgaya as Treasurer. The Board of Trustees also retained Prof Paul Siegel as a co-opted member, and appointed Mr Philippe Sauce, also a co-opted member as the Board's financial advisor to the WIOMSA Trust.**

Also appointed to the Board as a co-opted member is Ms Rebecca Loustau-Lalanne. Read about her background and expertise in her profile below.

Ms Loustau-Lalanne is the Principal Secretary in the Vice-President's Office, Seychelles. **She brings a multidimensional perspective to the Board's deliberations through her work as Principal Secretary for the Blue Economy Department in Seychelles,** her **experience as First Secretary in the Multilateral Affairs Division of the Ministry of Foreign Affairs in Seychelles,** and **her work with the United Nations Development Programme.**

Ms Loustau-Lalanne obtained a Bachelor of Arts degree in Politics, International Relations and Philosophy from Middlesex University in 2003 and started work at the Department of Environment as a Project Officer in 2004. She retained this position until 2007 during which time she established an International Conventions Unit (ICU), which coordinated

the implementation of various environment-related development projects in the country. Most of the projects were funded by the Global Environment Facility (GEF). From 2008 to 2010, she worked as a Programme Officer for the United Nations Development Programme (UNDP) sub-unit in Seychelles which had the primary task of implementing all the national projects under the UNDP country portfolio, ranging from social welfare and good governance to sustainable development projects. In January 2012, Ms Loustau-Lalanne started work with the Ministry of Foreign Affairs as First Secretary in the Multilateral Affairs Division. Her portfolio included a range of dossiers, including the membership of the Commonwealth, United Nations environmental conventions, and Small Islands Developing States. Her main tasks related to ensuring Seychelles' effective participation in international conferences, updating national position papers and coordinating the implementation of national and regional projects. **In February 2015 she was appointed Principal Secretary for the Blue Economy Department in the Ministry of Finance, Trade and the Blue Economy, and subsequently transferred to the Vice President's office in December 2016 with the same portfolio.**

Profile of **the MASMA Programme** and **Cities and Coasts Project committees**

In 2018, the WIOMSA Board appointed new members to the MASMA Programme Committee (MASMA PC) and restructured the composition of the committee. The Board also constituted a new committee to preside over the Cities and Coasts Project. WIOMSA's programme committees are technical groups appointed by the WIOMSA Board to provide advisory services to the granting bodies (Sida and WIOMSA) on the competitive research grants, giving independent scientific advice on the proposals to be funded and effective management and monitoring and evaluation of the competitive research grants.

Profiles of the MASMA Programme Committee.

Prof Kassim Kulindwa has been appointed Chair of the MASMA PC, taking over from Prof Ian Bryceson. Kassim joined the MASMA PC in 2009. He is a professor in the Department of Economics at the University of Dar es Salaam. He served as Associate Professor at the Norwegian University of Life Sciences in the Department of International Environment and Development Studies from 2010 to 2015. Prof Kulindwa completed his PhD in Economics at Gothenburg University in Sweden, in 1994. He holds two master's degrees in economics from the University of Dar es Salaam and the University of British Columbia. His areas of professional interest are in empirical analyses of issues concerning the environment and natural resources, including; management and utilisation of water, energy, wetlands, fisheries and wildlife. Others are climate change mitigation and adaptation, valuation of environmental goods and services, non-timber forest products, livelihoods and poverty, payments for environmental services, cost benefit analysis and environmental impact assessment, all in the context of sustainable development. He supervises MA, MSc and PhD candidates. He has chaired and is a member of several advisory boards and technical committees.

Prof Ian Bryceson is a full Professor with the Department for International Environment and Development Studies at the Norwegian University of Life Sciences. His fields of interest include marine ecology, small-scale fisheries, aquaculture, marine conservation, coastal zone management, coastal people's struggles for rights, and broader issues of social-ecological resilience and vulnerability in international contexts. Prof Bryceson studied Biological Oceanography at the University of Washington, Seattle and then completed his PhD in 1977 at the University of Dar es Salaam, Tanzania with his thesis on phytoplankton ecology in the coastal waters of Dar es Salaam. He subsequently worked as a Senior Lecturer at the University of Dar es Salaam, then as Guest Researcher at the University of Oslo, Senior Environmental Adviser at Norad, and Professor II at the University of Bergen prior to taking up his current position. Prof Bryceson now teaches post-graduate courses and supervises MSc and PhD candidates at the Norwegian University of Life Sciences, as well as leading several major research projects imbedded in institutional collaboration with the University of Dar es Salaam and the State University of Zanzibar, among others. He is a

member of multiple scientific committees, boards and councils. He has served on the MASMA PC since 2004, holding the chairmanship between 2008 and 2018. He is a founder member of WIOMSA and played a key role in the establishment phase of the Association from 1989 to 1991. He was awarded WIOMSA Honorary Membership in 2009 in recognition of his exemplary, outstanding and distinguished contribution towards the development of coastal and marine science in the Western Indian Ocean.

Dr Håkan Berg has a professional background in aquatic ecology, ecotoxicology and natural resource management. He has worked with research and management of aquatic resources in tropical countries for more than 25 years, in Africa, Asia and Central America. Dr Berg finished his PhD in aquatic ecotoxicology at the department of System Ecology at Stockholm University in 1996 and became an associate professor at the Royal Institute of Technology in 2004, where he was senior lecturer in ecology and environmental sciences. Dr Berg has set up and helped to coordinate several regional research networks in the Indian Ocean (MASMA, CORDIO), Lake Victoria (VicRes) and in the Greater Mekong Region (The Wetland Alliance), when he worked as a senior research advisor to the Swedish International Development Cooperation Agency. He has worked as associate professor at the Asian Institute of Technology in Thailand, with research and management of tropical wetlands. As senior environmental expert at the Mekong River Commission in Laos, he helped to coordinate environmental monitoring activities in the Mekong River. Dr Berg has been involved in several global processes related to biodiversity and ecosystem services (e.g. the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), while he was working at the Resilience and Development programme at the Stockholm Resilience Centre.

Dr Pascale Chabanet is the Director of the Institute of Research for Development (IRD), La Réunion and a researcher in Réunion Island, French Overseas Department. For the past 20 years, her main research subject has been the ecology of fish associated with coral reefs in the South West Indian Ocean and West Pacific. Dr Chabanet studied biology at the Université d'Aix-Marseille in France before obtaining a grant to do a master's degree in marine biology in the USA (University of California, Santa Barbara). She holds a PhD from the University of Réunion on the relations between benthic and fish communities on the island's coral reefs. She served as a Senior Lecturer at Reunion Island University between 1996 and 2003. Dr Chabanet joined IRD in New Caledonia in 2003 where she studied the coral reefs of the Pacific. In 2005, she obtained accreditation to supervise research (HDR), having presented her work on the impact of coral reef perturbations on reef fishes in the South West Indian Ocean. In 2008, Dr Chabanet returned to her research post at the IRD, working her way up to the Director post in 2012. She served on the WIOMSA Board of Trustees from 2009 to 2017 and was elected Vice President of the Board from 2013 to 2017. She is deeply involved in decision-making structures on marine conservation as the scientific or management committees, and actively supervises students in their research. She is also fully involved in the community awareness initiatives on environmental issues related to coral reefs.

Prof Moenieba Isaacs is a full Professor with the Institute for Poverty, Land and Agrarian Studies (PLAAS) at the University of the Western Cape (UWC) in South Africa. She is the Academic Coordinator for the Institute and manages post graduate diplomas, MPhil and PhD research at PLAAS. She is also

the co-coordinator of accredited short-course training on the Political Economy of Land Governance in Africa, in collaboration with the African Union's African Land Policy Center. Her research focus is on understanding the social and political processes of fisheries reform in South Africa, mainly through the lens of small-scale fisheries policy processes and implementation, working extensively with communities in South Africa to find policy solutions. She is the regional coordinator and founding member of the Global Partnership for the Future of Small-Scale Fisheries, Too Big To Ignore and corresponds with the Social Sciences and Humanities Research Council of Canada to enhance understanding of the real contribution of small-scale fisheries to food security, nutrition, livelihoods, poverty alleviation, wealth generation and trade, as well as the impacts and implications of global change processes such as urbanization, globalization, migration, climate change, aquaculture, and communication technology on small-scale fisheries. Monieba has participated in a number of global pnales on a variety of topics from ecosystem research to fisheries crime. , In 2017, Prof Isaacs received UWC Institutional Individual Engagement Excellence Award for her research, policy and community engagement work.

Dr Adriano Macia is an Associate Professor and Senior Lecturer in Marine Ecology and coordinator of post-graduate courses at the Department of Biological Sciences, University of Eduardo Mondlane in Mozambique. He has conducted much of his research along the Mozambican coast and in the Western Indian Ocean Region, focusing on marine ecology. His research interests include penaeid shrimps/ brachyuran, crabs, mangroves and coastal habitats trophic connectivity issues, under the overarching theme of marine fisheries resources management. As an ecologist, Dr Macia has been involved in a variety of local and regional research projects such as investigating the links between marine habitats, the macrobenthos of the mangrove areas, generating knowledge for the creation of MPAs, and mangroves as phytoremediators of urban pollution. He has published several scientific articles in different journals. At present he is coordinating a sub-programme on Sustainability of Marine and Coastal resources in Mozambique with the objective of creating local research capacity through training at PhD and post-doctoral levels.

Dr Jan Robinson is the Project Manager of the Third South-West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3). The project is supporting marine spatial planning, improved fisheries governance and investment in Seychelles' blue economy, and is part-financed by the proceeds of the World's first sovereign Blue Bond. Jan has coordinated fisheries research and management projects in Seychelles and the Indian Ocean for 20 years, encompassing roles with the Seychelles Fishing Authority and the Indian Ocean Tuna Commission. His research has focused on coral reef ecology, reef fish behaviour, climate change and fisheries management. Jan has specific expertise in spawning aggregation fisheries and is a Director of Science and Conservation of Fish Aggregations (SCRFA), a non-profit organization based in the US. He has authored over 40 peer-reviewed scientific articles and books. He holds an MSc in Applied Marine Science from the University of Plymouth and a PhD from James Cook University through the Australian Research Council Centre of Excellence for Coral Reef Studies.

Dr Jorge Santos is an Associate Professor at the Norwegian College of Fisheries Science, the University of Tromsø, and the Arctic University of Norway. He is a generalist and his main fields of professional experience are marine science, fisheries research, fisheries management and higher education. Presently, he is collaborating in

research projects on ecosystem management (Norway), bio-geography (Caribbean), socio-ecological systems (Indian Ocean) and fisheries technology (Japan). At home, he is the coordinator of the MSc program in International Fisheries Management, a multi-disciplinary program that he helped start at the College in 1998. His main teaching topics are Fishery Biology and Research Methods and he likes to get involved in new, stimulating participatory activities. Dr Santos is excited to join the MASMA PC which exposes him to many exciting science and education initiatives in the Indian Ocean. An activity that keeps him very busy at present is the coordination of a large mobility programme between his faculty and several faculties and research institutions in Sri Lanka on topics related to blue research and development.

Dr Max Troell is an Associate Professor, a Program Director of the Sustainable Seafood Program at Beijer Institute and a senior researcher at Stockholm Resilience Centre and the Swedish International Biodiversity Programme (Swedbio). He is a system and marine ecologist working with a broad range of sustainability and governance issues related to seafood and marine systems. He has vast experience on a diversity of aquaculture systems and coastal and marine ecosystems and addressing sustainable seafood utilisation from a broader social-ecological perspective – embracing both equity and poverty aspects. His research interest involves a transdisciplinary perspective on sustainable use of marine resources with impacts on marine conservation policies and aquaculture practices of today. Dr Troell is a pioneer in contributing to global development of integrated aquaculture techniques and instrumental in FAO's work on the ecosystem approach to aquaculture (EAA). He is an advisor to a number of organizations and committees and has established strong links with a wide range of academic and non-academic organizations around the world. Recent work addresses the global food portfolio and the role seafood can play.

Dr Jesper Vasell has 20 years of experience in innovation based on academic research from universities and research institutes. He is currently the Director of the KTH Global Development Hub at the KTH Royal Institute of Technology, based in Sweden and Kenya. He has served as 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.

Profiles of the Cities and Coasts Programme Committee.

Dr Lena Gipperth is a Professor in environmental law and Director of the Centre for Sea and Society at the University of Gothenburg, Sweden. She is the Chair of the Cities and Coasts Project Committee, having moved from the MASMA PC in 2018. Her research focus is on the legal implementation of environmental quality objectives, particularly in relation to water and marine resources. She has many years of experience working in the science to policy context and has been part of a number of transdisciplinary programmes related to topics such as water management, restoration of coastal habitats, risk assessment and management of chemicals and antifouling practices, for example CHANGE – Changing antifouling practices for leisure boats in the Baltic Sea. She is currently involved in transdisciplinary programs: FRAM Centre for Future Chemical Risk Assessment and Management Strategies and ZORRO – Zostera restouration – Interdisciplinary research about the management and restoration of eelgrass in Sweden.

A marine and island geographer by training, **Dr Gilbert David** is Director of Research in the French Institute for Development (previously Orstom). He has extensive working experience on vulnerability and viability of island countries and territories, including Caribbean (Haiti, Martinique), Melanesia (New-Caledonia, Vanuatu), and the Western Indian Ocean (Comoros, Madagascar, Réunion). He was appointed as a member of the MASMA Programme Committee in 2004 and awarded WIOMSA fellow membership in 2009 in recognition of his outstanding work and significant contribution to coastal and marine scientific research in the region.

Prof Mwakio P. Tole is Professor of Environmental Geochemistry at the Department of Environmental Sciences at Pwani University in Kilifi, Kenya. He served as the Founding Deputy Vice Chancellor (Administration, Finance and Planning) of Pwani University from 2013 to 2018; Deputy Principal (Administration and Finance) from 2009 to 2013; Acting Deputy Vice Chancellor (Academic) at Kenyatta University from 2008 to 2009; and has been Chair of Department and Dean of Schools at Moi University and Kenyatta University. His major area of research interest is pollution and energy studies. Prof Tole has published widely and extensively on water, soil and air pollution, as well as on geothermal energy exploration and environmental impacts of geothermal energy exploitation. He has successfully supervised 44 Masters and 11 PhD students.

Dr Elin Torrell joined the University of Rhode Island's Coastal Resources Center (CRC) in 2002 and has more than 20 years of experience providing technical assistance and leading complex and interdisciplinary projects in Africa and South East Asia. As Director of International Programs, she leads CRC teams in implementing long-term field programmes around the world and she takes a special interest in developing strategic planning, monitoring and evaluation systems that foster learning within and across multiple projects. She provides programmatic direction and selected technical support within her main areas of expertise: monitoring, evaluation and learning, livelihood development, mainstreaming gender in fisheries, and the integration of population, health, and environment. She currently serves as the gender technical advisor for CRC's fisheries field programmes and she is the Principal Investigator for the US$ 25 million USAID Philippines Fish Right Program. She is also the Deputy Director for the USAID Feed the Future Fish Innovation Lab, where she oversees programming within the Human Impacts Area of Inquiry as well as monitoring, evaluation, and learning. **Dr Torrell** has a PhD in environmental studies and a MSc in human and economic geography.

Professor Coleen Vogel, Global Change Institute, University of the Witwatersrand, South Africa. Prof Vogel is a climatologist by training and has undertaken research in climate change, climate vulnerability and adaptation, with a particular focus on disaster risk reduction and climate variability. She was one of the key contributors to the writing of the Green and White Papers on South African Disaster Management and was a major contributing author for the Disaster Management Act. She was one of the chapter lead authors of the Africa Chapter for the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report and was also an author of the Synthesis Report for Policy Makers of the 4th IPCC Assessment Report. This large team of various scientists, together with Al Gore, received a Nobel Peace Prize. Prof Vogel was a chapter author on Human Security

for the 5th IPCC assessment report. She has been chair and vice chair of international committees (for example, the International Human Dimensions Programme, now known together with other international programmes as Future Earth). Dr Vogel received the international Burtoni Award for her work on climate change advocacy and the science of climate change adaptation. Her current research interests include transformative education for global environment change and sustainability, climate change in its broader context and adaptation and disaster risk reduction, focusing particularly on the interactions between physical and social dimensions shaping change. Dr Vogel is currently project lead on the City of Johannesburg Adaptation and Climate Change.

Prof Pius Yanda is a professor at the Institute of Resource Assessment in Dar es Salaam, Tanzania. He led the process to establish the Climate Change Centre, as well as PhD and MSc degrees on climate change at the University of Dar es Salaam. Prof Yanda holds a PhD from the University of Dar es Salaam. He has served as a lead author for the Intergovernmental Panel on Climate Change (IPCC) and in 2015 was nominated as vice chair for the IPCC Working Group II. Dr Yanda has published extensively in peer-reviewed journals.

WIOMSA Members elect Country Coordinators

The WIOMSA Board of Trustees approved the appointment of the new WIOMSA Country Coordinators following elections carried out by WIOMSA members.

Constitutional, Country Coordinators are elected by members in their respective countries every three years. Country Coordinators play an important role in the day-to-day operations of the Association because they provide a critical link between the WIOMSA leadership, the Secretariat and the membership. They are also the face of WIOMSA in the member countries. Country Coordinators play a unique role because they are able to influence the course and direction of the Association based on the interests of the members they represent. Published here are brief profiles of the newly elected Country Coordinators.

Dr Nina Wambiji has been re-elected unopposed as the Country Coordinator for Kenya. Nina is the Assistant Director – Fisheries at Kenya Marine and Fisheries Research Institute (KMFRI) in Mombasa. She holds a PhD degree in Marine Environmental Sciences (Fish Physiology) from University of the Ryukyus, Okinawa, Japan. Dr Wambiji has diverse research interests which include (i) using molecular techniques to explore fish physiology and its utility in the exploitation of fish among coastal fishing communities; (ii) examining the ecology of marine invertebrates, near-shore fish species, large pelagic fishes and marine mammals, and their importance in the

sustainable use and management of marine resources; and (iii) the management of marine biodiversity fata through the African Register of Marine Species (AfreMas), among other areas. Some of her work includes overseeing a regional WIOMSA-MASMA-funded project: BY-Catch Assessment and Mitigation in Western Indian Ocean Fisheries (BYCAM)) in three countries. In 2013, Dr Wambiji won the African Women in Agriculture and Research Development (AWARD) fellowship.

For her second term, Dr Wambiji aspires to continue promoting awareness about WIOMSA and its activities, and encourage membership and participation. She would like to enhance scientific interest among junior and upcoming scientists in Kenya because the majority of the Kenyan membership consists of young people. She sees nurturing their interest in marine science as key to ensuring a high quality of scientific work in the Western Indian Ocean. She also aims to encourage participatory research that is relevant to the coastal communities in which the impacts will directly be felt by the stakeholders, increase the visibility of work undertaken by Kenyan scientists in different fora, hold country meetings (with scientists, policymakers, the private sector and government institutions), promote collaboration with other donors and stakeholders to support WIOMSA activities, and build up teams of experts in different fields to run multidisciplinary research projects with scientists in the Western Indian Ocean region and worldwide.

Ms Volanirina Ramahery has been re-elected unopposed to serve a second term as the Madagascar Country Coordinator. Ms Ramahery is the Project Coordinator for Nexus Madagascar. Her experience in marine and coastal conservation spans more than 10 years; she has worked with several non-governmental organizations (NGOs) in marine and coastal conservation in different parts of Madagascar. She holds a Master of Science degree in Coastal Zone Management from Nova Southeastern University in Florida (USA) and a Master's degree in Animal Biology from the University of Antananarivo.

She has extensive knowledge of marine conservation efforts in Madagascar and the Western Indian Ocean region. Her vision for the next three years as WIOMSA Country Coordinator for Madagascar is to contribute towards developing opportunities and exchanges for Malagasy marine conservation practitioners and students, and to improve their technical skills through better information sharing and networking. She will put more effort into encouraging Malagasy individuals as well as government and NGOs to become WIOMSA members, so as to ensure the financial sustainability of what she considers to be an important and reputable regional organization.

Mr Nadeem Nazurally has been elected unopposed as the new Country Coordinator for Mauritius. He takes over from Dr Daniel Marie who served for two terms. Mr Nazurally has devoted much of his career to marine conservation, including coral farming, and is currently working at the University of Mauritius (UoM) Faculty of Agriculture as a lecturer. He developed a keen interest in ocean sciences and aquaculture during his early school days due to his passion for environmental protection and active conservation. He is the founder and President of the NGO EcoMode Society which has participated in several conservation projects funded by the Global Environment Facility/Small Grants Programme/ United Nations Development Programme. He has worked with a very large team towards a common goal: sustainability and active conservation. Mr Nazurally holds a BSc in Marine Science and Technology (2007), an MSc in Solid Waste and Resource Management (2013) and

he is currently pursuing an MPhil/PhD in Aquaculture and Ocean Sciences. He has designed two continuous professional development short courses in Sustainable Marine Aquaculture and Ocean Economy and has also designed and worked with a colleague to launch a first of its kind MSc in Ocean Economy and Entrepreneurship course at the UoM.

Mr Nazurally has been a member of WIOMSA since 2007 and his vision for WIOMSA is to promote its core mission, engage the regional communities and all the marine scientists towards a common goal: a prosperous marine environment and opportunities for all to contribute in the advancement of ocean sciences and development for a sustainable ocean economy. He intends to make WIOMSA known across Mauritius and implement a common regional WIOMSA marine station in the near future.

Prof Sébastien Jaquemet has been re-elected unopposed to serve his second term as the Réunion Country Coordinator. He holds a PhD from Université de la Réunion and a post-doctoral degree from Rhodes University in South Africa. He is a professor of marine ecology at the UMR Entropie laboratory at Université de la Réunion and since 2016 has served as the scientific coordinator of research on sharks and rays at the Reunion agency for shark risk management (CRA-Requin). His research interests include the ecology of marine predators and the impact of human activities on the functioning of oceanic food webs. Prof Jaquemet has been a member of WIOMSA since 2002 and he takes great pride in being part of an association which has achieved so much for the sustainable development of the Western Indian Ocean.

For his second mandate as WIOMSA Country Coordinator, Prof Jaquemet will promote WIOMSA locally to attract more members and with the aim of having more people submitting applications to the MASMA programme. He also aims to improve his role as Country Coordinator, not only for Réunion Island, but for France and the French territories of the Western Indian Ocean. He believes this will to widen the impact of France and the European Union in the region, with the goal of supporting its development and promoting exchanges with other regional institutions and members of WIOMSA. Dr Jaquemet was part of the organizing committee of the 6th WIOMSA Scientific Symposium that took place in Réunion and his goal is to push for the Symposium to return to the island during his tenure as Country Coordinator.

Dr Angus MacDonald has been re-elected unopposed to serve a second term as the Country Coordinator for South Africa. Dr MacDonald is a senior lecturer in the School of Life Sciences at the University of KwaZulu-Natal. He is interested in benthic organisms and their ecology, and has been involved in a variety of studies both in the field and in the laboratory. He has studied benthic environments from the Pondoland coast to northern Mozambique. His postgraduate focus was on speciation and population genetics in hard corals from South Africa. Currently he is involved in examining relative genetic connectivity between various populations of marine organisms in the southwest Indian Ocean region.

For his second term, Dr MacDonald would like to establish better ties between members of WIOMSA. He believes that political boundaries along Western Indian Ocean coastline rarely represent biogeographic boundaries and a regional organization provides a vehicle for collaboration, dissemination and application of regionally relevant research – making it possible for marine scientists to better study their subject matter.

He hopes to build ties regionally through collaborative research and training endeavours.

Dr Blandina Robert Lugendo has been elected unopposed as the Country Coordinator for mainland Tanzania. Dr Lugendo is the head of the Department of Aquatic Sciences and Fisheries Technology of the University of Dar es Salaam. She holds a BSc (Marine Biology and Microbiology) and a MSc (Marine Biology) from the University of Dar es Salaam and a PhD (Fish Ecology) from Radboud University Nijmegen in the Netherlands. Her main research areas include seagrass ecology, fish ecology, mangrove ecology, trophic relationships, as well as stable isotope studies where she has researched and published. Dr Lugendo has been a member of WIOMSA since 1996 and has served as a member of WIOMSA scientific committees and on the Editorial Board of the Western Indian Ocean Journal of Marine Sciences (since 2010).

Dr Lugendo sees WIOMSA as an important platform that connects scientists working in the marine science disciplines in the Western Indian Ocean region and beyond. She also perceives WIOMSA as an important stepping stone for young scientists who want to grow in different disciplines of marine science. Her vision is to improve the participation of marine scientists and research institutions from Tanzania in WIOMSA's various activities, and to help WIOMSA achieve its vision.

Dr Saleh Yahya has been re-elected unopposed as the Country Coordinator for Zanzibar. Dr Yahya is a lecturer at the Institute of Marine Sciences of the University of Dar es Salaam. He holds a PhD in Marine and Coastal Science from Stockholm University (2011) and his research interests are coral reef ecology and coastal and marine resource management. His vision for his second term in office is to expand the reach and recognition of WIOMSA in Zanzibar and to achieve greater participation of Zanzibar members in the affairs of the Association.

Ms Célia Macamo has been re-elected as the Country Coordinator for Mozambique. She is a lecturer and researcher at the Eduardo Mondlane University in Mozambique. She has a broad interest in marine biology, but her main focus is on mangrove forest ecology, management, conservation and carbon stocks. She has been involved in many international, regional and national research projects focusing on the impact of climate change on mangrove forests and the resilience of mangroves to climate change; the contribution of mangroves to the well-being of communities; and the mangrove management system in Mozambique, including community-based management models. She is a member of the Western Indian Ocean Mangrove Network.

Célia counts the steady increase of Mozambican participants in the last two WIOMSA Symposia, and the recruitment of two institutional members from Mozambique, as some of the accomplishments of her first term in office. In addition, more Mozambicans are applying for the opportunities offered by WIOMSA. However, she notes, there are still several challenges to overcome, such as increasing the number of individual and institutional members, strengthening the Mozambican scientific community in the field of marine sciences and overcoming the language barrier. She intends to address these issues in her current mandate.

Dr Jude Bijoux continues as the Country Coordinator for the Seychelles. He is a Seychellois consultant working in the field of marine conservation, fisheries and climate change adaptation. He has a PhD in marine ecology and his scientific interests are an understanding of the mobility of fish, factors that structure coral reef fish communities and the restoration of marine habitats affected by climate change. He is also interested in the social dimensions of fisheries and marine conservation in the face of climate change.

NEW STAFF MEMBERS

Dr Mathias Igulu has joined WIOMSA as the Marine and Coastal Science for Management (MASMA) Programme Manager. Mathias moved from Dar es Salaam to Zanzibar, where he has been working for the WWF Tanzania Country Office, leading the marine program to deliver country solutions for sustainable development. This has included supporting alternative livelihoods for coastal communities along the coast and strengthening fisheries co-management systems in the area. His expertise is in strategy development, monitoring and evaluation, and implementing a theory of change around responsible fisheries, poverty and ecosystem health. Mathias holds a PhD in Functional Marine Ecology from Radboud University of Nijmegen-Netherlands, a master's degree in Ecological Marine Management from Vrije University of Brussels-Belgium, and a bachelor's degree in science from the University of Dar es Salaam, Tanzania.

Over the past 15 years, he has worked on different issues surrounding marine ecology and related aspects in coastal East Africa. He has published over 20 papers, reports and book chapters on marine ecology, ecosystem-based management, coastal habitat connectivity, behaviour change of stakeholders, and management of near-shore habitats. He has considerable experience in the conservation/sustainability sector, including managing large teams and developing comprehensive initiatives and sustainability strategies to tackle some of society's most pressing social and ecological challenges.

Dr Valentine Ochanda, the new Cities and Coasts Project Manager at WIOMSA, is an environmental planner. She holds a doctoral degree in cities and sustainability from the University of the Witwatersrand Faculty of Engineering and the Built Environment, School of Architecture and Planning. She obtained her Bachelor of Science from Moi University and a Master of Planning degrees from Kenyatta University.

Her current areas of interest are the use and enhancement of sustainable urban architectural designs that are in sync with current energy demands and consumption in urban areas.

She is an accomplished researcher and consultant on environmental matters relating to the built environment, having been registered as a lead expert by the National Environmental Management Authority of Kenya, currently the Kenyan Institute of the Environment. She is a member of the Kenya Institute of Planners, Forestry Society of Kenya and the planning schools (AAPs) of Africa through the University of the Witwatersrand, South Africa.

Jedida Oneko is a Communications Specialist with over 10 years of experience in the field. She joins WIOMSA as Communications Manager, a role recently created for the Association. Jedida's educational background is in journalism, specifically print media, but she has worked in broadcasting and marketing. Over the years, her experience in communication has expanded and she also specialises in social media marketing, website design and content population and publication production. Jedida has worked in non-governmental organisations taking on several communications roles. Although she has worked in many fields in the development sector, Jedida now concentrates on environmental communication which she wishes to specialize in.

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

Ms Saleh is passionate about empowering young people and interesting them in a career in accounting. She is a motivational speaker in her spare time, giving presentations to university students on the importance of becoming a CPA and ways to accomplish this. She is also interested in leadership and development initiatives and has attended several training courses in these areas. She is excited about her new position at WIOMSA and is committed to utilising her skills and actively contributing towards ensuring that the MASMA and associated programme goals are achieved.

RESOURCE MOBILIZATION

One of the main challenges facing WIOMSA, and non-governmental organizations in general, is ensuring a sustainable financial future. To achieve that, WIOMSA needs to look for creative ways to provide the funds that will enable the Association to continue its work.

WIOMSA's resource mobilization efforts are focused on finding ways to diversify the funding base, looking for different donors who could contribute directly into the WIOMSA Trust, and increasing income from the existing sources.

WIOMSA's resource mobilization efforts serve two purposes: to capitalize the WIOMSA Trust and to contribute to staff emoluments. The Association's income is derived from management fees associated with project implementation, symposium registration and membership fees, book sales and office rentals.

In 2018, the projects that contributed management fees included the State Department of the USA; UNEP/Nairobi Convention; World Bank; and the European Union through the Indian Ocean Commission (COI). WIOMSA also participated in some new projects, some of which

Seaweed farming, Zanzibar. © Rahim Saggaf

Seagrass sampling at Hamjago, Mayotte, Comoros. © Fanny Kerninon

began in 2018 while others will be initiated in 2019. **These include:**

i) Sustainable Oceans, Livelihoods and food Security. Through Increased Capacity in Ecosystem research in the Western Indian Ocean (SOLSTICE-WIO), funded by the UK's Global Challenges Research Fund (GCRF).

ii) Coastal Biodiversity and food security in peri-urban Sub-Saharan Africa: assessment, capacity building and regional networking in contrasting Indian and Atlantic Oceans (COBIO-NET), funded by AGA KHAN/FCT.

iii) Marine and Coastal Management in the East Africa Region and GMES-Africa Marine and Coastal Service Development for Southern Africa (MarCoSouth), funded by the EU through the African Union.

iv) A regional Hub for African–German Partnership Projects at the Marine Science to Policy Interface, funded by BMZ/GIZ "Meerwissen in Afrika.

From management fees accrued from the projects and other revenue streams, WIOMSA was able to cover staff emoluments and make a contribution of USD 70 000 to the WIOMSA Trust.

COMMUNICATION AND INFORMATION DISSEMINATION

In 2018, WIOMSA worked across a variety of media and created compelling content. The aim of the Association's Communication and Engagement Strategy is to create dialogue around key issues, with the intention of influencing behavioural and social/environmental change. WIOMSA is committed to impact-oriented communication and information dissemination that adds value beyond scientific research. The Association continues to embrace the positive, influential and transformative power of various existing and emerging social media platforms in order to actively engage a younger generation. **WIOMSA disseminates information about its activities and communicates with its membership, partners and general public through a range of means including the WIOMSA website, blog, Newsbrief, Annual Report and the WIOMSA magazine and social media platforms.** WIOMSA also produces the Western Indian Ocean Journal of Marine Science and supports the production of books, policy briefs, guides and status reports.

Three issues of the WIOMSA Newsbrief were produced in 2018. Further, from June 2018, the Newsbrief was delivered via MailChimp. This mode of distribution allows for the analysis of the Newsbrief readership, enabling WIOMSA to accurately determine who reads the newsletter, which articles are the most popular, and the type of content that appeals to the different target audiences (students, scientists, managers and policymakers). Over the same period, WIOMSA made considerable gains by improving the WIOMSA website to make it cleaner, easier to read and more interactive, and by building a strong social media presence on Twitter, LinkedIn, Facebook and Instagram. Plans are underway to launch a website for the Network of Women in Marine Science and the WIOMSA Climate Change Portal in 2019. **This section of the Annual Report features WIOMSA's communication and dissemination activities for 2018.**

Seaweed drying, Zanzibar. © Rahim Saggaf

WIOMSA on **social media**

Social media provides a quick and effective way to share key messages with a wide audience and the need for organizations to be present and active on different social media platforms continues to grow. Active social media accounts allow an organization to interact on a day-to-day basis with its audience. For WIOMSA, social media has become especially important for communicating with a non-scientific audience and younger members of the WIOMSA community.

The number of followers on WIOMSA's social media platforms increased significantly during 2018. This was especially true for **Facebook** and **Twitter**.

The daily updating of the different social media platforms enabled WIOMSA to spread its message faster and more widely than ever before and the platforms have grown to become an important and valued part of WIOMSA's communication efforts.

WIOMSA is mainly active on Facebook, Instagram and Twitter. The Association added to its social media presence by creating a LinkedIn account at the end of 2018.

WIOMSA communicates on a wide range of issues and topics on social media, with content ranging from current issues in the marine and coastal environment, research results, training opportunities, news, funding opportunities, job opportunities, to news from WIOMSA and its partners and much more. The communication is a mix of scientific content and content that targets a non-scientific audience.

WIOMSA's growth on social media in 2018 is illustrated by the **WIOMSA Facebook page** which was created in June 2012 and which has grown in importance to become a vital part of the organization's communication efforts.

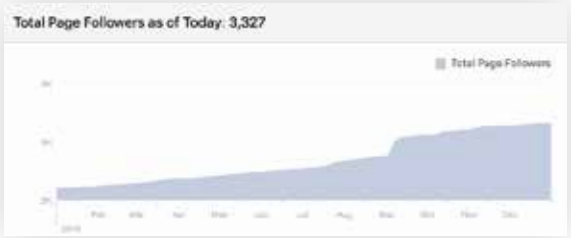
WIOMSAs Social Media accounts

Facebook: Western Indian Ocean Marine Science Association (WIOMSA) - @wiomsa

Twitter: @wiomsa

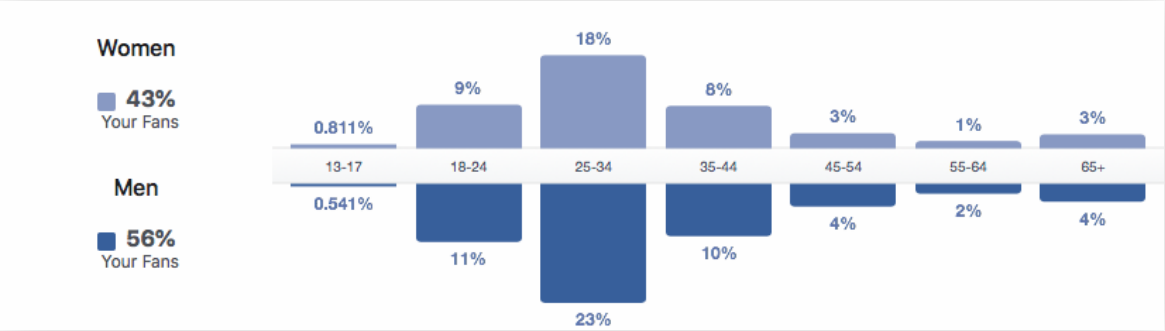
Instagram: wiomsa

LinkedIn: WIOMSA – Western Indian Ocean Marine Science Association



At the start 2018, WIOMSA had 2 200 followers on Facebook, a figure which increased to 3 327 by the end of December 2018, representing a growth of 51 percent! The largest number of new followers came in September, following a competition that WIOMSA held on Facebook. In all, 264 people entered the competition, allowing WIOMSA to grow its audience beyond the set target of 3 000 followers.

Statics from WIOMSA's Facebook account shows that WIOMSA has a **43 percent female** following and **56 percent male following.** The biggest age group amongst the WIOMSA followers is **25 to 34 years (41 percent).** It also shows that the number of followers above 45 years is low, amounting to only 17 percent of total followers.



WIOMSA's following on **INSTAGRAM** continues to grow steadily and currently stands at close to 500 followers. The Association hopes to improve the use of Instagram as an effective communication tool in 2019.

The WIOMSA **TWITTER** account has been active since June 2012 and in 2018, the account gained 367 new followers. The highest number of tweet impressions during the year was 21 500.

The WIOMSA **LINKEDIN** account was only activated in November 2018 and consequently it is too early to conduct a progress assessment. However, WIOMSA considers LinkedIn to be a promising new platform.

At the end of 2018, WIOMSA expanded its presence on social media when the WIOMSA Network of Women in Marine Science (WiMS) launched its own social media accounts on Facebook, Instagram and Twitter. These accounts will be used for communication of WiMS activities and other relevant news for women marine scientists.

WIOMSA considers its social media accounts to be a valuable complement to its other communication methods (website, blog, Newsbrief, WIOMSA magazine, Annual Report, etc.) and a vital component of the WIOMSA Communication and Engagement Strategy. The aim is to grow WIOMSA's presence on social media in 2019 and in the years to come; improve the content on social media; and to continue increasing the number of followers on the different platforms and thereby increase the number of people that WIOMSA reaches. The presence on social media not only allows WIOMSA to spread its message but it also allows the association to communicate in a different way with current and potential partners.

New **Publications**

1. Western Indian Ocean Journal of Marine Science obtains DOI

In 2018, the Western Indian Ocean Journal of Marine Science (WIOJMS) obtained Digital Object Identifiers (DOIs) for its papers. This is a common feature of most journals. DOIs are attached to journal articles, datasets, video, audio, theses, dissertations, and technical reports. American Psychological Association (APA) Style explains DOI as a digital fingerprint: "Each article receives a unique one at birth, and it can be used to identify the article throughout its lifespan, no matter where it goes." The DOIs were applied from WIOJMS Volume 17 Issue 2 (2018).

Volume 17 Issue 1 (2018) of the WIOJMS contains the following articles:

i. *Metapenaeus dobsoni (Miers, 1878), an alien Penaeidae* in Mozambican coastal waters: confirmation by mtDNA and morphology analyses. Luisa Simbine, Carla G. Marques, Patrícia D. Freitas, Kélvin E. Samucidine, Jaqueline Gusmão, Carolina Tavares, Pedro G. Junior.

ii. Keys and bibliography for the identification of zoeal stages of *brachyuran* crabs from the Western Indian Ocean. Marta Bento, José Paula.

iii. Navigating the sea space: the nature and significance of Giriama indigenous knowledge on marine resources. Khamati Shilabukha.

iv. Reef fishes of praia do Tofo and praia da Barra, Inhambane, Mozambique. Alexander J. Fordyce.

v. A feeding aggregation of Omura's whale, *Balaenoptera omurai*, off Nosy Be, Mozambique Channel. Pierre Laboute, Philippe Borsa.

vi. Hand-held sediment corer for use in shallow, turbulent coastal environments. Stephanie Stainbank, Michael H. Schleyer.

vii. Seasonal variation in the length–weight relationship and condition factor of thirty fish species from the Shimoni artisanal fishery, Kenya. Mary B. Ontomwa, Gladys M. Okemwa, Edward N. Kimani, Clay Obota.

viii. Marine biodiversity of La Reunion Island: echinoderms. Chantal Conand, Sonia Ribes-Beaudemoulin, Florence Trentin, Thierry Mulochau, Emilie Boissin.

ix. Length–weight relationship of selected teleost fishes from Kilifi County, Kenya. Julia A. Obuya, Dorcus A.O. Sigana, Virginia Wang'ondu, Nina Wambiji, Harrison O. Ong'anda, Boaz Orembo.

2. Special issue of WIOJMS

The special issue of the WIOJMS entitled "Humpback whales in the Western Indian Ocean" comprises the following articles:

i. Do the new-born calves of humpback whales *Megaptera* novaeangliae have a preference to position themselves at the side of their mother? Anjara T. Saloma, Schédir Marchesseau, Isabelle Charrier, Aristide Andrianarimisa, Emmanuel Antogiorgi, Olivier Adam.

ii. Distribution and biological characteristics of humpback whales in the Northwest region of the Indian Ocean according to data from the Soviet whaling fleet. Yuriy A. Mikhalev.

iii. Acoustic ecology of humpback whales in Brazilian waters investigated with basic and sophisticated passive acoustic technologies over 17 years. Renata S. Sousa-Lima, Marcia H. Engel, Victor Sábato, Bianca R. Lima, Thiago S.M. Queiróz, Marcos R.M. Brito, Deborah P. Fernandes, Cristiane A.C. Martins, Paula S. Hatum, Thamires Casagrande, Laura K. Honda, Maria Isabel C. Gonçalves, Júlio E. Baumgarten, Artur Andriolo, Milton C. Ribeiro, Christopher W. Clark.

iv. Recurrent acoustic patterns produced by a singing humpback whale *Megaptera novaeangliae*. Eduardo Mercado III.

v. Medium-term stereophonic recording of humpback whales in Sainte Marie channel, Madagascar: daily variation in whale density. Yann Doh, Olivier Adam, Gilles Nolibé.

vi. Using passive acoustic monitoring to assess humpback whale occurrence and breeding activity around La Réunion Island. Laura Ceyrac, Emmanuelle Barreau, Alexandre Modi, Vanessa Estrade, Violaine Dulau.

vii. From universal to local law: prospects for the protection of whales in the western Indian Ocean through the Whale Route project. Stéphanie Sorby.

3. WIOJMS Volume 17 Issue 2

Volume 17 Issue 2 (2018) of the WIOJMS contains the following articles:

i. Mangrove cover change detection in the Rufiji Delta in Tanzania. Elinasi Monga, Mwita M. Mangora, Joseph S. Mayunga.

ii. Growth rates of *Eucheuma denticulatum and Kappaphycus alvarezii (Rhodophyta; Gigartinales)* cultured using modified off-bottom and floating raft techniques on the Kenyan coast. Alex G. Kimathi, Joseph G. Wakibia, Moses K. Gichua.

iii. The influence of physical–chemical variables on the spatial and seasonal variation of Chlorophyll-a in coastal waters of Unguja, Zanzibar, Tanzania. Nyamisi Peter, Masumbuko Semba, Charles Lugomela, Margareth S. Kyewalyanga.

iv. Integrated seaweed–sea cucumber farming in Tanzania. Andreas Kunzmann, Marisol Beltran-Gutierrez, Godfrey Fabiani, Mary Namukose, Flower E. Msuya.

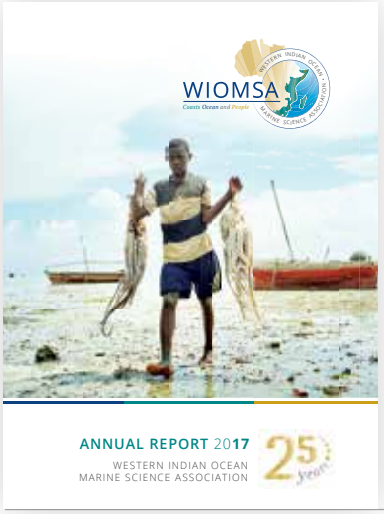
v. Indicators of stock status for large pelagic fish based on length composition from driftnet fisheries in Zanzibar. Tobias K. Mildenberger, Omar H. Omar, Ciarán McLaverty, Narriman Jiddawi, Matthias Wolff.

vi. Previously unlisted scleractinian species recorded from the Great Reef of Toliara, southwest Madagascar. Gildas G. Todinanahary, Mandimbelaza E. Refoty, Lucas Terrana, Thierry Lavitra, Igor Eeckhaut.

vii. Participatory assessment of priority fishery profiles in an overfished urban inshore seascape in Kenya. Johnstone O. Omukoto, Horace Owiti, Victor A. Mwakha, Cosmas N. Munga, Andrew W. Wamukota.

viii. Satellite-derived bathymetry: a case study of Mombasa Port Channel and its approaches, Kenya. Amon Kimeli, Pascal Thoya, Noah Ngisiang'e, Harrison Ong'anda, Charles Magori.

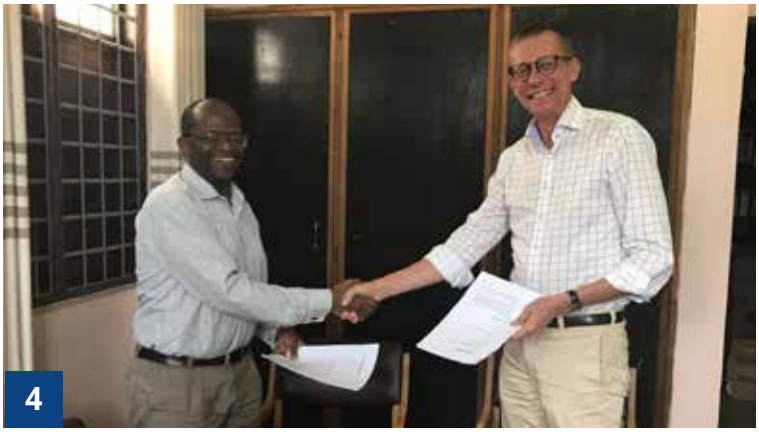
ix. Sediment macro- and meiobenthic fauna distribution along the Kenyan continental shelf. Hashim S. Mohamed, Agnes Muthumbi, John Githaiga, Julius Okondo.



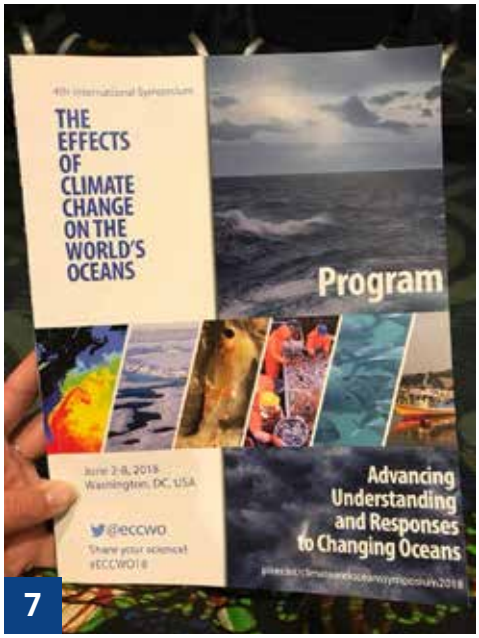
The 2017 Annual Report

The WIOMSA Annual report for 2017 highlights a myriad of projects and activities that the Association undertook in 2017, including science to policy initiatives, partnerships, capacity development and research. Activities of special note were WIOMSA's participation in the Ocean Conference, the development of the new five-year MASMA proposal, the 10th WIOMSA Scientific Symposium, the 6th General Assembly and the initiation of the development of a new WIOMSA Strategic Plan. A selection of other achievements and activities that took place in 2017 are also described in the report.

WIOMSA **DIARY 2018**



1. Authors' workshop for the Critical Habitats and Marine Protected Areas Outlook, January 2018, Mombasa, Kenya. **2.**The 38th WIOMSA Board of Trustees meeting, February 2018, Nairobi, Kenya. **3.** SWIOFISH technical backstopping inception meeting, February 2018, Dar es Salaam, Tanzania. **4.** Dr Claes Kjellström (Sida) and Dr Julius Francis (WIOMSA) at the signing of the new MASMA and Cities and Coasts project agreement, March 2018, Zanzibar, Tanzania. **5.** Seapower project: stakeholder engagement workshop, March 2018, Zanzibar, Tanzania.



6. Critical Habitats and MPA Outlook authors' meeting with the Focal Points of the Nairobi Convention, April 2018, Nosy Be, Madagascar. **7.** Fourth International Symposium on the effects of climate change on the world´s oceans (ECCWO), June 2018, Washington DC, USA. **8.** Second authors' workshop, Critical Habitats and Marine Protected Areas Outlook, June 2018, Mombasa, Kenya. **9.** Cities and Coast Project Committee meeting, August 2018, Nairobi, Kenya.

WIOMSA **DIARY 2018**

10. Ninth Conference of Parties of the Nairobi Convention, August 2018, Mombasa, Kenya. **11.** Cities and Coasts project Capacity Building for Impact workshop, September 2018, Mombasa, Kenya. **12.** WIO-COMPAS 10th anniversary celebrations, September 2018, Mombasa, Kenya. **13.** WIO-COMPAS L 109 and L 208 certification event, September 2018, Mombasa, Kenya.

14. The 39th WIOMSA Board of Trustees meeting, October 2018, Seychelles. **15.** Nirmal Shah accepts a "WIO-COMPAS champion" award, October 2018, Seychelles. **16.** Third authors' workshop, Critical Habitats and Marine Protected Areas Outlook, October 2018, Mauritius. **17.** MASMA Programme Committee and Grantees meeting, November 2018, Nairobi, Kenya. **18.** Cities and Coasts Project Committee and Grantees meeting, November 2018, Johannesburg, South Africa.

WIOMSA **DIARY 2018**

19

20

19. Marine organisms' response to climate change: adaption or extinction workshop, November 2018, Mombasa, Kenya. **20.** R Programming workshop, November 2018, Mombasa, Kenya. **21.** Panelists at the Blue Economy Conference, November 2018, Nairobi, Kenya. **22.** Global Monitoring for the Environment and Security and Africa Forum, November 2018, Gabon.

21

22

23. WiMS meeting, December 2018, Nairobi, Kenya. **24.** Nairobi Convention Regional task forces meeting, December 2018, Maputo, Mozambique.

FINANCIAL STATEMENT

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

CONSOLIDATED STATEMENT OF RECEIPT AND PAYMENTS

FOR THE PERIOD ENDED

31/12/2018

	Note	2018 US$	2017 US$
Funds at the beginning of the year	2	860,043	1,895,318
Add Income received			
Other Income	3	1,278,962	1,317,953
Income from Sida	4	4,274,371	1,096,640
Total Amount Available		**6,413,375**	**4,309,911**
Less Payments			
Masma Payments	8	1,519,972	1,765,026
Cities and Coasts Payments	9	136,355	
Other projects Payments	10	1,425,020	1,669,883
Trust fund investment expense	14	39,207	22,125
Total payments		**3,120,554**	**3,457,034**
Surpus/(deficit) for the year		**3,292,821**	**852,877**
Add back Amount transferred to Trust funds		5,239	7,165
Fund balance		**3,298,060**	**860,042**

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2018

1. **BASIS OF PREPARATION OF THE FINANCIAL STATEMENTS**
   i) These financial statements have been prepared in accordance with Cash Basis of accounting in compliance with General Accepted Accounting Principles- GAAP. No Account is taken of income not yet received and liabilities for goods and services remaining unpaid at the end of the financial period.
   ii) Financial statement is prepared under Historical Cost Convention and records are kept on historical cost.
2. **ADVANCE PAYMENTS**
   These constitute overdrawn projects of which its subsequent/final tranches are expected soon.
3. **PROJECT BALANCES**
   These constitute on-going projects/activities with credit balances.
4. **SOURCES OF FUNDS**
   WIOMSA is mainly funded by SIDA under the MASMA program; other donors normally contribute or finance specific activity(s) and last 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.

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

CONSOLIDATED BALANCE SHEET

AS AT 31ST DECEMBER 2018

ASSETS	NOTE	2018 US$	2017 US$
Building		315,268	315,268
Furniture		5,156	5,156
Cash and Bank	5	3,298,060	860,043
Short term Investments	13	1,297,644	1,149,638
Advance Payments	6	212,722	349,948
Sub-total		**5,128,850**	**2,680,053**
Less Projects balances	7	3,260,751	802,504
Total net Assets		**1,868,099**	**1,877,549**
Financed by			
Capital fund	12	320,268	328,043
Trust Fund	11	30,864	25,625
Endownment Fund		1,516,967	1,523,881
TOTAL		**1,868,099**	**1,877,549**

Executive Secretary

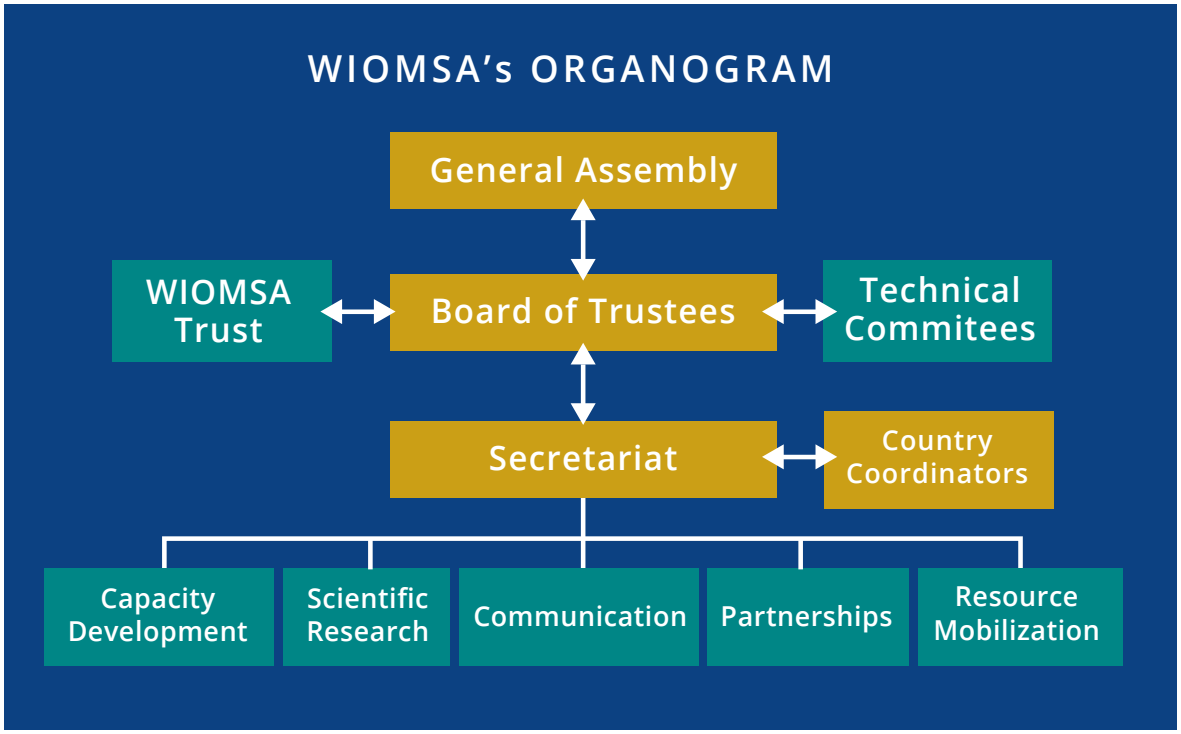
Finance Officer

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2018 (Continued)

5. **TERMINAL BENEFITS**
   All WIOMSA staff are employed on contractual basis and their terminal benefits are taken care of and paid at the end of the contract.
6. **TAXATION**
   WIOMSA being a nonprofit organization is exempted from taxes.
7. **FINANCIAL INSTRUMENTS**
   WIOMSA uses only non-derivate financial instruments as part of its ordinary activities. The financial instruments in operation are such like bank accounts, accounts receivable and accounts payables.

ORGANIZATIONAL **STRUCTURE**

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.



WIOMSA **LEADERSHIP**

BOARD OF TRUSTEES

Dr Jacqueline Uku
(President) Kenya Marine and Fisheries Research Institute, Kenya

Prof Ranjeet Bhagooli
(Vice President) University of Mauritius, Mauritius

Prof Yunus Mgaya
(Treasurer) National Institute for Medical Research, Tanzania

Dr Louis Celliers
Climate Service Center, Germany

Ms Rebecca Loustau-Lalanne
Ministry of Foreign Affairs, Seychelles

Prof José Paula
University of Lisbon, Portugal

Dr Dominique Ponton
Institute de Recherche pour le Développment, Madagascar

Prof Paul Siegel
Boone, USA

Mr Philippe Sauce
La Réunion, France

MASMA PROGRAMME COMMITTEE

Prof Kassim Kulindwa (Chair)
University of Dar es Salaam, Tanzania

Prof Ian Bryceson
Norwegian University of Life Sciences, Norway

Dr Håkan Berg
Stockholm University, Sweden

Dr Pascale Chabanet
Institute of Research for Development, La Reunion

Prof Moenieba Isaacs
Institute for Poverty, Land and Agrarian Studies, University of Western Cape, South Africa

Dr Adriano Macia
Eduardo Mondlane University, Mozambique

Dr Jan Robinson
Third South-West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3), Seychelles

Dr Jorge Santos
University of Tromsø, Norway

Prof Max Troell
Beijer Institute, Sweden

Dr Jesper Vasell
KTH Global Development Hub, Sweden and Kenya

CITIES AND COASTS PROJECT COMMITTEE

Dr Lena Gipperth
(Chair) Gothenberg University, Sweden

Dr Gilbert David
Institut de Recherche pour le Développment, France

Prof Mwakio P. Tole
Pwani University, Kenya

Dr Elin Torrell
Coastal Resources Centre, University of Rhode Island, USA

Prof Coleen Vogel, Global Change Institute, University of the Witwatersrand, South Africa

Prof Pius Yanda
Institute of Resource Assessment, Dar es Salaam, Tanzania

WIOMSA TRUST TRUSTEES

Dr Pascale Chabanet
Institute de Recherche pour le Développment, La Réunion

Kim Gueho
Loita Asset Management, Mauritius

Dr Lena Gipperth
Gothenburg University, Sweden

Dr Magnus Ngoile
University of Dar es Salaam, Tanzania

WESTERN INDIAN OCEAN JOURNAL OF MARINE SCIENCE EDITORIAL BOARD

Prof José Paula
(Editor in Chief) University of Lisbon, Portugal

Dr Serge Andrefouët
Institut de Recherche pour le Développement, France

Dr Ranjeet Bhagooli
University of Mauritius, Mauritius

Prof Salomão Bandeira
Eduardo Mondlane University, Mozambique

Prof Betsy Anne Beymer- Farris
Furman University, USA

Dr Jared Bosire
Nairobi Convention, United Nations Environment Programme, Kenya

Dr Atanásio Brito
National Institute of Fisheries Research, Mozambique

Dr Louis Celliers
Climate Service Center, Germany

Dr Lena Gipperth
Gothenburg University, Sweden

Prof Johan Groeneveld
Oceanographic Research Institute, South Africa

Dr Johnson Kitheka
South Eastern University, Kenya

Prof Kassim Kulindwa
University of Dar es Salaam, Tanzania

Dr Thierry Lavitra
Institut Halieutique et des Sciences Marines, Madagascar

Dr Blandina Lugendo
University of Dar es Salaam, Tanzania

Dr Aviti Mmochi
University of Dar es Salaam, Tanzania

Dr Nyawira Muthiga
Wildlife Conservation Society, Kenya

Dr Brent Newman
Council for Scientific and Industrial Research, South Africa

Dr Jan Robinson
Seychelles Fishing Authority, Seychelles

Dr Sérgio Rosendo
Universidade NOVA de Lisboa, Portugal

Dr Melita Samoilys
CORDIO East Africa, Kenya

Dr Max Troell
Beijer Institute, Sweden

WIOMSA COUNTRY COORDINATORS

Dr Jude Bijoux
Independent Consultant, Seychelles

Dr Sébastien Jacquemet
Université de la Réunion, La Réunion

Ms Cecelia Macamo
Eduardo Mondlane University, Mozambique

Dr Angus Macdonald
University of KwaZulu-Natal, South Africa

Dr. Blandina Lugendo
University of Dar es Salaam, Tanzania

Mr Nadeem Nazurally
University of Mauritius, Mauritius

Ms Vola Ramahery
Nexus Madagascar Company, Madagascar

Dr Saleh Yahya
Institute of Marine Sciences, Zanzibar, Tanzania

Dr Nina Wambiji
Kenya Marine and Fisheries Research Institute, Kenya

SECRETARIAT

Executive Secretary
Dr Julius Francis

Director: Outreach and Resource Mobilization
Dr Tim Andrew

MASMA Progamme Manager
Dr Mathias Igulu

Cities and Coasts Project Manager
Dr Valentine Ochanda

Climate Change Coordinator
Ms Emma Forsberg

Operations & Administration Manager
Ms Lilian Omolo

Communication Manager
Ms Jedida Oneko

Finance Officer
Mr Hamadi Hamadi

Finance Assistant
Ms Yusra Saleh

Messenger
Mr Thabit Mohammed

WIOMSA

Coasts Ocean and People

ABOUT **WIOMSA**

The Western Indian Ocean Marine Science 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.

CELEBRATING 25

WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

Mizingani Street, House No. 734
P.O. Box 3298, Zanzibar, Tanzania.

P +255 24 22 33 472
F +255 24 22 33 852

secretary@wiomsa.org
www.wiomsa.org