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NEWS BRIEF



Parliamentarians from Kenya and Tanzania on a field trip to Mbudya and Bongoyo Islands, Dar es Salaam © ICCF

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ASIA-AFRICA BLUETECH SUPERHIGHWAY PROJECT KICKS OFF WITH TWO KEY MEETINGS

| By Pascal Thoya and Alex Tilley



WorldFish



The Asia-Africa BlueTech Superhighway (AABS) project led by WorldFish was launched in Zanzibar on 3 June 2024. The AABS project brings together partners from the Ministry of Blue Economy and Fisheries Zanzibar (MoBEF), Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) and WIOMSA to transform small-scale fisheries in Zanzibar using digital and data innovations.

The launch workshop gathered key stakeholders from various sectors in the blue economy, including government agencies, fisher organizations and non-governmental organizations. The range of stakeholders underscores the collective approach that the AABS project will take in enhancing fisheries technologies in Zanzibar.

The work packages of AABS will focus on improving coastal resilience and sustainability in two key areas:

- Enhancing small-scale fisheries data and monitoring systems to empower fishers and managers in decision-making.
- Evaluating community incentives for coastal fisheries management and conservation.

The project is built on the idea of South-South collaboration to adapt and scale evidence-based models for delivering impact. The [Peskas system](#),

a pioneering high-resolution, near-real-time monitoring system designed for small-scale fisheries that has scaled from pilot to national adoption in Timor-Leste in southeast Asia, will play a critical role in demonstrating the ways in which new fisheries technologies can be successfully implemented in small island developing states with limited resources.

The honourable Dr Hamad Bakar Hamad, permanent secretary of the Ministry of Blue Economy and Fisheries in Zanzibar, graced the event as the chief guest. Dr Hamad's speech emphasized the revolutionary nature of the AABS project, highlighting its potential to transform fisheries and bring the sector to the forefront of the government agenda by revealing the true contribution of fisheries to Zanzibar's gross domestic product. He also emphasized the benefits of identifying key productive fishing grounds and connecting to potential markets as key to improving fishers' income.

At the launch meeting, Dr Alex Tilley, the AABS Digital Coasts lead, gave some background on the importance of small-scale fisheries for livelihoods and food security on a global scale. He also expanded on the ways in which data and digital innovations have enhanced our ability to monitor and manage these historically invisible fisheries. He introduced Peskas and showcased how open-source technology can make monitoring small-scale fisheries sustainable, even in states with limited resources.

From this initial demonstration of the Peskas system, other speakers including Mr Zahor El Kharousy, Deputy Principal Secretary of MoBEF and Mr Nassor

Abdalla, Head of Fisheries Statistics and Information Systems, Department of Fisheries Development and Marine Resources in Zanzibar, further explored the potential of elements of the Peskas system to enhance fisheries data management, stock assessment and marine spatial planning in Zanzibar.

Dr Arthur Tuda, Executive Director of WIOMSA, highlighted the project objectives and the critical role of collaboration in achieving sustainable fisheries management. He emphasized the need for all stakeholders to work together to realize the project's ambitious goals.



[Read more about the Asia-Africa BlueTech Superhighway.](#)

Project planning meeting

A follow-up meeting was conducted on 4 June to refine the project's activities and gather further input from participants. Dr Alex Tilley led the review of planned activities, highlighting the importance of active participation and feedback. Participants in groups discussed key aspects of the project, including identifying priority fisheries, key landing sites, available datasets and strategies for improving the current Fisheries Data System for Zanzibar (SamakIS).

At the meeting, fisher representatives expressed their apprehension, citing past projects that did not yield direct benefits. They emphasized the need for immediate support to motivate participation. Dr Zakaria Khamis, Director of ZAFIRI remarked on the fishers' concerns and said that the project will take a different approach, including the formation of a planning and coordination committee that comprises representatives from all the stakeholders who will

guide the implementation of the project. He urged the fishers' representative to fully participate in the committee and highlight the fishers' interests, which would enhance their involvement.

Following the meeting's conclusion, a clear roadmap was established for the next steps and a planning committee was formed. Priority actions were identified as:

- the integration of data from fisheries partner organizations;
- focusing on identifying data collectors and their locations; and
- co-designing a monitoring system to serve stakeholders at various levels.

The project planning team identified key domains such as essential fisheries, landing sites and metric reference points for nutrition, production and revenue, along with marine spatial planning.

IMMERSIVE TRAINING ON NATURE-BASED TOURISM IN THE BLUE ECONOMY | *By Sue Snyman*



Coastal and marine tourism represents at least 50 percent of tourism globally. It constitutes the largest economic sector for most small island developing states and many coastal states.

Coastal and marine tourism is highly dependent on the quality of coastal and marine ecosystems to attract visitors, but the continued depletion and degradation of these natural assets is putting the sustainability and viability of the industry at risk, along with the local communities that rely on it. Securing the long-term sustainability and viability of this sector is critical for the continued prosperity of the destinations and communities that rely on it.

Tourism contributes significantly to the blue economy, yet it is understudied and rarely appears in biodiversity economy conversations, especially in the western Indian Ocean (WIO) region. The current model of coastal and marine tourism is inherently unsustainable, characterized by high levels of economic leakage, seasonality and vulnerability to natural and economic shocks. What is needed is good science to inform policies and investments in nature-based tourism (NBT) for the blue economy.

WIOMSA, in partnership with the African Leadership University's School of Wildlife Conservation and the Ministry of Tourism in Zanzibar, therefore convened immersive regional training sessions from 13 to 16 May 2024.

The training focused on bringing together relevant stakeholders in the WIO to present on and discuss, different aspects of NBT within the blue economy. Participants were from eight of the ten WIO countries, including Comoros, Mauritius, Madagascar, South Africa, Mozambique, Kenya, Seychelles and Tanzania, from a diversity of sectors including participants working in private sector dolphin tourism, private sector diving tourism, community-based tourism, government representatives, academia and others.

The training was officially opened by Dr Aboud Jumbe, the Principal Secretary, Ministry of Tourism and Heritage, and the four days of training included presentations by participants on their engagement in NBT in the blue economy, as well as informative

discussions on topics such as private sector NBT, government involvement in NBT, managing NBT in the blue economy, data collection and management, citizen science, development of a roadmap to unlock NBT and lessons learned from NBT in other areas.

A field trip to the Jozani Forest and Mangrove Boardwalk and the Msonge Organic Farm provided an immersive experience for the participants and to discuss the challenges and opportunities which they observed.

One of the outputs from the workshop was to produce a regional report to raise awareness and increase knowledge on the topic of NBT in the blue economy, as well to develop a roadmap to unlock NBT in the blue economy in the WIO, with a plan for consistent, comparable data collection on the topic.

A wonderful network of collaborators was also formed, all inspired to unlock and grow NBT in the blue economy and to raise awareness and increase knowledge in terms of the value of NBT in the blue economy.



Quote from
a participant:

“The event was incredibly informative and inspiring, providing valuable insights into sustainable tourism practices and their impact on the blue economy, which in all honesty... we haven’t been keen on.”

ADVANCING TRANSBOUNDARY MARINE CONSERVATION | *By Violet Asiko and Arthur Tuda*



Key highlights from Dar es Salaam meeting

In a collaborative effort to empower communities while safeguarding ecosystems, a significant summit titled “Legal foundations for transboundary marine conservation” convened in Dar es Salaam, Tanzania from 5 to 6 June 2024.

Organized by the ICCF Group, Legal Atlas, WIOMSA and Macquarie University, the gathering brought together 22 parliamentarians from Kenya and Tanzania, underscoring the regional commitment to marine conservation.

The Honourable Esther Mtiko, Co-chair of Tanzania Friends of Environment (TAPAFE), inaugurated the meeting. Opening remarks were also made by the Honourable Charity Kathambi of the Parliamentary Conservation and Climate Change Caucus Kenya and the Honourable Rozaah Buyu.

Key presentations were delivered by representatives from the Marine Parks and Reserve Unit of the Tanzania, Kenya Wildlife Service, WIOMSA and Legal Atlas. These sessions focused on the progress of the Kenya–Tanzania Marine Transboundary Conservation Area (TBCA), highlighting both the challenges and opportunities in its implementation.

Parliamentarians engaged in robust discussions, addressing pivotal questions concerning the importance of marine transboundary conservation for Kenya and Tanzania. They emphasized the necessity for joint management committees of transboundary resources and sustainable funding mechanisms.

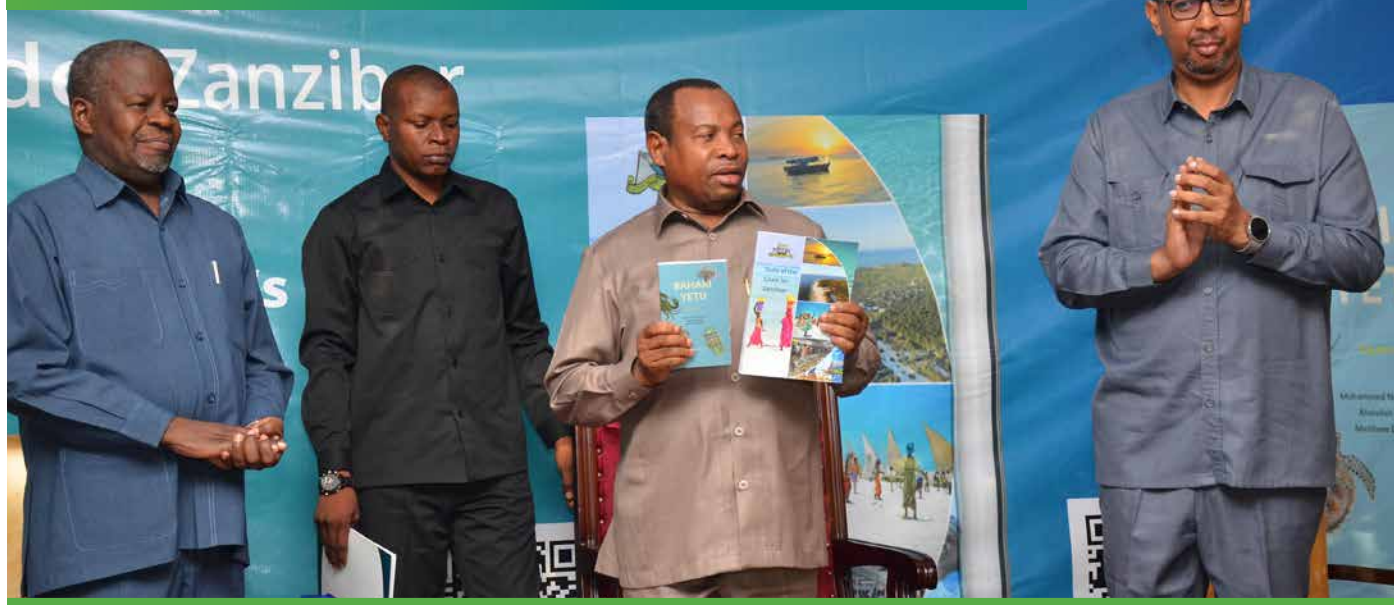
Additionally, the significance of the marine TBCA to local communities and livelihoods, alongside the imperative to harmonize laws between the two countries emerged as key issues requiring attention in the TBCA planning process.

The parliamentarians also visited Bongoyo Island, a protected and uninhabited island under the Dar es Salaam Marine Reserve, where they learned about marine conservation efforts by the community. The meeting concluded with a renewed commitment to collaborative action, recognizing the critical role of legal frameworks in advancing transboundary marine conservation efforts.

LAUNCH OF STATE OF THE COAST REPORTS

| By Julius Francis

Zanzibar and Tanzania both launched their “State of the coast” reports in April and May 2024, respectively.



The First Vice President of Zanzibar, Honourable Othman Masoud, launched the “State of the Coast for Zanzibar” and a Swahili book “*Bahari Yetu*” on 24 April 2024 in Zanzibar.

The “State of the Coast for Zanzibar” provides an overall view of the state of the environment in terms of the current conditions of the critical ecosystems and resources. It also shows how human activities and their interactions with these ecosystems and resources are critical in influencing sustainable development policies and evidence-based planning decisions in alignment with the Zanzibar Development Vision 2050 and its consequent strategies for developing a blue economy in Zanzibar.

Furthermore, “Bahari Yetu” which means “our ocean” in English, was also launched in Zanzibar. *Bahari Yetu* consists of two main parts: the first is a comprehensive introduction to physical processes such as climate, winds and oceanography in the Western Indian Ocean region, and the other is a detailed description of various marine living organisms found in our waters.

Speaking at the launch, the First Vice President emphasized the significance of the publications for Zanzibar.

“As part of the development of a blue economy in Zanzibar, the government has in the past few years initiated several initiatives at different levels of governance from local to regional to national to improve its economy, the well-being of its people and conservation of its coastal and marine environment. This means that the production of these reports is very timely as they will be used as the baseline to assess and evaluate the effectiveness of these strategies taken by the government.”

The “State of the Coast” highlights the importance of coastal and marine resources in Zanzibar’s socioeconomic development. Coastal and marine resources are estimated to contribute about 38 percent of the country’s gross domestic product and employ about 43 percent of the workforce. The fast-growing population, the tourism boom, maritime transport, oil and gas exploration, fisheries sectors and their related value chains offer significant socioeconomic growth opportunities for Zanzibar, though with some risk to key marine ecosystems and resources.

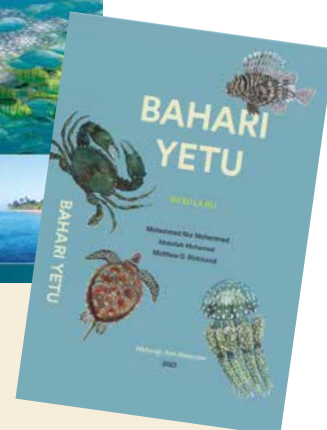
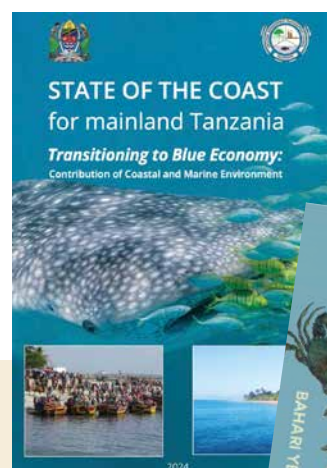
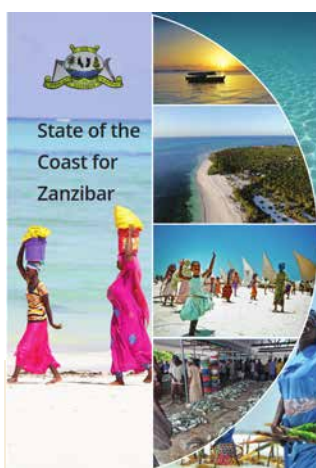
Meanwhile, in Tanzania, Dr Philip Isdory Mpango, Vice President of Tanzania launched the fourth edition of the “State of the Coast” report for Tanzania on 31 May

2024, during the National Environment Management Council 's (NEMC) Conference on Environmental Stakeholders.



The publication “Transitioning to blue economy,” provides an updated baseline on the coastal environment, highlights key blue economy opportunities and describes successes and challenges in managing marine resources. Vice President Mpango congratulated the authors and NEMC, instructing them to translate the report into Swahili for wider public access.

The theme “Transitioning to blue economy: Contribution of coastal and marine environment” is drawn from Tanzania’s national agenda on the blue economy that was first introduced in the second National Five-Year Development Plan 2016/17–2020/21 (URT 2016) and is being pursued in the third National Five-Year Development Plan 2021/22–2025/26 (URT 2021). The publication contains six parts with 19 chapters prepared by a team of academia, managers and practitioners representing a diverse spectrum of coastal and marine environment and associated human activities.



ACCESS THE PUBLICATIONS HERE:

[State of the Coast for Zanzibar](#)

[State of the Coast for Mainland Tanzania](#)

[Bahari Yetu](#)

TRAINING HIGHLIGHTS: MARITIME SAFETY AND COASTAL MONITORING SERVICES

| By Obakeng Molelu, Aina Le Don Nomenisoa and Jonathan Killow



The MarCOSIO team meeting with the Minister of Blue Economy and Fisheries

The Marine and Coastal Operations for Southern Africa and the Indian Ocean Consortium (MarCOSIO) under the Global Monitoring for Environment and Security (GMES) and Africa, held its first regional training workshop in Antananarivo, Madagascar from 19 to 22 June 2024. The workshop was hosted by the Institut Halieutique et des Sciences Marines (IHSM, Fisheries and Marine Sciences Institute).

The regional training brought together policy and technical experts from the western Indian Ocean (WIO) region to present, train users and validate earth observation tools and services developed under the MarCOSIO consortium. The workshop also explored options for integrating these tools into coastal and ocean conservation and governance processes.

The IHSM is one of 12 partners in the consortium and a key link to ensuring the use and rolling out of MarCOSIO services to WIO island states. The team, comprising representatives from South Africa's Council of Scientific and Industrial Research (CSIR),

WIOMSA, IHSM, the Tanzania Fisheries Research Institute (TAFIRI) and the Benguela Current Convention, conducted the training.

"Our science and technology should make an impact on communities, improve livelihoods and save lives," said the Minister of Blue Economy and Fisheries, Dr Paubert Tsimanaoraty Mahatante at a meeting held before the training started.

He voiced his concern about the loss of fishers at sea and the delayed detection of algal blooms that lead to certain fish becoming toxic, which has a catastrophic impact on the food chain and leads to the loss of lives.



Highlights from the training sessions

The training sessions were divided into marine and maritime safety and coastal and ocean ecosystem monitoring. An outreach activity was planned for two schools in Antananarivo.

The training facilitated peer-to-peer learning, allowing participants from the ports sector in Madagascar, Mauritius and Comoros, as well as the Kenya Coast Guard to contribute to the marine and maritime safety training. This was followed by discussion sessions and a day to get to know the vessel tracking system by MarCOSIO, presented by Dr Lizwe Mdakane from the CSIR.

The Director-General of Agence Portuaire Maritime et Fluviale (Agency of ports, maritime and inland water systems) presented in the maritime safety session. He referred to the use of data in safety at sea, port development and management, transport infrastructure development and the integration of reliable and accurate meteorological data in almost all marine transport operations.

In the coastal and ocean ecosystem monitoring sessions, Mr José Victor presented on the marine spatial framework and the process used in Madagascar. PhD student Aro Falinirina from IHSM discussed the 2019 coral bleaching event and emphasized the importance of data from MarCOSIO in assessing the extent of the bleaching.

Participants were also treated to various talks and demonstrations on the continuous collection of data on sea surface temperature, chlorophyll and ocean colour led by the CSIR.

To provide insights on efforts in north and west Africa, the Marine and Coastal Areas Management in North and West Africa consortium, led by the University of Ghana, also presented. Mr Ignatius Williams discussed shoreline monitoring changes, oil spill detection in north Africa, and the rapid land use and land cover change along the coast. Monitoring these changes is crucial for decision-making and ensuring that the information is communicated to affected communities, helping them to understand the dangers of settling in vulnerable locations and the importance of moving to higher ground.

Another highlight of the training was the fishing zones app developed by TAFIRI which has optimized fishing effort, allowing fishers to plan better. It has also provided authorities with data to inform the ways in which they monitor the resources

By the end of the training, participants and ministries expressed their willingness to further implement the services and incorporate aspects of the tools they had learned about into their daily work. The importance of scientific data and information in decision-making and policy was emphasized during both the opening and closing ceremonies, highlighting that much work remains to be done.

Outreach school visits

As part of the outreach and career development programme for children and youth, the Capacity Building and Outreach Work Package representatives organized an event at two schools in Antananarivo: the British School of Madagascar and the elementary school EPP Ivandry. The objective was to inform students about potential careers in earth observation and to educate them about sea and water safety.

Water safety and safety at sea talks with learners at EPP Ivandry elementary school



UPSCALING E-DNA IN THE WESTERN INDIAN OCEAN REGION

| *By James Lusana and Samson Job*



The School of Aquatic Sciences and Fisheries Technology (SoAF) recently transformed into a bustling hub of scientific innovation as marine scientists from across the Western Indian Ocean (WIO) region gathered in Tanzania for a workshop on environmental DNA (eDNA).

This transformative event, which drew experts from Somalia, Kenya, Tanzania, Mozambique, Madagascar and South Africa, was meticulously organized by SoAF at the University of Dar es Salaam in collaboration with NatureMetrics UK, and generously funded by the Western Indian Ocean Marine Science Association.

This workshop aimed to equip participants with the knowledge and practical skills necessary to effectively use eDNA techniques in research and conservation of marine biodiversity.

Prof Nelson Boniface, the Deputy Vice Chancellor responsible for research at the University of Dar es Salaam, opened the workshop. His remarks highlighted the critical role of marine biodiversity conservation and the revolutionary potential of

eDNA technology in biodiversity assessments in the WIO region. Participants were then introduced to the principles and applications of eDNA, emphasizing its ability to detect and monitor aquatic species through genetic material collected from environmental samples.

An adventurous excursion followed, taking participants to Tanzania's Mbudya Island and Kunduchi where they collected water samples from coral reefs, seagrass meadows and mangrove habitats. These vibrant and diverse ecosystems provided a practical context for understanding the complexities of eDNA sampling. The practical experience also highlighted the challenges and considerations involved in collecting eDNA samples, promoting a deeper appreciation for the technology's capabilities and applications.



Back at the laboratory, participants were involved in DNA extraction and polymerase chain reaction. These intensive practical sessions, facilitated by experts from SoAF and NatureMetrics, guided participants through the steps of sample preparation, DNA extraction and amplification of specific genetic markers.

By understanding these techniques participants gained the practical skills necessary to conduct eDNA analyses independently, equipping them with valuable tools for their future research endeavours.

The bioinformatics component of the workshop was equally enlightening. Participants were introduced to various bioinformatics tools and techniques used to analyse eDNA sequences, including data processing, taxonomic profiling and biodiversity visualization. This session demonstrated how raw genetic data could be transformed into meaningful ecological insights, enhancing participants' ability to interpret and use eDNA data for biodiversity assessment.

Collaborative discussions and forward-thinking strategies marked the final day of the workshop. Participants engaged in roundtable discussions,

sharing their experiences, challenges and potential solutions for eDNA applications in the WIO region. The discussions culminated in actionable recommendations aimed at advancing eDNA research and applications, including standardizing sampling protocols, enhancing regional collaboration and exploring funding opportunities for continued research. The workshop concluded with a certificate ceremony, officially marking the end of an enriching and transformative week.

The regional training workshop on eDNA was a resounding success, enhancing the participants' comprehension of eDNA technology and its applications in marine biodiversity assessment. The event not only equipped participants with practical skills and knowledge but also strengthened regional collaboration and laid the groundwork for future eDNA initiatives in the WIO region.

As participants returned to their home countries they took with them the tools, knowledge and inspiration to advance marine biodiversity assessment and conservation efforts, heralding a new era of ecological research and management in the WIO.



2021 United Nations Decade
of Ocean Science
2030 for Sustainable Development

A NEW CHAPTER OF GLOBAL OCEAN ACTION |

By Alison Clausen and Aya Khalil



The **2024 Ocean Decade Conference** held in Barcelona, Spain, from 10 to 12 April 2024 and co-organized by UNESCO's Intergovernmental Oceanographic Commission (UNESCO-IOC), rallied over 4 500 in-person participants and online viewers from 124 countries – the culmination of an Ocean Decade Week (8 to 12 April) which featured over 120 satellite events.

Heads of state, ministers and policymakers, along with representatives from research and academia, the private sector, civil society and sports and arts communities convened to reflect on the progress of the **UN Decade of Ocean Science for Sustainable Development 2021–2030** (Ocean Decade) and set a collective vision for the remainder of the decade.

Titled “Delivering the science we need for the ocean we want” the conference covered the full range of **Ocean Decade Challenges** including climate and marine

biodiversity, natural hazards, pollution and sustainable “blue” food and nutrition from the ocean. The gathering created a new foundation for strengthening the sustainable management of the ocean, driving science-based innovation and growing the ocean economy, from local to global level.

Audrey Azoulay, Director-General of UNESCO highlighted the significant efforts made by the Ocean Decade on the path to a healthy and resilient ocean and called on all parties to pursue this positive momentum.

“Since 2021, much has been accomplished based on our three pillars: understanding, educating, protecting. More than 500 projects are being implemented in around 60 countries and more than a billion dollars has been mobilized. But there is still much that remains to be done,” she said. “We must continue to invest in science, continue to educate, alert and raise awareness. Maximum mobilization is our only alternative to save the ocean.”



The conference's main programme was structured around **four thematic sessions based on groups of the Decade Challenges**. The participants had the opportunity to discuss the Vision 2030 **draft recommendations**, resulting from a year-long **strategic ambition setting process** to identify future priorities for the Ocean Decade in generating ocean knowledge and solutions for:

- biodiversity conservation
- climate change
- food security
- a sustainable ocean economy
- behaviour change, among others.

The conference encouraged exchanges and catalysed initiatives contributing to the major thematic and regional priorities of the Ocean Decade. In particular, the satellite event **"Looking SEAWARD: African Oceans and the Ocean Decade Narrative,"** co-designed by the African Ocean Decade Taskforce and Early Career Ocean Professionals (ECOP) Africa, marked the launch of the Science and Knowledge for a Sustainable Ocean Economy in Africa (SEAWARD Africa) Programme. This initiative will actively contribute to the implementation of the **Ocean Decade Africa Roadmap**, empowering African ocean stewardship through targeted capacity building, innovative partnerships and resource mobilization.

Furthermore, the importance of cutting-edge science and innovation in underpinning marine conservation policy decisions in Africa and least developed countries was highlighted during the plenary session **"Conditions of Success for the Ocean Decade"**, with the participation of Arthur Tuda, WIOMSA's Executive Secretary. The discussions defined key local challenges, including critical knowledge gaps, the lack of a clear process to translate science into policy outcomes, and the need for more investment in science for monitoring and predictions. As one of the next actionable steps, developing frameworks for scaling marine protected area capacity will advance the 30x30 targets in the western Indian Ocean.

The conference ended with a series of major announcements, commitments and collaborations by the Ocean Decade and partners that represent a substantive step in driving the necessary and collective transitions towards ocean sustainability.

Leading the way, the Ocean Decade announced the:

- **Launch of new Ocean Decade Programmes** on sustainable ocean planning and on sustainable ocean management in Africa.
- **Commitment by the Barcelona City Council** and the Port of Barcelona to develop a Decade Collaborative Centre focusing on sustainable ocean economy.
- **Launch of the Ocean Matcher Tool** to enhance opportunities for philanthropic funding to Ocean Decade actions.
- **Launch of new funding opportunities for Africa** through the Belmont Forum and Small Island Developing States through the Marine Institute, Ireland.
- **Launch of the "Cities with the Ocean" platform** to enhance the use of science for policy and decision-making by coastal cities, including the offer of the Qingdao Municipality in China to host the first Ocean Decade Coastal Cities Conference in early 2025.



The main outcome of the conference, the [Barcelona Statement](#), aims to guide the global ocean science agenda and ensure that the science delivered is relevant and understood by policymakers.

It identifies three sets of priorities:

- ocean knowledge and science generation to inform management decisions;
- improved infrastructure, including that for marine pollution monitoring and ocean observations; and
- cross-cutting issues such as co-designing initiatives and embracing all knowledge systems.

The Ocean Decade Conference marked an important milestone leading up to the next step of the global ocean movement: the [third UN Ocean Conference](#) to be held in Nice, France, from 9 to 13 June 2025.

- [Read the full Barcelona Statement: here](#)
- [Read the full conference recap: here](#)
- [Watch the video conference highlights: here](#)

For more information, please contact:
Ocean Decade Communications Team at
oceandecade.comms@unesco.org

DEVELOPING A REGIONAL OCEAN GOVERNANCE STRATEGY FOR THE WIO | *By the Nairobi Convention*

Group photo of participants at the Regional Ocean Governance meeting, Namibia

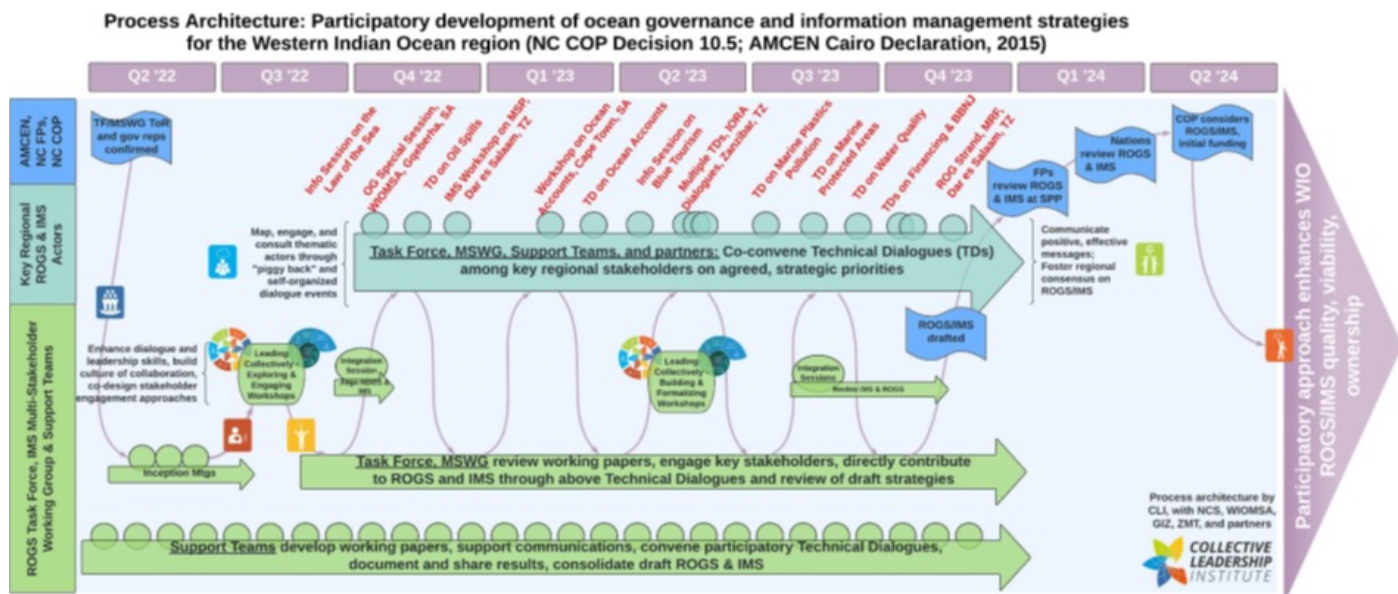


Inspired by and contributing to the African Ministerial Conference on the Environment (AMCEN) Cairo Declaration of 2015, contracting parties to the Nairobi Convention adopted a decision at their tenth Conference of Parties (COP 10) in November 2021 to develop a Regional Ocean Governance Strategy (ROGS) for the Western Indian Ocean (WIO) through a participatory process. The contracting parties to the Nairobi Convention are Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, South Africa, Seychelles, Somalia and Tanzania.

Since May 2022, the ROGS support team has worked with a 24-member multistakeholder task force made up of experts from across the WIO region. The task force includes representatives of the Parties to the Nairobi Convention, the African Union, the Regional Economic Communities, the Indian Ocean Commission, private sector and civil society actors and selected regional experts. It is backed by a support team hosted by the Nairobi Convention Secretariat and comprises experts from WIOMSA, the German development agency, GIZ, and the Collective Leadership Institute (CLI). The support team is dedicated to enhancing collective leadership capacity for the participatory development of the ROGS. It organized the co-development of the ROGS through a series of participatory technical dialogues and information sessions with the ROGS task force.

The task force has been actively involved in co-creating the strategy, focusing on four clusters: maritime security, blue economy, environment and natural resources, and knowledge management and capacity building.

The task force and support team have held a series of technical dialogues and information sessions on a range of topics including the law of the sea; oil spills; ocean accounts; blue tourism; marine plastics pollution; marine protected areas; water quality; financing the strategy; areas beyond national jurisdiction; ports, shipping and maritime security; knowledge management and capacity building; and fisheries, among others.



By addressing social, economic and environmental challenges, the ROGS aims to enhance cost-effective maritime security, information sharing, policy alignment, collaborative fisheries management, habitat conservation and support for a sustainable blue economy. Political leaders in the WIO countries recognize the need for cooperation across sectors and regional organizations, including greater private sector and civil society engagement. The development of the ROGS is a result of a series of policy processes, including the AU's call for an African Regional Ocean Governance Strategy and the 2017 Declaration of the AMCEN.

After a two-year collaborative process, the ROGS support team held a virtual event in April 2024 to wrap up the technical dialogues. The participants included task force members, partners and focal points of the Nairobi Convention. The event emphasized the participatory nature of the process and celebrated the task force members for their commitment.

Highlights included examining the draft ROGS and outlining the next steps for discussion at the eleventh Nairobi Convention Conference of Parties (COP 11) in August 2024.

Regional Governance meeting held in Swakopmund

From June 26-28, 2024, the city of Swakopmund, Namibia, played host to a crucial Regional Ocean Governance meeting, organized by the Nairobi Convention and the Sustainable Environment and Blue Economy Directorate of the African Union Commission. The meeting brought together key stakeholders to address the urgent challenges affecting coastal and marine ecosystems. The meeting aimed to enhance shared learning and develop synergistic approaches to ocean governance across Africa.

The event highlighted the critical need for integrated ocean management to ensure the protection and sustainable use of ocean resources. Discussions focused on harmonizing the Regional Ocean Governance Strategy for the Western Indian Ocean (WIO) region with the broader African Ocean Governance Strategy, fostering collaboration, and promoting sustainable development through effective governance frameworks. Participants included representatives from African Regional Seas Conventions and Action Plans, Regional Economic Communities and Commissions, UNEP Regional Office for Africa, Nairobi Convention Focal Points, and the WIO ROGS Task Force, among others. Key enabling factors in the development of the ROGS included a high-level political

mandate, the selection of task force members by countries and regional organizations, adequate financial support and effective coordination by the Nairobi Convention Secretariat. It has also been a

learning experience; the process faced challenges such as uniting diverse sectors and stakeholders, overcoming institutional fragmentation and bridging online and in-person interactions.



Lessons learnt

Key enabling factors in the development of the ROGS included a high-level political mandate, the selection of task force members by countries and regional organizations, adequate financial support and effective coordination by the Nairobi Convention Secretariat. It has also been a learning experience; the process faced challenges such as uniting diverse sectors and stakeholders, overcoming institutional fragmentation and bridging online and in-person interactions.

Lessons learned from this process include the importance of ensuring continuous capacities, long-term planning, framing questions and providing effective feedback. The task force and stakeholders' involvement has been facilitated through in-person workshops, online sessions and the support of the CLI.

The inclusive and participatory approach fosters ownership and enhances the quality of the ROGS.

Effective regional ocean governance means that WIO institutions, experts, communities, governments and other diverse stakeholders collaborate effectively to advance a shared vision of a healthy, productive and sustainable ocean for the benefit of coastal communities and marine and coastal ecosystems, WIO countries and the region.

Presentation at COP 11

The draft strategy will be presented to the Conference of Parties to the Nairobi Convention on 22 August 2024 at COP 11 for possible adoption. If adopted, implementation will begin in the 2025–2028 Nairobi Convention Work Programme.

For more information about the Draft Western Indian Ocean Governance Strategy, contact Timothy Andrew at email: tim.andrew@un.org

SUCCESSFUL INAUGURAL SEYCHELLES MARINE SCIENCE SYMPOSIUM | *By Jerome Harley and Murray Duncan*



The first Seychelles Marine Science Symposium, themed “A scientific glimpse into the past, present and future” was held from 22 to 23 May 2024 and marked a significant milestone in the nation’s commitment to marine research and conservation.

Organized by the University of Seychelles in collaboration with the Save Our Seas Foundation and several local and international partners, the event brought together scientists, policymakers, conservationists and community leaders. The primary goal was to showcase current research and discuss future research agendas for the region, fostering a collaborative spirit among all stakeholders. Overall, the event highlighted the critical importance of continued research and conservation efforts in the region and underscored the vital role that young researchers and early-career scientists play in driving these initiatives forward.

Seychelles consists of 115 islands scattered throughout a vast ocean with an array of different actors operating in the research space, from government organizations to NGOs to citizen scientists. The symposium served as a crucial meeting point for all these researchers and provided a platform to enhance research cohesion and encourage future collaborations.

Over the course of two days the symposium featured 76 scientific talks over two hybrid parallel sessions and 31 poster presentations, covering a wide range of topics from climate change impacts on coastal zones to marine ecology and fisheries. More than 70 different organizations were represented, underscoring the event’s broad appeal and importance.

Highlights included outstanding keynote addresses from Dr Jose Borrero, Helena Sims, Dr James Lea and Sheena Talma. Additionally, the symposium hosted two special sessions: the SWIOFish3 session, which showcased the outcomes of a six-year scientific research programme supporting Seychelles’ conservation and sustainable development; and The Ocean Project Seychelles session, which shed light on the pervasive issue of plastic pollution throughout the region.



WIOMSA sponsored keynote speaker, Sheena Talma (right), pictured here with her previous MSc supervisor, Dr Jessica Glass (left). Sheena was also sponsored by WIOMSA for her MSc and is currently enrolled at the University of Oxford for a PhD. Image: Sheena Talma

One particularly noticeable aspect of the symposium was the high standard of scientific research being conducted in Seychelles, much of which is being spearheaded by young students and early-career researchers. The enthusiasm and passion for marine conservation among the youth were evident, suggesting a promising future for Seychelles' marine science initiatives.

A noteworthy offshoot of the symposium was a two-day public engagement event led by a group of young ocean advocates called Dekouver Nou Losean. This open day provided a platform for symposium delegates to showcase their research to the public, including many young scholars, fostering a greater understanding and appreciation of marine science among the wider community.

While official feedback from delegates is still being collected, the overall sentiment was that the symposium was not only a success but also a much-needed initiative. Many participants expressed the view that such an event was long overdue.

The success of the symposium would not have been possible without the support of numerous sponsors, including WIOMSA. The organizers believe that the Seychelles Marine Science Symposium has the potential to become a key event in the nation's research calendar and hope to make it a recurring event every three to four years.



Jennifer Appoo (left) receives her prize for best student presentation from Dr Jerome Harlay

AQUATIC RESOURCES AND BLUE ECONOMY CONFERENCE

*By Chrisphine Nyamweya,
Christopher Aura, Fonda Jane Awuor
and Jane Kiguta.*



The Second Aquatic Resources and Blue Economy Conference (ARBEC II) 2024, “Science-Driven Stewardship for a Sustainable Blue Economy,” held in Kisumu City in Kenya from 17 to 21 June ended with significant outcomes and resolutions aimed at advancing sustainable blue economy practices.



ARBEC II, which attracted around 500 participants from across the world from over 30 countries, featured panel discussions, individual presentations, plenary sessions, poster sessions, exhibitions, networking events and field excursions. It brought together key delegates including government officials, researchers, private sector representatives, financial institutions, industry experts and community representatives who deliberated on strategies for the sustainable use of aquatic resources.

The conference sessions were hosted by WWF Kenya (catchment to tap), the Food and Agriculture Organization of the United Nations (FAO)/True Fish, Kenya Marine and Fisheries Research Institute (KMFRI), the United Nations Environment Programme Nairobi Convention (Sustainable Ocean Governance), Gatsby Africa and Aquaculture Business Development Programme and blue economy academia, among others.

The conference included both oral and poster presentations that played a crucial role in exchanging and disseminating governance ideas, research and innovations in the blue economy. Presentation topics covered sustainable fisheries and aquaculture, blue economy policies and governance, community engagement and inclusivity, marine biology and ecology, climate change and oceanography and technology and innovation.

The Hon Salim Mvurya, Cabinet Secretary Mining, Blue Economy and Maritime Affairs, noted that Kenya was a champion of the blue economy and that ARBEC was key to understanding the dynamics of the blue economy.

“Let’s be guided by the principles of science-driven stewardship,” he said. He added that the ministry was committed to developing more landing sites and building capacity for fishers.

Kisumu County Governor, Peter Anyang’ Nyong’o commended the national government for investing KES 1.5 billion (equivalent to around USD 11.5 million) in the blue economy. He said the gesture highlighted the government’s commitment in revitalizing the sector.

KMFRI's Board Chair Hon John Safari Mumba said the institute would continue to support research and innovation for a sustainable blue economy.

"KMFRI will continue to build on its existing expertise through international collaborations," he said, adding that KMFRI is also keen on supporting the inclusion of women and communities in service delivery. He congratulated the KMFRI sponsors, international, regional and local organizers for hosting the successful conference.

KMFRI launches its strategic plan for 2023–2027

On the final day of ARBEC II 2024, KMFRI launched its strategic plan for 2023–2027. The strategy embodies KMFRI's five-year journey for harnessing the blue economy through aquatic research.

Key result areas of the strategic plan include research and innovation, knowledge management and dissemination, resource mobilization and institutional capacity building, improved collaborations and partnerships with enhanced community and private sector engagement. The focus areas seek to enhance the promotion of quality service delivery, efficiency and effectiveness of operations, development of alternative financing options, development of human capacity and enhancement of its capacity, and support systems and good governance. The strategic plan is the basis for the formulation of KMFRI's annual work plans, resource bidding and performance contract targets.

The resolutions and commitments made during the conference will guide stakeholders in their efforts to harness the full potential of aquatic resources while ensuring environmental sustainability and community well-being. The ARBEC II 2024 has set a strong foundation for future collaborations and initiatives aimed at promoting sustainable and inclusive growth within the blue economy.

WIOMSA'S presentation on financing the Blue Economy

Dr. Arthur Tuda, the Executive Director of the Western Indian Ocean Marine Science Association (WIOMSA), delivered a presentation titled *"Blue Economy Financing Mechanisms to Support Emerging Thematic Associations: Lessons Learned from WIOMSA."*

Dr Tuda highlighted the disparity in funding allocation, noting that the ocean economy in the Western Indian Ocean (WIO) region receives significantly less financial support compared to other national economic sectors. He stressed that attracting funding for ocean research requires a strategic approach that underscores the significance and impact of the research.

According to Dr. Tuda, key strategies for securing funding include building strong partnerships and effectively communicating the value of research to potential funders. He urged researchers to highlight the societal, environmental, and economic benefits of their work and to develop compelling proposals that clearly articulate these benefits.

Dr. Tuda's presentation served as a call to action for the research community, emphasizing the importance of strategic communication and partnership-building in advancing the blue economy.

MOZAMBIQUE'S MARINE BIODIVERSITY CONFERENCE BRINGS TOGETHER MORE THAN 6000 PARTICIPANTS

| By Celia Macamo and Natercia Parruque



The second edition of the Marine Biodiversity Conference held on 17 and 18 June 2024 in Nacala-Porto, Mozambique, was a highly successful event bringing together a total of 510 in-person participants and more than 6 000 online participants. Organized by BIOFUND in collaboration with the Ministry of the Sea, Inland Waters and Fisheries and sponsored by several national and international partners; including WIOMSA, the conference highlighted the importance of conserving Mozambique's marine and coastal ecosystems.

The conference focussed on:

Ecosystem-based adaptation: The need for decentralization and an integrated approach as well as the promotion of new sustainable fishing techniques. The importance of involving local communities in the management of marine resources and the need to educate children at school on environmental conservation matters were also central themes.

Marine conservation areas: Challenges in the use of resources in protected areas, the expansion of protected area boundaries and the need for greater funding for conservation projects for marine invertebrates, which have been less prioritized compared to large species, were discussed.

Coastal and marine biodiversity: The importance of public disclosure of research data and conservation reports was highlighted, ensuring sharing, transparency and increased awareness of conservation efforts.

The Minister of the Sea, Inland Waters and Fisheries, Lídia Cardoso, emphasized the need for clear and effective communication for the implementation of conservation measures and the vital role of

sustainable fishing techniques. The President of the Board of Directors of BIOFUND, Dr Narciso Matos, reaffirmed BIOFUND's commitment to mobilizing resources and managing biodiversity conservation. Alexandra Jorge, Programme Director at BIOFUND, highlighted the importance of integrating research themes into these debate events, the results of which are the basis for making management and strategic decisions and the involvement of children in conservation initiatives.

The conference provided a valuable platform for exchanging knowledge, presenting innovative research and strengthening collaboration networks between participants. The recommendations and connections established during the conference will inspire concrete and lasting actions, ensuring a more sustainable future for marine and coastal ecosystems and the communities that depend on them.

The third edition of the Marine Biodiversity Conference in 2025 will be held in Beira in Mozambique's Sofala province.

Watch the event video: 

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KEY LEADERSHIP ROLES IN MARINE POLICY AND OCEAN GOVERNANCE | *By Ian Dean*



A leadership workshop for 40 senior leaders, officials and policymakers in marine policy and ocean governance was successfully completed in Mombasa, Kenya from 27 to 29 May 2024. The participants were drawn from ten countries in the region and staff from the Nairobi Convention Secretariat who had also arranged the programme and logistics.

The unique challenges posed by the mix and diversity of the participants turned out to be a major benefit for building practical skills. The emphasis was on “learning from doing and doing again” until proficiency levels were improved. Multiple sessions were led by the participants themselves, which created excellent opportunities to practice giving and receiving feedback.

The programme selectively addressed key leadership roles and responsibilities such as problem identification and defining, process clarification, resource allocation, context and reality checking and execution for the achievement of results that met or exceeded expectations.

There was also an opportunity for the more experienced participants to model desirable leader

behaviours while the less experienced could challenge conventional wisdoms and approaches. Influencing “upwards” was practiced in simulations that mirrored actual challenges in the region.

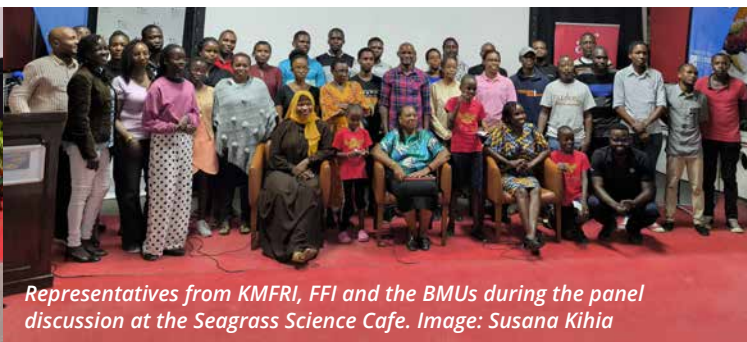
Positive, collaborative attitudes were evident throughout and this contributed strongly to the renewal and forging of new network relationships. The participants all reported that the workshop had exceeded their expectations and illuminated the extent to which they could and should engage at a higher level of leader impact.

The initiative shown by the Nairobi Secretariat Convention staff under the umbrella of the Sapphire Project Capacity Building remit was acknowledged with gratitude by the participants.

AWAKENING CONVERSATIONS AND LESSONS FROM THE SCIENCE CAFES | *By Sarah Ater, Jacqueline Uku, Susana Kihia and Nina Wambiji*



Some participants at the Aquaculture Science Cafe. Image: Levis Sirikwa



Representatives from KMFRI, FFI and the BMUs during the panel discussion at the Seagrass Science Cafe. Image: Susana Kihia

The Seagrass Cafe held to commemorate World Seagrass Day on 1 March had a unique composition of presenters drawn from Kenya Marine and Fisheries Research Institute (KMFRI), Fauna and Flora International (FFI) as well as community members from the Jimbo, Vanga and Wasini Beach Management Units (BMUs).

Science Cafes organized through the collaboration of KMFRI and Alliance Francaise provide a platform for awakening conversations as scientists exchange knowledge with members of the public drawn from different sectors.

The KMFRI presenters provided an opportunity for dynamic conversations on technical components such as seagrass restoration, while the FFI representative dealt with policy issues regarding seagrass. Historical and traditional perspectives were also brought to the fore by the BMU representatives during the discussion panel. It became clear that local communities have great insights and useful indigenous knowledge about their resources and should be included in resource conservation and restoration initiatives in their regions.

Drawing from the learning and experience at the seagrass session a more inclusive approach was adopted for the Aquaculture Cafe. This included the increased use of Kiswahili for engagement and an invitation to a member of the audience to join the discussion panel.

A short film preceded the presentation that was followed by a panel discussion featuring individuals from KMFRI and the Pamoja Pwani Network. Discussions were greatly enriched by contributions from the audience which highlighted the relevance of different cultural activities, including a story about

water ponds and fishing during rainy seasons in the Tana River; the inclusion of indoor water tubs in Lamu homes where fish was used to purify water; and the possibility of exploring local bait knowledge to develop fish feed.

Key lessons learned and experience gained from hosting Science Cafes have taught us:

- to ensure that panellists are drawn from different backgrounds;
- to embed historical perspectives in the discussions as there is a wealth of knowledge hidden in the past that can inform present research initiatives; and
- that the audiences are keen to engage through questions and comments and the use of Kiswahili makes the conversations accessible to most.

The presence of a sign language interpreter at one of the sessions also made us aware of the need to carefully consider who may be left out of these critical conversations and research initiatives. Although the Science Cafes participants have predominantly been young and older adults, there have been some sessions attended by preteens and children. During such instances we have given them an opportunity to add their voices to conversations in the room.

In May, the Science Cafes took a break to focus on the Mombasa Ocean Festival (see separate article).

WAVES OF CHANGE: THE EUNIC MOMBASA OCEAN FESTIVAL

| By Susana Kihia, Sarah Ater, Jacqueline Uku and Nina Wambiji



Dr Jacqueline Uku speaking at the Mombasa Ocean Festival "Blue Talks High Level Panel"

The theme for the 2024 World Oceans Day, "Awakening new depths," successfully drew global attention to the importance of deepening our understanding of the ocean to foster collaborative efforts in ocean conservation.



Reflecting the shared global efforts for ocean awareness, the 2024 European Union National Institutes for Culture (EUNIC) Mombasa Ocean Festival in Kenya celebrated ongoing ocean conservation efforts between 4 and 8 June 2024. The five-day festival was coordinated by Alliance Française Mombasa in close collaboration with Kenya Marine and Fisheries Research Institute (KMFRI), Wildlife Clubs of Kenya and other partners.

Enhancing ocean literacy was a central part of the festival, which included several precursor events such as the ocean concepts educator's training at KMFRI; a student filmmaking training focused on coastal films; school art contests and an ocean photography competition. These activities led up to the first day of the festival which kicked off with the "Students meet Scientists" event held at KMFRI on 4 June 2024. More than 150 students from both public and private schools across Mombasa and Nairobi visited the research institute. Teachers and students from the 13 schools had an immersive day of learning ocean science concepts that was merged with performance, visual and auditory arts.

Each day of the festival provided a range of ocean awareness activities targeting students, teachers, artists, scientists, policymakers and the general community. These included an Indian Ocean underwater photography exhibition, ocean film screenings, live theatre performances and an expert panel discussion that highlighted ocean threats and explored collective solutions to addressing ocean challenges. The culmination of the Mombasa Ocean Festival was an "Ocean Fiesta" on 8 June, World Oceans Day. Held at the Alliance Française grounds the fiesta was a fun family day open to the public and school groups to see the displays, engage in art and play as well as interact with the festival partners at their exhibition booths. That evening a vibrant live performance marked the close of the Mombasa Ocean Festival, which was an exciting fusion of science, culture and ocean inspired art and music.

The 2024 EUNIC Mombasa Ocean Festival was a significant event, drawing participation from both Mombasa and Lamu counties.

The unique merging of culture and art engaged a diverse audience and conveyed the importance of ocean conservation in a creative and impactful manner that contributed to increasing ocean awareness among stakeholders. The design of the Mombasa Ocean Festival with a series of activities such as interactive workshops, film and theatre before the actual Mombasa Ocean Festival week was particularly noteworthy as it provided a platform for shared learning with the next generation about the importance of ocean conservation.

Since the first Mombasa Ocean Festival held in 2022, it has grown and cemented the partnership between KMFRI and Alliance Française, while also broadening

the partnership base to bring on board other institutions. The 2024 Mombasa Ocean Festival is a testament to the effectiveness of partnerships across different sectors to scale ocean awareness initiatives. These collaborations offer a platform for ocean scientists and artists to engage meaningfully in ocean literacy with educators, students and the general public both before and during the festival.

Key lessons learned include that robust and continuous collaborations with various partners, along with deeper engagement, can generate new “waves of change” among diverse groups to lead and practice ocean conservation.



Visiting students learning about seagrass habitats at the KMFRI herbarium during the “Students meet Scientists” event held at KMFRI. Images : KMFRI



STUDY REVEALS HIGH LEVELS OF PLASTIC POLLUTION IN TANZANIAN WATERS | By Asiya Nchimbi



Microplastics were found in more than 60 percent of the fish sampled

*Plastic pollution found on the coast of Kunduchi, Dar-es-Salaam during sampling.
Image: Amina-Asiya Nchimbi*

Microplastics are pervasive pollutants in marine environments. The microplastics originate from various sources, including plastic waste, synthetic textiles and industrial processes. In the western Indian Ocean (WIO) region most microplastics originate from plastic beverage bottles, abandoned fishing nets and clothes.

Once exposed to ultraviolet light, the plastic waste disintegrates into tiny particles of less than 5 mm, called microplastics. **Due to their size, microplastics can be ingested by marine organisms, including commercial fish such as the thumbprint emperor fish (*Lethrinus harak*), locally referred to as “changu”, leading to potential health risks and ecological imbalances.**

The study focused on quantifying and characterizing microplastics in the digestive tracts of *Lethrinus harak* to determine if this species could serve as an indicator of microplastic pollution in East African coastal waters. The fish were bought from different landing sites in Zanzibar and mainland Tanzania and dissected to reveal the abundance of microplastics in the gastral intestinal tract. Unfortunately, the

microplastics were found in more than 60 percent of the fish sampled, causing concern that microplastics could potentially be transferred to humans.

Furthermore, the expansion of trade between Tanzania and Asian countries like China and the growth of small and medium (beverage) industries in the country, exacerbates the microplastic pollution in coastal environments. Poor solid waste management and zero plastic recycling can also lead to plastic pollution in the marine environment.

Addressing plastic pollution is crucial for the sustainable development of the WIO region's coastal areas. Collaborative efforts among stakeholders, including government, private companies and coastal communities are crucial to establishing positive approaches to reducing plastic pollution.



Lethrinus harak (changu)
collected for assessment of
microplastics

Implications for management

While the thumbprint emperor fish shows potential as a biomonitor for microplastic pollution because of its ecological role, the study concluded that it lacks reliability as a consistent indicator. However, the research provides crucial insights into the geographic spread and impact of microplastics on marine life along the East African coast.

Importance of the study

This study is particularly significant as it addresses a knowledge gap regarding microplastic pollution in an underrepresented taxonomic family (Lethrinidae, or emperor fishes) and the East African coastal region. By highlighting the presence and characteristics of microplastics in commercial fish species, the research underscores the need for comprehensive strategies to combat plastic pollution.



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SEAGRASS HABITATS SUPPORT A HIGH DIVERSITY OF FISH LARVAE | By Noah Ngisiange

Seagrass beds are important nursery and spawning habitats for many fish species that provide food and livelihood to people. Yet, little is known about the seasonal distribution of early fish life stages and processes that drive fish larvae growth and survival at a larger spatial scale in coastal Africa.



Research team members during the study inception workshop.

This understanding is important because only about 1 percent of larvae reach adulthood because of high mortality from starvation and predation. To guarantee high fish larvae survival and protect their nursery habitats it is important to know which fish larvae species occur in seagrass habitats and if reproduction occurs year-round or is restricted to certain monsoon seasons.

A WIOMSA-MASMA-funded team of researchers from Kenya, Tanzania and Sweden showed that seagrass beds are used by a high diversity of larvae from fish species that spawn, spanning over 54 different families. These include larvae from fish spawning in the vicinity of the sampling sites (resident spawners) such as wrasses (*Labridae*),

parrotfish (*Scaridae*) and *Acanthuridae*. However, the study also detected larvae from fish species that typically spawn several kilometres offshore, like snappers (*Lutjanidae*) or *Seranidae*.

Fish larvae numbers are, however, relatively low in seagrass meadows. This is attributed to the generally low productivity of these habitats and strong ocean currents and tides that transport fish larvae across adjacent habitats because fish larvae are not able to actively swim against currents. Sample sites in Kenya reached highest abundances of about two individuals per cubic metre, with lower abundances in Tanzania. Overall, primary productivity and dissolved oxygen driven by oceanic currents are positively related to fish larvae productivity in both Kenya and Tanzania.

Most of the fish larvae were observed year-round in these tropical waters. The study did not observe strong patterns related to monsoon seasons and suggests continuous spawning activity of adult species. Larvae from demersal fish species that lay their eggs on the coastal seabed dominated, which indicates that many fish species move to coastal sites for spawning.

The study sampled fish larvae and environmental conditions in seagrass beds at four different areas over a 400 km coastline from northern Kenya to Zanzibar. Sampling of fish larvae was conducted during the two monsoon seasons using ichthyoplankton nets towed behind a boat. Ichthyoplankton are the early life stages of fish, including eggs and larvae that look very different from adults and have different requirements to survive and grow. In parallel, seagrass diversity and

cover were identified, which indicated overall healthy and stable seagrass beds.

Many of the identified fish larvae families were observed in mangrove and coral reef habitats in previous studies. This suggests that many different fish larvae appear in seagrass beds because of current and tidal transport processes, for refuge or feeding purposes.

The study suggests that fish larvae are transported by strong current and tidal processes across adjacent coastal habitats. It demonstrates that a large diversity of different fish larvae occurs in seagrass habitats, emphasizing the importance of protecting and restoring these habitats to support high fish larval productivity for a sustainable blue economy.

The study also detected larvae from fish species that typically spawn several kilometres offshore, like snappers (Lutjanidae) or Seranidae.



*Parrotfish (Scaridae) fish
larvae specimen photo*



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RESEARCH ON RESILIENCE COULD HELP CORALS SURVIVE THE CLIMATE CRISIS

| By Sruti Jeetun



Newly discovered Pocilloporid coral species from Mauritian waters. A: *Stylophora madagascarensis* (morph 1); B: *Stylophora madagascarensis* (morph 2); C: *Pocillopora acuta*

Coral reefs are increasingly threatened by marine heatwaves, worsened by climate change and pollution that lead to elevated sea surface temperatures and subsequent coral bleaching events. Understanding how different coral species respond to these stressors is crucial for effective conservation and management strategies.

A recent study conducted by an international team in Mauritian waters and led by **Ms Sruti Jeetun** under the local supervision of Professor (Dr) Ranjeet Bhagooli and Associate Professor (Dr) Nawsheen Taleb-Hossenkhan at the University of Mauritius, characterized *Pocilloporid* corals, focusing on species from the *Pocillopora* and *Stylophora* genera. Using a combination of morphology and genetics, researchers identified distinct species and their symbiotic relationships with microalgal endosymbionts, crucial for understanding thermal responses.

This study marked the first report of two morphs of *Stylophora madagascarensis* and *Pocillopora acuta* in Mauritian waters, along with the discovery of a unique type of endosymbiotic microalgae from the genus *Durusdinium* known for its thermal resilience.

The findings have significant implications for coral conservation efforts in Mauritius and beyond. By elucidating species-specific thermal tolerances and responses the study aids in predicting how coral populations will fare under future climate scenarios. Effective management strategies can now be tailored to protect thermally robust species like *Stylophora madagascarensis* and *Pocillopora acuta*, potentially enhancing reef resilience.

As marine heatwaves continue to escalate, studies like these provide critical insights into the complex dynamics of coral resilience.

As marine heatwaves continue to escalate, studies like these provide critical insights into the complex dynamics of coral resilience. By combining genetic analyses with physiological experiments, researchers can better equip conservationists with the tools needed to safeguard coral biodiversity in a changing climate.

This research underscores the importance of proactive conservation efforts that consider both species diversity and ecological resilience in the face of ongoing environmental challenges.

The article published in the *Bulletin of Marine Science* presents the results of "Variable thermal bleaching susceptibility among rare, potentially endemic and common Pocilloporids and other corals: implications for management in a warming ocean", a research project partially funded by WIOMSA under a MARG I grant, the Higher Education Commission of Mauritius and the University of Mauritius.

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AI IS PREDICTING CONSERVATION PRIORITIES

...and found poor overlap with current MPA designations in 11 WIO nations | *By Tim Mc Clanahan*

Prioritizing protected areas in the ocean is challenged by the difficulties encountered when surveying the diversity of species beneath the sea. A new approach using high resolution satellite and shipboard information has mapped underwater conservation priorities in 11 nations of the western Indian Ocean (WIO) region. Satellite data is more abundant and more resolved and covers more areas than patchy underwater surveys.



Artificial intelligence algorithms helped to identify 119 priority areas among 7 039 possible coral reef locations in the WIO region.

*Coral Reef, Mayotte Island.
© Gaby Barathieu / Ocean
Image Bank*

Using both data sources and artificial intelligence (AI) algorithms helped to identify 119 priority areas among 7 039 possible coral reef locations in the WIO region. These priority areas overlapped in coverage with only 34 percent of the 208 previously designated marine protected areas in these nations. Consequently, the AI approach identified overlooked potential high priority areas. Past reports were biased in that they were frequently based on reports of more visible species, such as large fish and sharks, marine mammals and seabirds.

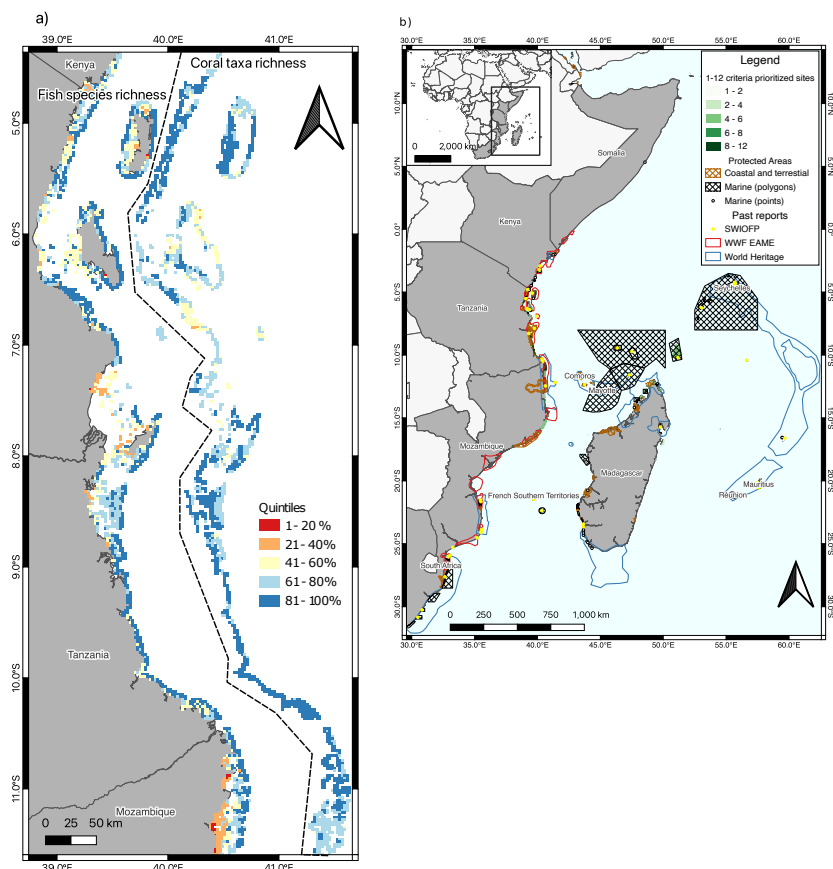
AI predictions were made using more than 30 variables derived from satellite and shipboard databases. These data cover the ocean at the modelled diversity scale of 6.25 km². The model first evaluated 70 ocean and human impact variables before settling on metrics that made the best predictions based on field samples. Using environmental proxies to make predictions allowed mapping diversity in all 7 039 coral reef mapped locations. Of these locations, 119 with the highest diversity for geographic delineations, such as nations, were selected as conservation priorities.

New methods like these can assist in finding a priority area in spaces that are difficult or expensive to sample. Moreover, predictions are at a smaller scale than past efforts and therefore useful for locally managed areas, which are often preferred in poorer African nations that cannot afford the cost of prohibiting fishing in large marine areas.

Remoteness or distance from people has been an important criteria of past selection methods but the AI method controls for human effects. Therefore, already impacted locations with potentially high diversity can be identified by the AI methods. This allowed for the identification of impacted areas with high potential to recover with renewed management and conservation efforts.

Key points

- Satellite and shipboard environmental data were able to predict the number of marine species in 7 039 locations in 11 nations.
- AI models predicted many new high species diversity conservation priority areas.
- AI models could account for the overriding effect of fishing, which allowed selections of conservation priorities in human impacted sites.
- Poor overlap was found between AI model predictions and currently designated MPAs and past consultancy-based selections.
- The AI model allowed predictions for small protected areas that are increasing with local community-based management projects.



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A NEW CHAPTER OF GLOBAL ECOPS ACTION

| By Frank Mirobo



Photo credit:
© Tidal Wave - BIMS

The 2024 Ocean Decade Conference from 10 to 12 April 2024 in Barcelona, Spain, convened the global Ocean Decade community and partners to commemorate achievements, assess progress and collectively outline future priorities.

The 2024 Ocean Decade Conference from 10 to 12 April 2024 in Barcelona, Spain, convened the global Ocean Decade community and partners to commemorate achievements, assess progress and collectively outline future priorities.

Focussing on pivotal questions of the Ocean Decade, the conference delved into the major milestones achieved since its inception and the critical areas requiring action over the forthcoming three to five years, marking the fourth year of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030).

The Western Indian Ocean Early Career Scientists Network (WIO-ECSN) is recognized as one of Africa's vibrant youth networks and has collaborated closely

with the Tidal Wave programme of Black in Marine Sciences to highlight the pivotal role of Early Career Ocean Professionals (ECOPS) in spearheading the advancement of the UN Ocean Decade Agenda 2030, with a keen focus on Africa and the WIO region.

Following the UN Ocean Conference, WIO-ECSN in collaboration with various partners will embark on the "Many Faces Programme." This initiative is dedicated to fostering diversity, inclusivity and innovation among African youth in tackling the ten challenges of the UN Ocean Decade and promoting ocean literacy. This endeavour aims to forge connections between ECOPS across Asia and Africa, fostering a collaborative approach to ocean conservation and sustainability.

VIRTUAL ECOPS DAYS 2024 | *By Susana Kihia*



Running alongside the UN Ocean Decade conference in Barcelona, Spain, the virtual Early Career Ocean Professionals (ECOPS) Days 2024 engaged a global audience for a livestream event from 9 to 11 April 2024. The three-day event gathered over 500 attendees and showcased more than 100 ongoing science-based actions from 56 countries contributing to ocean sustainability.

The African and Western Indian Ocean region was represented in the virtual ECOPS Days proceedings with a range of speakers' presentations centred on marine ecosystem restoration, food security, marine pollution and ocean literacy. To integrate the livestream with on-site conference proceedings, the unique programming of the virtual ECOPS Days also included a range of interviews with conference delegates with journalists.



**READ ABOUT THE VIRTUAL
ECOPS DAYS:**

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As a journalist, I interviewed several ocean researchers, leaders and professionals at satellite events and the main conference, among them Dr Arthur Tuda, Dr Nadeem Nazurally, Dr Jacqueline Uku, Shamin Nyanda and Frank Mirobo.

Some of the notable skill sets ECOPs can leverage in the Ocean Decade that I identified during the interviews included ocean awareness raising, strategic ocean science communication, marine entrepreneurship, ocean diplomacy and leadership and the innovative adoption of technology.

RIDE THE WAVE: A TIDAL WAVE OF FELLOWSHIP FOR BLACK VOICES IN MARINE SCIENCE | *By Frank Mirobo*

The Tidal Wave programme is a cornerstone of the core initiatives of Black in Marine Sciences dedicated to amplifying black voices within marine science. This transformative programme extends a distinctive opportunity to individuals of colour, granting them access to premier global conferences without financial burden and nurturing professional advancement, forging valuable connections and cultivating a diverse scientific community on an international scale.



Photo credit: © Tidal wave- BIMS

As a member of the inaugural cohort of the Tidal Wave fellowship from Africa, specifically the Western Indian Ocean region, this programme has not only fortified continental alliances beyond African borders but has also provided me with invaluable insights, shaping my career trajectory as a dedicated young researcher committed to championing diversity and inclusivity within the marine sciences field.

To enhance the representation and enrich the experiences of black marine scientists at international scientific gatherings, the programme has extended its support to over 50 students, as well as early and late-career ocean professionals from around the globe, including Africa.

This support has enabled these individuals to showcase their research endeavours at prominent events like the United Nations Ocean Decade Conference. Moving beyond the challenges of isolation and exclusion often faced by early career ocean professionals of African descent during conferences, the Tidal Wave Programme strives to instil participants with heightened confidence and a sense of inclusion. By equipping them with new skills, ample resources and a supportive cohort, the aim is to empower them to actively contribute to the co-design and innovation of inclusive ocean initiatives for all.

YOUNG OCEAN LEADERS AND EARLY CAREER SCIENTISTS ENGAGE WITH GLOBAL ECOPRENEURS AND OCEAN EXPERTS | *By Ailars David*

The Ocean Youth Leadership Summit in Athens, Greece, provided a platform for young ocean leaders and early career scientists to engage with global ecopreneurs and ocean experts, exchange ideas and develop innovative solutions to address the pressing challenges facing our oceans.



Photo credit: © SOA_OOYLS24

Focussing on areas such as sustainable tourism, green shipping, marine pollution reduction, marine protected areas and green transition in the Mediterranean, the summit aimed to empower youth to play an active role in shaping a sustainable future for our oceans.

Organized by the Sustainable Ocean Alliance (SOA) in cooperation with Our Ocean Greece and with support from the Ministry of the Environment and Energy of Greece, the event marked a significant milestone in my journey towards ocean conservation.

As a marine scientist and conservation warden in Tanzania, this event empowered me and other young

leaders to develop solutions for ocean conservation through meaningful discussions and collaborations. I gained valuable insights into different approaches to ocean conservation and learned about innovative initiatives taking place in various regions. I shared insights from my work at Mafia Island marine protected area (MPA), highlighting the country's innovative approaches to marine conservation.

One of the most inspiring aspects of the summit was the opportunity to connect with fellow delegates across the globe and reinforcing the need for immediate collective action in saving our oceans.

JAPAN TO PALAU: ECOPS TAKE PART IN OCEAN RACE

| By Mwesigwa Mbeikya

Early career ocean professionals (ECOPS) across the globe embarked on a 14-day journey from Yokohama in Japan to Malakal in Palau, crossing the Pacific Ocean as they participated in the Japan–Palau Goodwill Yacht Race from 10 to 25 March 2024 onboard the majestic ship *Miraie*.



This International Ocean Human Resource Development Project was organized by the Ocean Policy Research Institute of the Sasakawa Peace Foundation.

The journey was not only an adventure but also a pivotal step in fostering the next generation of maritime leaders when 20 enthusiastic young professionals from nine different countries were brought together to share knowledge and experiences. The programme was meticulously designed to blend practical sailing skills with in-depth oceanographic studies. We engaged in ocean-related lectures, sail handling and setting, while also delving deep into critical issues such as ocean acidification, marine plastics and declining fish stocks. This comprehensive approach

provided us with a practical learning experience that significantly enhanced my skills.

We were also able to conduct environmental monitoring protocols, adding a valuable scientific dimension to our voyage. Learning from Dr Mikuni Nariaki, a Japan International Cooperation Agency expert and chief advisor on sustainable practices and the significance of skipjack tuna, expanded my knowledge immensely.

There is a chance for other early career ocean professionals to attend the programme again this year. The Sasakawa Peace Foundation and the Ocean Policy Research Institute are committed to continuing this initiative, recognizing its impact on developing future leaders in ocean conservation.

WIO-ECSN MEMBERS APPOINTED TO YOUTH SOUNDING BOARD | *By David Ailars and Laurian Kaijage*

David Ailars

is a marine scientist and marine conservation warden at Mafia Island marine protected area is also the founder and hub leader of Sustainable Ocean Alliance (SOA) Tanzania and the current Tanzania country coordinator for the WIO-ECSN. He has played a pivotal role in engaging Tanzanian youth and local coastal communities in ocean conservation and promoting a sustainable blue economy.



Laurian Kaijage

is also a marine scientist, works with the Mwambao Coastal Community and is a hub leader at SOA Tanzania. Laurian's work in marine research and community engagement has advanced local conservation initiatives and fostered sustainable practices among coastal populations.



The two appointees will advise the EU Ambassador to Tanzania and the east African community on youth participation and empowerment in key areas, including the blue economy, human capital and employment and governance.

We congratulate David and Laurian on this significant achievement and look forward to the positive contributions they will make to the EU Youth Sounding Board.

WHERE IS THE MONEY FOR CONSERVATION?

| By *Nirmal Shah*

Biodiversity conservation remains severely underfunded, a fact that is in danger of becoming a cliché. The conservation funding gap is thought to be about USD 700 billion a year between now and 2030. Ironically, more than half of the global gross domestic product is reliant on healthy and diverse nature. Somehow that value proposition has not been properly made.

How do we leverage funding to do better this time around?

Popular solutions being touted include biodiversity credits, but the biodiversity credit market is in its infancy. There is a need for third-party oversight to ensure credibility and integrity. As with carbon markets, there are concerns about transparency and neglecting communities' rights or even exploiting the communities. **Establishing effective monitoring mechanisms and addressing the diversity of biodiversity are significant challenges for the market. And the struggle to prevent greenwashing is real.**

A new push, and I really mean push, is for the creation of "nature-positive businesses". We were all excited when the Global Fund for Coral Reefs (GFCR) was announced, but the GFCR is meant for the private sector because it provides "support for sustainable businesses to improve the resilience of coastal ecosystems, economies and communities." Nevertheless, my organisation (a non-governmental organization) and two other non-profit organisations (NPOs) and a parastatal were invited to be part of a project for Seychelles. The implementing agency had not understood the GFCR and we spent several months developing a project. However, we were then



told that the first small grant was just start-up funding and after 18 months we were supposed to turn a profit. All three NPOs pulled out, having wasted valuable time and intellectual capital.

The new vision of the for-profit approach as a sustainable and effective source of funding is translated into concepts such as impact investing, blended finance, green and blue bonds and so forth. Many of these solutions are debt instruments, which pose problems for already highly indebted African countries and commercial entities. The Seychelles' much touted Blue Bond, for example, has had mixed success despite the continued hype – the grant component has been quite successful in terms of uptake, although impact has not been calculated yet, but the commercial part (which consists of loans) much less so, with a well-established and successful fish processing enterprise being the only entity to take it up.

An extreme danger with the focus on "blue businesses" is that NPOs may be pushed to become profit-making enterprises and thus violate their purpose-driven mission which society desperately needs. Pundits like to tell me that NPOs can help for-profits in their work. This may work in some countries but my own experience is that the intellectual capital that NPOs hold is not adequately valued and they end up being used as cheap labour by the private sector.

The answer is to build the value proposition

So, what is the answer to bridge the funding gap so that we can continue our work in conservation and restoration? The answer is to build the value proposition.



Dr Nirmal Shah is known in the region as a multidisciplinary biologist, environmentalist, educator and activist. He was a founding board member and past President of WIOMSA as well as Chair of the Programme Committee of MASMA.

One of the ways to leverage this proposition is for governments to urgently redirect USD 500 billion of harmful subsidies that are eroding or destroying nature toward biodiversity and use that as co-funding to attract donor grant funding. A total of 196 countries agreed to redirect subsidies to do this when they adopted the GBF.

The Opinion is written by WIOMSA members, partners and readers of the WIOMSA Newsbrief. Writers express personal opinions and views on topical issues of regional importance.

The column provides the opportunity for WIOMSA members and partners to discuss, debate and propose solutions to the critical issues that face the region. The opinions, beliefs and viewpoints expressed in this opinion are solely the authors' own and do not reflect WIOMSA's view or official policies of the Association.