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**Western Indian Ocean Regional Science
to Policy Workshop**

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**MEETING REPORT FOR THE WESTERN INDIAN OCEAN REGIONAL
SCIENCE TO POLICY WORKSHOP**

HISTORICAL BACKGROUND TO THE WESTERN INDIAN OCEAN SCIENCE TO POLICY DIALOGUE

At the fourth Conference of the Parties (COP) of the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean Region (the Nairobi Convention) held in Antananarivo, Madagascar, in July 2004, the Secretariat of the Convention (UNEP) was directed to facilitate the establishment of a network of academic and research institutions in the Convention area in collaboration with other organizations. The Network would be a "consultative, communication and advisory body accountable to the Contracting Parties of the Nairobi Convention in the assessment and science-based management of marine and coastal environment."

The decision was taken to address the challenges of linking research and academic institutions with decision-making processes at the regional level. The Nairobi Convention Secretariat was directed to "take the offer made by the Western Indian Ocean Marine Science Association (WIOMSA) to serve as the Secretariat of such a Network," a role which WIOMSA has and continues to play in an exemplary manner.

To address the request from Contracting Parties, the Convention established the Forum for Academic and Research Institutions (FARI) in 2004 with WIOMSA playing the Secretariat role of hosting the Forum. The Forum is comprised of experts from academic and research institutions in the region with a mandate in marine sciences.

Subsequently, the Contracting Parties to the Nairobi Convention have adopted various decisions at the Conference of Parties (COP) to strengthen the link between science, policy, and action to enhance informed decision making for the management of coastal and marine resources in the WIO region. Some of the decisions include Decision CP 4/ parts 3 and 4, which directed the Secretariat of the Nairobi Convention, in collaboration with other organizations, to facilitate the establishment of the Network of academic and research institutions in the region; Decision CP 7/17, which requested the Secretariat to hold and encourage partners to support regular science to policy dialogues; Decision CP 8/12, which requested for the establishment of a dialogue platform, and Decision CP 9/12, which further requested the Secretariat to convene regular science-policy dialogues.

The Project 'Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities' (WIOSAP) seeks to support the establishment of a Science to Policy Forum. At the same time, the 'Western Indian Ocean Large Marine Ecosystem Strategic Action Programme Policy Harmonization and Institutional Reforms' (WIO LME SAPPHERE) Project proposed a Science and Technical Advisory Panel (STAP) to serve a similar purpose. In June 2019, the joint meeting of the Project Steering Committees (PSC) for the two GEF-funded projects, approved the establishment of a Science to Policy Platform (SPP) at the Convention level. The ACP MEAs 3 programme on Enforcing Environmental Treaties in African, Caribbean and Pacific (ACP) Countries (Nairobi Convention) is implementing a series of activities that will directly benefit from the science to policy dialogue. The programme will in particular, enhance partnership to address priority marine and coastal issues linking policy makers and key stakeholders in the fisheries and environment sectors, support development of the Western Indian Ocean region ocean governance strategy, harmonize approach of Blue Economy initiatives, identify priority issues and define policy dialogue indicators relevant to fisheries- and marine environment-related interventions, including in Marine Protected Areas, and Marine litter action plans.

THE 2021 WESTERN INDIAN OCEAN REGIONAL SCIENCE TO POLICY FORUM

Main objectives of the meeting

The overall objective of the Western Indian Ocean (WIO) regional Science to Policy Workshop was to promote the linkages between science and policy for evidence-based decision-making and provide timely technical advice and policy recommendations. The 2021 workshop was themed '*Transition to a Sustainable Western Indian Ocean Blue Economy: Addressing the challenges and seizing the opportunities.*

Specific objectives of the meeting:

- Review of the discussion papers on topical emerging scientific findings with potential policy implications for the management of coastal and marine resources in the region.
- Presentation of progress in the development of various regional strategies and frameworks under the Nairobi Convention for technical input.
- Promote engagement and networking among various stakeholders engaged in the protection, management and development of marine and coastal resources in the WIO.

Expected Outputs:

1. Policy recommendations for consideration by Contracting Parties of the Nairobi Convention.
2. Validation of various strategies and frameworks under development for the WIO region.
3. Strengthened partnerships between technical experts and policymakers.

SUMMARY OF RECOMMENDATIONS

Thirty three papers were presented in the course of the 3-day workshop focusing on:

- Ocean Finance: financing the transition to a sustainable Ocean Economy'
- Climate change adaptation and mitigation
- The role of the private sector in the management of plastics as an environmental challenge
- Establishing and managing area-based conservation measures
- Regional Ocean governance: Emerging issues/frameworks

POLICY RELATED RECOMMENDATIONS

1. Ocean Finance: Financing the Transition to a Sustainable Ocean Economy:

- i. Set up and implement new common guidelines and principles that help define what sustainable investment in the ocean economy would look like and strengthen knowledge, data and capacity in ocean health and finance, including exploring new financing mechanisms and tools, that can stimulate the pipeline of investible sustainable projects.

2. Assessment and conservation of critical habitats and endangered species:

- ii. Enhanced awareness on services of the deep-sea ecosystems to Member States, establish a deep-sea working group to lead the advancement of deep-sea research

and data usage in the WIO, and continued strong representation of Member Countries in the BBNJ negotiations considering that deep sea is valuable for their prosperity.

- iii. Enhance the prioritization of coral reefs within Marine Spatial Planning and sustainable blue economy processes, and stimulate support for national policy processes related to coral reef and marine ecosystem conservation and sustainable management e.g., national coral reef action or management plans and strategies
- iv. Call on the Nairobi Convention Contracting Parties to develop a regional mangrove vision and strategy framework to facilitate the mainstreaming of mangroves in development planning, including establishing a regional Advisory Group supporting a regional policy dialogue on mangroves on conservation goals, commitments and priority needs.
- v. Promote the protection of threatened sharks and rays in the Western Indian Ocean and request member states to implement their binding commitments to multilateral agreements to which they are party.
- vi. Undertake a technical review of current underwater noise pollution on marine life due to economic development in the Nairobi Convention area and develop mitigation policies.
- vii. Strengthen regional regulatory frameworks and national capacity for handling marine biodiversity data in the region, including strengthening national data centers to collect, analyze and share oceanographic data and information.
- viii. Contracting Parties to adopt and implement an ecosystem monitoring framework to standardize data gathering for regional monitoring of priority indicators in the Western Indian Ocean
- ix. Contracting Parties to adopt the strategic framework for marine water quality management in the Western Indian Ocean for implementation of the Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities.

3. Climate change adaptation and mitigation

- x. The Nairobi Convention secretariat, working with partners to build capacity and integrate climate risk into coastal city planning and development.
- xi. Parties when undertaking national MSP, marine conservation planning and blue economy initiatives such as large-scale developments of ports, and oil and gas, to improve the effectiveness of marine protected areas across the WIO region and to prioritise areas identified climate refugia.
- xii. Contracting Parties are urged to develop and implement mitigation and adaptation solutions to address and minimize impacts of Ocean acidification as part of their wider climate change intervention strategies including prioritizing solution-oriented Ocean acidification research to help countries achieve SDG target 14.3, which aims at minimizing the impacts of Ocean acidification.
- xiii. The Nairobi Convention secretariat working other partners to support the development of a regional strategy for capacity building, amongst scientists, policy makers and ocean users focused on Ocean acidification

4. Area-based conservation measures

- xiv. Request the Government of Kenya and the Government of Tanzania to strengthen the collaborative approach for a sustainable blue economy in transboundary

- conservation of marine ecosystems in the Kenya-Tanzania transboundary marine system
- xv. Develop a regional strategy for implementation of an effectively and equitably managed marine protected areas network in the Western Indian Ocean.
 - xvi. Develop and adopt a regional and systematic marine protected area network (MPAN) planning and implementation framework to support the development of national MPANs and formation of corresponding institutional arrangements and structures.
 - xvii. Develop and adopt a national MPAN monitoring and evaluation framework, including regular capacity building initiatives, ensuring individual marine protected areas are effectively managed and are contributing to maintaining ecological function of the MPAN.
 - xviii. Mainstreaming community managed marine areas into the Western Indian Ocean's governance and legal frameworks for supporting small scale fisheries management
 - xix. Enact policies and programmes that promote region-wide scale and integration of systems and networks of effective protected and conserved areas into marine spatial planning, climate change adaptation programmes and other nature-based solutions for ecosystem protection and restoration, including regional and transboundary processes as well as for the development of a blue economy.
 - xx. Member states are encouraged to develop practicable national responses to the overall implementation of SDG 14.5 and the new biodiversity target 30% by 2030 and to integrate marine protected areas (MPA) within broader marine spatial planning frameworks and apply systematic conservation planning to address MPA design issues, representatively, and connectivity.
 - xxi. Identify complementary financing sources (e.g., sustainable tourism, nature-based solutions, biodiversity offsets) should be and encourage broader stakeholder engagement to sustain MPA management.
 - xxii. Develop criteria and guidelines as part of the regional MSP implementation process to accommodate current and future transformations caused by social, economic, political and climate change events to minimize the negative impacts of protected area downgrading, downsizing, and de-gazettement (PADDD).

5. Regional ocean governance: emerging issues and frameworks

- xxiii. Develop a WIO regional plan of action by the Parties to the Nairobi Convention to address IUU fishing and achieve recognition and agreement by the Parties to the Nairobi Convention that IUU fishing greatly undermines the ability to sustainably manage ocean and coastal resources.
- xxiv. Develop a city circular economy strategy, mapping circular economy opportunities including livelihood opportunities for local communities; transportation planning and infrastructure, innovative plastic waste solutions; resilient and anticipatory planning, and systematic interventions with respect to recycling infrastructure and processes.
- xxv. Urge contracting parties to enhance their operational environment to maximise gains in blue economy by strengthening and integrating blue economy governance and planning in waterfront development, ports, and maritime trade in the WIO region.

- xxvi. Urge countries of the Nairobi Convention to ratify and adopt the marine spatial planning strategy to achieve improved governance of the WIO.
- xxvii. Contracting Parties are encouraged to adopt the strategic framework for engagement of the private sector in the Western Indian Ocean including the feasibility of a WIO Blue Economy Platform (WIO-BEP) to support effective private sector partnerships in coastal and ocean stewardship.
- xxviii. Request the Nairobi Convention Secretariat to facilitate, together with partners, continued dialogue with the Regional Economic Communities (REC) and Regional Fisheries Bodies in the WIO and other stakeholders on the i) establishment of a regional Ocean Governance Taskforce or Coordinating Structure, ii) to develop a roadmap towards strategy development, iii) to develop a regional Ocean Governance strategy for the WIO by March 2022.
- xxix. Incorporate scenario approaches into strategic interventions, and project development at the local, national, and regional level adapting to Covid-19 recovery and by building of resilience of people and ecosystems to withstand future shocks.
- xxx. Develop a high-level integrated ocean and coastal management strategy for the WIO, incorporating the principles of both ICM and MSP, the targets of the SDGs, and to identify a set of indicators to monitor the state of the coastal-ocean systems to understand the flow of benefits from the Blue Economy,
- xxxi. Stakeholders in the WIO to consider adopting an approach that ensures that open-data principles are the default for sharing of marine data and to regularly publish updates on gaps and quality issues in the data, information and knowledge available.
- xxxii. Provide and extend regional monitoring programme on marine litter and microplastics to all WIO countries as a response to economic consequences of unmanaged plastics, the role of the private sector in the management of plastics, and to ensure coordinated and harmonised protocols and reporting units within WIO and among other regional programmes to support implementation and enforce stricter international regulations (to e.g., reduce litter released from land-based activities, and ensure adherence of ships to MARPOL).

SUMMARY OF RECOMMENDATIONS

A summary of 2021 Science to policy recommendations was presented by Dr. Timothy Andrew, Nairobi Convention secretariat.

CLOSING REMARKS

Closing Statement – Mr. Jared Bosire, WIOSAP, Nairobi Convention Secretariat

1. Mr. Jared Bosire lauded the productive 2021 Science to Policy Workshop and appreciated the participants' responsiveness in adjusting to the new way of holding meetings which registered between 130 -170 participants in the three-day virtual meeting.
2. From the summary of recommendations, it was noted that a number of the papers were addressing past Nairobi Convention Conference of Parties (COP) decisions while several others had proposed policy decisions for the contracting parties. The recommendation would be presented to the contracting parties for consideration at the 10th COP.
3. Mr. Bosire concluded by thanking all partners and institutions who made the meeting successful and assured that the Nairobi Convention Secretariat would always be ready to

facilitate strategic partnerships required by its partners in promoting sustainability across the region.

Closing Statement – Sinikinesh Beyene Jimma, Chief, International Waters Unit, UNEP

4. Ms. Sinikinesh congratulated the organisers of the 2021 Western Indian Ocean Science to Policy Dialogue, session moderators, presenters, partners, Contracting Parties, and WIO working groups for making the meeting a success. In addition to creating a platform for dialogue between scientists, policymakers, and practitioners, the findings and recommendations would also refine decision-making processes, policy formulation, and design, both nationally and regionally, and would eventually promote sustainable blue economy growth in a post-COVID recovery.
5. UNEP supports the Nairobi Convention Secretariat to deliver its mandate and would continue to support, collaborate, and partner with the Secretariat and all other Secretariats under its umbrella to address the three planetary crises: (i) climate change, (ii) biodiversity, and (iii) habitat loss and pollution.

Closing statement – Prof. James Njiru, representative of the chairperson of the Bureau of Nairobi Convention and Director, Kenya Marine and Fisheries Research Institute

6. Prof. James Njiru expressed gratitude to all speakers, moderators, the Secretariat of Nairobi Convention, and all participants. He noted that the meeting had been fruitful despite being virtual. He echoed that the Science to Policy dialogue occurred early in the Ocean Science Decade 2021-2030.
7. While noting that WIO region countries had encouraged the setting up of common guidelines and their implementation, and had established principles that defined what sustainable investment in the ocean economy looks like, Prof. Njiru emphasized that the WIO countries needed to continue having representation in the negotiation of BBNJ areas. He also emphasized the critical role of co-management of coastal and marine resources, saying that communities are key for conservation, management, and implementation of science locally. He also underscored the importance of the private sector's support and the need for collaboration among ministries, financing, and coastal cities in addressing climate risks in city planning and development.
8. On behalf of the Government of Kenya, he expressed commitment in the implementation of SDG 14 to realize a sustainable Blue Economy, protection of natural habitats by reducing plastics and marine litter and ensuring the environmental impact of infrastructural projects are well managed.
9. Prof. Njiru officially closed the 2021 Western Indian Ocean Science to Policy meeting on Thursday 25 March 2021 at 13:10 hours (EAT).

DETAILED REPORT OF THE SESSIONS OF THE SCIENCE TO POLICY WORKSHOP

SESSION I

Introduction to the Science- Policy Workshop- Mr. Dixon Waruinge, Head of the Nairobi Convention Secretariat.

10. The first session was the official opening of the 2021 Western Indian Ocean Science to Policy workshop, chaired by Mr. Dixon Waruinge, Head of the Nairobi Convention Secretariat. Dr. Jacqueline Uku, President of Western Indian Ocean Marine Science Association (WIOMSA) gave her opening statement, followed by an opening statement by the representative of the Chair of the Bureau of the Nairobi Convention, Prof. James Njiru.
11. The meeting was called to order at 1000hrs (EAT) by Mr. Dixon Waruinge, who welcomed all the participants to the first virtual Science to Policy workshop. Dixon acknowledged the support and participation of WIOMSA for co-organizing the meeting and the partnership with WIO-C members. He also recognized key participants in the meeting (a) FAO/SWIOFC, implementing a partnership project on Marine and Coastal Governance and Fisheries Management for Sustainable Blue Growth financed by the Swedish government through SIDA, (b) The support of the German Government through GIZ on the Western Indian Ocean Governance Initiative and, (c) France, a Contracting Party that was supporting the Nairobi Convention in the project on Integrated Management of the Marine and Coastal Resources of the Northern Mozambique Channel (NoCaMo).
12. Mr. Waruinge thanked the Focal Points of Nairobi Convention for their exemplary representation and acknowledged Kenya for chairing the Nairobi Convention's Bureau. He appreciated all experts for the hard work they had put in preparing papers that were to be presented at the 2021 Workshop. Mr. Waruinge reiterated the need to bridge the gap between policy and science in support of blue economy, and the sustainability of ocean governance in the WIO region. He appreciated the support the Global Environment Facility (GEF) in the implementation of two flagship projects in the WIO region like WIOSAP and SAPPHIRE. Mr. Waruinge mentioned that the cooperation between the two GEF projects resulted in the Science to Policy Platform (SPP).
13. The head of the Nairobi Convention Secretariat further noted that the SPP meeting was within the mandate given to the Secretariat of the Nairobi Convention by Contracting Parties of bringing scientists and policy actors together to lead in evidence-based decision making at the national and regional level. He expressed hope for a strengthened Science to Policy Platform and a successful review of some papers and scientific findings in policy through the recommendations presented. Waruinge highlighted the objectives of the SPP platform to include (i) to generate and decimate knowledge, (ii) foster a consensus on the knowledge generated and, (iii) foster knowledge in policy areas that require change by the contracting parties.
14. The areas of concern and where SPP would support included scientific evidence for ocean governance amongst institutions such as the South West Indian Ocean Fisheries Commission (SWIOFC), the Nairobi Convention Secretariat, COMESA, IGAD, SIOFA, and SADC. He noted a need to understand the policies within these institutions related to ocean governance and the blue economy. He emphasized the need to harmonize communication between these organizations. Another key element of concern was how to deal with activities in areas beyond national jurisdiction (ABNJ), such as seabed mining. Mr. Waruinge noted that these were emerging issues that were likely to attract investment in the future. He added that area-based planning tools were important for ABNJ and areas within government jurisdiction to achieve sustainable biodiversity.

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15. In his concluding remarks, Mr. Waruinge informed participants that the information that was to be generated from the Science to Policy platform would be made available in the Nairobi Convention Clearing House Mechanism (CHM).

Opening Statement - Dr. Jacqueline Uku, President of Western Indian Ocean Marine Science Association (WIOMSA)

16. Ms. Jacqueline Uku (Dr) mentioned that the SPP meeting highlighted a remarkable contribution made by science towards sustainable oceans. She then mentioned the timeliness of the meeting, coming when the Western Indian Ocean region needed to think about ocean science and its contribution towards creating a sustainable WIO region. Dr. Uku expressed her excitement about the papers that were to be presented at the workshop, noting that they revealed the diversity in research fields ranging from fisheries, conservation, climate change, marine spatial planning (MSP), sustainable coastal cities and even COVID-19. The diversity of papers, she added, echoed one of the tenets of the platform, that sought to find solutions to challenges threatening our oceans, and the role of all stakeholders to enhance trans-disciplinary approaches.
17. Dr. Uku reiterated that the theme of the SPP, *'Transitioning to a Sustainable Western Indian Ocean Blue Economy: Addressing the challenges and seizing the opportunities'*, was selected to communicate the transition that WIO was undergoing, that needed to be managed with good science to deliver benefits to the region. She mentioned that WIOMSA had documented severe ocean challenges and sought practical and effective solutions from different groups at all levels. WIOMSA would continue support the Science to Policy platform and expected several initiatives to emerge from the policy recommendations of the meeting.
18. Dr. Uku mentioned that WIOMSA would continue to encourage the participation of the private sector, charitable organizations, civil society, individuals, and corporations at the SPP. She noted that individual action was just as important as collective action and encouraged participants to document the lessons learned from the Science to Policy Platform, which could be shared with other regions during the UN Decade for Ocean Science, 2021-2030. She observed that the WIO region was unique and had many lessons to share.

Opening Statement - Prof. James Njiru, representative of the chairperson of the Nairobi Convention Bureau and Director, Kenya Marine and Fisheries Research Institute

19. Mr. James Njiru (Prof) noted that the meeting was the first virtual SPP and took the opportunity to observe a moment of silence in honour of the immediate former President of Tanzania, the late Dr. John Pombe Joseph Magufuli, in solidarity with Tanzanian participants at the meeting. Prof. Njiru proceeded to give a background history of the SPP platform, from when the Nairobi Convention secretariat was directed to facilitate the establishment of the Forum for Academic and Research Institutions (FARI) in the WIO Region at the fourth Conference of the Parties (COP) of the Nairobi Convention in 2004.
20. Prof. Njiru noted that while ongoing and future projects executed by the Nairobi Convention would support science and policy linkages, they were also critical in building and strengthening the COP affirmed process, which had positively and significantly evolved as evidenced by various COP Decisions which had been informed through previous Science to Policy dialogues. The Bureau's chair also highlighted the rationale of the SPP – a multi-stakeholder platform comprising of representatives of formal and informal knowledge-generating institutions, practitioners, policymakers, communities, and the private sector within the WIO region.

SESSION II

Keynote Presentation I

Ocean Finance: Financing the Transition to a Sustainable Ocean Economy – Prof. Rashid Sumaila, Institute for Oceans and Fisheries, the University of British Columbia.

21. Mr. Rashid Sumaila (Prof) presentation focused on the prevailing state of ocean financing and the need to invest in the ocean economy.

- a) the presenter indicated that ocean economy (OE) was a cornerstone of the global economy, contributing trillions each year. He reported that the sector was drastically underinvested, with just 1% of the ocean economy's total value invested in sustainable projects to date. With climate change, pollution, overfishing, and multiple stressors putting mounting pressure on the ocean, it was crucial to protect and manage human activity on the ocean. To do this effectively and achieve a sustainable ocean economy, significant finance needs to be made available. To sustain ocean health, it was crucial to restoring, protect and effectively manage human use of and impacts to ocean ecosystems, adding that these activities needed financing. Ocean finance was critical to achieving a sustainable ocean economy.
- b) Prof. Sumaila submitted that the prevailing frameworks that guided blue investments did not set out consistent and universally adopted principles. Activities like oil and gas and unsustainable fishing, which negatively impacted the environment were heavily subsidized. Secondly, investments in the ocean economy are currently risky. Historically, ocean economic sectors had operated under relatively more unpredictable conditions than those based on land due to the ocean's vast size, physical environment, and comparative lack of ownership and responsibility in the ocean. African countries would need to develop internal funding mechanisms and collaborations akin to the Benguela systems between Angola, Namibia, and South Africa.
- c) The presenter proposed the following actions to plug the finance gap:
 - i. Set up and implement new common guidelines and principles that help define what sustainable investment in the ocean economy would look like.
 - ii. Strengthen knowledge, data and capacity in ocean health and finance, particularly in developing countries.
 - iii. Create a supportive and inclusive enabling environment.
 - iv. Stimulate the pipeline of investible sustainable projects.
 - v. Explore new financing mechanisms and tools.
 - vi. Develop best practices to incentivize sustainable behaviour.
 - vii. Boost new approaches to insurance.
- d) **PLENARY DISCUSSIONS:**
 - i. The need for national level structures to calculate Ocean Economy investment benefits and further studies at national, regional, and continental level on OE.
 - ii. The University of Nairobi sought collaboration with the University of British Columbia to establish a Blue Economy department to support capacity development on blue economy issues. South Africa informed to have

developed financial instruments through banks for financing projects around climate change.

- iii. Blue bonds in conservation and their replicability was of interest to participants. It was mentioned there was potential to create more of these bonds to enable people who cared about the environment to support it. It was also noted that many benefits from bonds take time to accrue; thus, sometimes, investors become impatient. However, the patient investors could cover impatient investors, for example, in Netherlands, where a blue bond had been oversubscribed.
- iv. Blended bonds were also flagged – they are needed where the market value of an investment is not competitive. An example of Seychelles was given, whereby donor countries agreed to reduce the interest on loans to allow the country to invest the savings in protecting the ocean.

SESSION III

ASSESSMENT AND CONSERVATION OF CRITICAL HABITATS AND ENDANGERED SPECIES

Working towards a better understanding of Western Indian Ocean deep sea ecosystems – Lucy Woodall, University of Oxford

22. The presentation highlighted the following:

- a. All contracting parties of the Nairobi Convention have an exclusive economic zone that includes deep sea space
- b. Based on a literature review study related to deep sea, only 42 papers were found relevant to the subject matter. Relatively very few studies on community ecology were recorded yet these are considered important for marine biodiversity management.
- c. The study recommended: i) increasing awareness on services of the deep-sea ecosystems to Parties, ii) Carry out a comprehensive review of deep-sea biological data (including grey literature and traditional knowledge) to provide knowledge gaps and to help prioritise activities, iii) Establish a deep-sea working group to lead the advancement of deep-sea research and data usage in the WIO, iv) Parties to continue to have strong representation in the Biodiversity Beyond National Jurisdictions (BBNJ) negotiations considering that deep sea is valuable for their prosperity.

Supporting national and regional alignment in coral reef management: The Western Indian Ocean Coral Reef IUCN Red List of Ecosystems Assessment – David Obura, CORDIO

23. The presentation noted that

- a. Coral reefs were increasingly under pressure leading to a relative decrease in hard coral cover over the years and an increase in fleshy algae cover. A Red List of Ecosystems (RLE) was developed by the IUCN Commission on Ecosystem Management and Global Ecosystems Management Programme. The Red List of Ecosystems Assessment in the WIO region was a regional collaborative initiative through the regional chapter of the Global Coral Reef Monitoring Network (GCRMN) and the Nairobi Convention's Coral Reef Task Force
- b. Findings indicated WIO region, and all ecoregions were in threatened categories, with the greatest threat being from future warming and a lesser threat from fishing impacts. Findings also showed the impact of past bleaching events masked by some levels of recovery.
- c. The proposed next steps included a national policy processes – Kenya, Tanzania, Mozambique – through 'National Coral Reef Assessments', and extension of RLE assessment to mangrove and seagrass systems for integrated approach

Protecting threatened sharks and rays in the Western Indian Ocean – Rhett Bennett, Wildlife Conservation Society

24. The paper noted that

- a. The WIO region has about 220 species of sharks and rays which is 20% of global populations. About a quarter of them (55 species) are found nowhere else in the world hence the region is considered a hotspot for sharks and rays

- b. WIO is characterised by intensive artisanal, industrial and IUU fishing leading to increased targeted or by-catch of sharks and rays. The demand for their products is high for either local consumption or global export. Characterised by slow growth and low reproduction and being highly susceptible to exploitation; major population of sharks and rays have declined globally. The paper noted the need for improved management framework for sharks and rays species within the WIO, including regulation of harvesting and trade. Incorporation of sharks and rays in the Nairobi Convention protocol concerning protection of wild flora and fauna in the Eastern Africa region Annex I, II, III, and IV would be essential to provide a legal framework for their protection. Noting that all Member States are signatories to IOTC, CMS and all but Comoros are signatory to CITES, species prohibited in the IOTC Resolutions 12/09, 13/05, 13/06 and 19/03 and those listed in CMS Appendix I should be protected by Member States.
- c. To reduce impacts on shark and ray populations in the WIO, and to improve their conservation status the following recommendations were proposed: i) List appropriate shark and ray species in the Annexes of the Nairobi Convention protocol concerning protection of wild flora and fauna in the Eastern Africa region, ii) Request Member States to implement their binding commitments, as a minimum, in terms of species protection and trade controls at the national level, as imposed by the multilateral agreements to which they are party, iii) Encourage member states to voluntarily implement species protections and/or catch restrictions for threatened species and species subject to trade controls.

Towards a Regional Mangrove Vision – Harifidy Ralison, WWF Madagascar

25. The presentation highlighted the following:

- a. Mangroves provide substantial ecosystem services (ES), supporting human well-being globally for more than 120 million people. Mangroves are critically exposed to degradation and loss and global pressures such as climate change (CC). Persistent poverty situation exacerbated the threats due to high human dependence on its ES.
- b. The mangrove vision aims at having a strong governance of natural resources and adequate implementation of environmental policies and laws and good coordination and coherence at the institutional level, coupled with financial and technical capacities.
- c. It was a regional dialogue for a joint mangrove vision to support coordinated action for securing mangroves in WIO and is in line with the region's priorities such as the Nairobi Convention COP Decision on MPAs and critical habitats outlooks.
- d. Interactions between the broader coastal systems of importance and need to be reflected both in international, regional as well as national policymaking. Pushing jointly for increased mangrove conservation with that of associated ecosystems under Nature-based Solutions (NbS) will increase effectiveness, particularly regarding the CC debate.
- e. Prevailing momentum on NbS is for a common vision and synergistic agenda between various Multilateral Environmental Agreements (MEA) and accelerated action on the ground. It would benefit WIO if regional dialogues to allow adopting a joint approach, vision, and strategies and speak with one voice at international stage.
- f. Joint development of a Regional Mangrove Vision would translate to conservation of mangroves and consequently lead to priority in policymaking and increase acknowledgment of marine NbS solutions in key national and regional processes.

- g. Mangrove protection / rational use and its potential for innovative financing mechanisms is important NbS solution to the successful development of a sustainable, inclusive, and resilient Blue Economy.
- h. It is essential to deal with mangroves at regional level and design common policy and legislative frameworks through dialogues and efforts to cooperate.
- i. Fostering the joint development of a regional mangrove vision will pave the way towards the necessary frameworks and easing support of international policy and donors' communities.
- j. Joint vision development is a prerequisite to regional integration and cohesion and is important to inform and foster the development of global international policy processes. It is vital for a better recognition of WIO at global policy and donors' level and is a responsibility that all levels of governance within the WIO region should take on. It builds a strong case for enhanced mangrove conservation goals included in a common vision and/or an agreement with clear targets and indicators.
- k. Recommendations made were i) A call on the Nairobi Convention Parties to develop a regional mangrove vision that encapsulates the region's commitments and priority needs ii) A call on the Nairobi Convention Parties to facilitate the mainstreaming of mangroves in national development planning (e.g. in NDCs review process) iii) A call on the Nairobi Convention Secretariat and Parties, and the WIO Mangrove Network to establish institutional structures such as the proposed Regional Advisory Group iv) Urge the Nairobi Convention Secretariat, Parties and partners to create a strong case for regional mangrove vision through regional and global dialogues to enhance mangrove conservation goals, commitments and priority needs.

Underwater Noise and Shipping and the threats they pose to marine species in the Western Indian Ocean – Tim Collins, Wildlife Conservation Society

26. Key highlights of this presentation:

- a. Effects of underwater noise include (i) interference with communication, i.e., auditory masking (loss of acoustic "habitat") and/or temporary or permanent hearing damage (ii) behavioural responses such as orientation, increased alertness, vocal changes; effects on feeding, breeding, social activity, risk of predation and habitat abandonment: temporary or permanent iii) physiological effects (stress, localised pressure in tissues, a similar scenario to decompression sickness [DCS] in human divers) iv) Injury and/or death (e.g., during stranding of whales and dolphins).
- b. WIO states are accelerating plans to diversify maritime trade in keeping with the "Blue Economy". Over 50 ports across the Nairobi Convention area, of which at least 15 are considered large, and their expansion is either planned or underway.
- c. 30% of global tanker traffic passes through the Mozambique Channel and shipping is projected to increase. WIO ambient noise levels are increasing.
- d. Threats from noise/shipping poorly understood and rarely considered in development plans/EIAs, Impact and Risk Assessment. Many port developments either fail to mention or understate the scale of threat associated with ports, shipping, and noise.
- e. Potential conservation and management solutions include i) Identification of practical, reasonable and timely conservation measures during project time span; ii) Pursuing a multi-disciplinary international collaborative effort with governments, industry, academic/research community and IGOs/NGOs iii) Targeted application of modern research methods to improve monitoring, predicting, reducing and mitigating ocean

noise and ship strikes, iv) Translation of science and associated efforts into concrete conservation actions and activities by regional, countries and other stakeholders – ensure inclusion in sustainable development plans.

- f. Recommendations made: (i) A review of current underwater noise mitigation policies within the Nairobi Convention area to identify a plan for targeted regional and collaborative research, (ii) the development of regional technical capacity for the study and management of underwater noise, (iii) member states should be encouraged to routinely review current regulation on the environmental management of maritime development.

Strengthening regional regulatory frameworks and national capacity for handling marine biodiversity data in the Western Indian Ocean – Hauke Kegler, Leibniz Centre for Tropical Marine Research (ZMT)

27. Key highlights:

- a. The Ocean and its biodiversity support essential food sources stabilises the climate and economically supports marine and maritime industry.
- b. To sustain the ecological services there was a need to (i) address potential competing interests about spatial use, (ii) carefully manage the fragile ecosystems and conflicts, (iii) gather relevant or priority data to ensure evidence-based management, (iv) use New Digital Technologies in data handling, (v) use faster methods to analyse and share data and information and, (vi) involve as many stakeholders as possible in the process of marine data gathering and processing.
- c. Constraints in providing data included inadequate institutional and governmental policies, general issues in knowledge sharing that hinder the collection and sharing of in-situ biodiversity data, expert taxonomy knowledge and detailed guides are missing in many geographic areas, lack of standard methods.
- d. The need for scientific projects that generate primary data and knowledge in acceptable standards and assessment of potential risks to biodiversity by development projects including local activities through contributions to coastal and marine spatial planning (MSP) and EIA efforts was highlighted.
- e. The proposed framework adds critical information to MSP efforts and data management and simplify ecosystem monitoring and ecosystem approaches to fisheries.
- f. The overall aim is to develop a roadmap vision for the Western Indian Ocean region to become a model region for the monitoring, handling, and sharing of marine biodiversity data for sustainable resource use, in support of the Nairobi Convention and its member states.
- g. Recommendations made: i) regionally align biodiversity and taxonomic data collection, reporting and sharing through common frameworks and formal agreements to facilitate timely data sharing and increase reporting to stakeholders, ii) Enable science-policy interactions to help prepare society to respond to changes in marine ecosystems, iii) Increase the comprehensibility of research findings, iv) Workshops to train scientists and data collectors in effective sharing methods, v) Governments to seek for alternative funding pathways, e.g. through public-private partnerships.

Overview of oceanographic data and research for improved ocean governance in the Western Indian Ocean Region by Bernadine Everett, Oceanographic Research Institute (ORI)

28. The presentation:

- a. Highlighted the need to make data management the core function of the data managers and not side jobs over and above scientific duties.
- b. Mentioned that in view of the UN Decade of Ocean Science for Sustainable Development, revitalization of oceanographic data centres in WIO countries was imperative to ensure effective management and sharing of the data needed for the ocean we want.
- c. Pointed at the need for a regional data portal, where the Nairobi Convention Clearinghouse Mechanism (NC-CHM) was proposed as a viable option.
- d. Mentioned the need to assess the status of each data centre and the facilities; categorise data needs and take stock of the required data for each category.
- e. Highlighted that in line with the African Strategy for Ocean Governance, the data centres need to be financially supported by governments, and their operations are to be mainstreamed in the work plans and budgets of the host institutions.
- f. Recommended that the Contracting Parties of the Nairobi Convention should request the Secretariat to support the strengthening of National Data Centres through the following actions: i) Prepare an action plan for further development and support of National Data Centres as provided under the SAPPHIRE project, ii) Support capacity development initiatives aimed at strengthening the capabilities of the National Data Centres as well as the data managers, iii) Ensure that linkages between National Data Centres and regional mechanisms such as the Nairobi Convention Clearinghouse Mechanism are established for efficient and effective sharing of, and easy access to regionally relevant information.

Ecosystem Monitoring Framework for the Western Indian Ocean - Warwick Sauer, Department of Ichthyology and Fisheries Science, Rhodes University.

29. The presentation:

- a. Highlighted that difficulties in aggregating available data from several countries may be minimized by setting up a standardized framework for the design, implementation, and reporting processes of ecosystem monitoring.
- b. It mentioned that the Contracting Parties to the Nairobi Convention had committed to amend Convention to cooperate in scientific research, monitoring, and the exchange of data and information in relation to the Convention its Protocols.
- c. It indicated that the framework aimed at providing guidance to the WIO Parties on the development of activities to support ecosystem monitoring at the national level. The activities were to provide basic scientific-based information and knowledge to current regional and global commitments to support their obligations and assist with decision making. It was also to help standardize the approach to support contracting parties in national planning and to design and implement national Ecosystem Monitoring Framework through a common methodology as well as guideline for the reporting and communication of monitoring data that are relevant at a regional level.
- d. It emphasized the ecosystem challenges in the WIO region as; water quality degradation, habitat, and community modification, declines in living marine resources and environmental variability and extreme events.

- e. The presentation recommended that 30 priority indicators suggested in the framework should be evaluated, discussed, and approved by the contracting parties in order to standardize data gathering for the regional monitoring. It also recommended that all contracting parties should, after appraisal and suggested amendments, approve and incorporate the framework in their national planning processes.

Proposed Strategic Framework for marine water quality management in the Western Indian Ocean – Susan Taljaard, Council for Scientific and Industrial Research (CSIR)

30. The presentation:

- a. Highlighted that protection of valuable natural resources is at the core of marine water quality management, not only for biodiversity but also to safeguard and enhance socio-economic ecosystem benefits to society.
- b. Reported that most countries are signatories to the major international conventions and agreements pertaining to combating of marine pollution.
- c. It indicated that a strategic regional framework for marine water quality management would support and trigger the development of national level management (including monitoring programmes) in countries of the region.
- d. The presentation outlined five principles recommended for the WIO region, namely, pollution prevention, waste minimization and precautionary approach, receiving water quality objectives approach, integrated, adaptive assessment approach, and polluter pays principle and participatory approach.
- e. The presentation noted the need for effective implementation that needs to be driven and coordinated through appropriate multi-sectoral management institutions with clearly defined roles and responsibilities.
- f. It was recommended that the Contracting Parties consider adopting as appropriate this *Regional Framework* for the development of their national *WQ Monitoring Frameworks*, including Guidelines for developing Environmental Quality Objectives and Targets, and National Marine Water Quality Management (MWQM). Task Forces to be established at national level to feed into the Regional Task Force and that the Secretariat to work with partners to support capacity building programmes in support of the effective implementation of the Strategic Framework for Marine Water Quality Management (including Monitoring) and associated Guidelines on Environmental Quality Objectives and Targets

31. PLENARY DISCUSSIONS:

- a. Mangrove agenda in WIO region had to incorporate the role of communities as instrumental in local level conservation.
- b. South Africa had implemented the water quality monitoring frameworks and had incorporated them into their national policy.
- c. Strengthening the national data centres would assist not only for transforming data to information for policy support but also for supporting scientists in processing and analysis of their data. Indian Ocean Commission were working on developing an ocean information hub. The hub would focus on inter-operability to allow data to be searched together.
- d. A need for national level ocean data and water quality centres that could be supported was raised.

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- e. Kenya Marine and Fisheries Research Institute had an ocean data centre in Mombasa. Similarly, data centres in Tanzania and South Africa were working well. Efficient operation of data centres required less reliant on donor funding; countries needed to incorporate their data centres in their own work plans with government funding.

SESSION IV

CLIMATE CHANGE ADAPTATION AND MITIGATION

Ocean Acidification - a hidden risk to sustainable development in the Western Indian Ocean – Sam Dupont, University of Gothenburg, Sweden

32. The presentation sought to address the lack of data coverage in WIO and lack of capacity of WIO scientists to address ocean acidification (OA). It highlighted the need for political support for further development, expansion, and enhancement of OA research in the region. The following were proposed in the presentation to address OA in the WIO region.
- Promotion of a national and regional solution-oriented research strategy including implementation of adaptation strategies to mitigate impacts of OA.
 - Communication on OA and the threat it poses to the public through outreach and educational programmes. The use of United Nations Policy Brief on OA is proposed as a platform for promotion of National Action Plans formulation, regional and local policies development, and general awareness creation on OA.
 - Research, knowledge sharing and transfer, and capacity development on OA to inform development and implementation of efficient adaptation strategies to minimize the impact of OA.

The Climate and Ocean Risk Vulnerability Index: Measuring Complex Climate Threats in Coastal Cities to Enable Action – Jack Stuart, The Stimson Centre

33. The presentation highlighted the following:
- Rising sea levels, extreme storms, and heat events are amplifying the climate crisis in coastal cities and increasing the vulnerability of residents.
 - This is exacerbated by underlying economic and social concerns, such as expanding populations, aging infrastructure, and governance gaps. Together, these interlocking risks threaten ocean and land-based ecosystems, which coastal cities rely on for their economic and food security.
 - The presentation revealed climate finance remains inadequate, with an estimated \$30 billion allocated to climate adaptation in 2018. This amount stands in stark contrast to \$180 billion, which the Global Commission on Adaptation estimated was needed every year to build resilience to current and future climate impacts.
 - It implored upon decision-makers to acquire targeted risk information to increase financial flows and ensure that resources are being directed to safeguard people, their livelihoods, and to build a more resilient future.
 - It mentioned the Stimson Centre had developed the Climate and Ocean Risk Vulnerability Index (CORVI), an analytical decision-support tool which compared a diverse range of ecological, financial, and political risks connected to climate change, to produce a coastal city risk profile.
 - In collaboration with WIOMSA, the Stimson Centre was conducting two city assessments in Mombasa, Kenya and Dar es Salaam, Tanzania. The projects would culminate in innovative new datasets and a risk profile that could be used to prioritize further resilience actions, provide evidence to upscale projects, and access additional climate finance.

Prioritization of climate refugia in the Western Indian Ocean – Nyawira Muthiga, Wildlife Conservation Society

34. The presentation highlighted that:

- a. Climate change with a direct role in elevated sea surface temperatures, sea-level rises, changes in monsoonal systems and cyclones and coastal flooding has large-scale impacts on coastal and marine ecosystems. The coastal ecosystems such as coral reefs, seagrasses, and mangroves bear the brunt of these impacts.
- b. The establishment of marine protected areas (MPAs) was discussed as a solution to the local and global stressors that result in environmental degradation. These stressors were said to undermine the ecosystem services and livelihoods of millions of local people and national economies that rely on natural resources in the WIO.
- c. It was indicated that most WIO countries had established MPAs mainly focusing on nearshore ecosystems and were committed to the Convention on Biological Diversity's (CBD) Aichi 11 target to protect 10% of coastal and marine areas.
- d. It mentioned that establishing large-scale MPAs such as transboundary conservation areas (TBCAs) and other large wilderness sanctuaries was one of the few tools available to achieve Aichi targets. Benefits mentioned included the ability to act at the ecosystem and landscape spatial scale; conservation and management of ecosystems, species, and fisheries stocks that cross-national jurisdictions; promotion of integrated management and conflict resolution, and the ability to increase climate resilience on a large scale.
- e. Protection of these climate refugia not only confer the benefits of managing at a large spatial scale, but also serve as potential climate mitigation measures.

SESSION V

ESTABLISHING AND MANAGING AREA-BASED CONSERVATION MEASURES

The role of the private sector in the management of plastics as an environmental challenge

35. The keynote presentation was delivered by Mr. Douw Steyn of Plastics South Africa and highlighted the private sector's role in the management of plastics as an environmental challenge. The presentation highlighted the following:
- a. An increasing demand for plastic packaging products in the western Indian Ocean (WIO) region was mainly due to growth in market access, abundant labour force, numerous investment opportunities, high level of intra trade and cross border investments.
 - b. It mentioned that the 2019 statistics in SA plastic industry showed that plastic production was comprised of ca. 1 841 700 tons of polymer (1 504 000 tons virgin material and 37 700 tons recycle). 49% of all the polymer went into packaging. South Africa had a plastics per capita consumption of ca. 27 kg/person and employed about 60 000 people in 2019.
 - c. Several challenges facing the plastics industry were discussed, such as opposing single use plastics ban and producer fees, lacklustre voluntary commitments, opposing plastic tax, and heavy lobbying needed to implement bans. South Africa had developed an initiative to bring together key stakeholders to implement solutions towards a circular economy for plastics. It also included a collaborative forum and working groups from full plastics value chain.
 - d. The presentation proposed an African Plastics Waste Management Strategy.

36. PLENARY DISCUSSION:

- a. It was remarkable there were 826 landfills serving the 57 million people that generate 2.5 kg of waste per day per person in South Africa. Emphasis was laid on cleanliness and exercising the three R's i.e., Reduce, Reuse and Recycle.
- b. A clarification was sought on whether the percentages given in the presentation included all recycled materials rather than plastics alone. The presenter confirmed that the said percentages were the amount of plastics collected/recovered. He added that out of the recovered materials, some would be discarded during the process of recycling. Furthermore, in South Africa (SA), the recovered materials were about 45% but only 30% went through the recycling process. He emphasized that out of the 1.5 million tonnes of virgin plastics produced globally, 50% goes to packaging, and out of the packaging plastics, only 30% is recycled in SA, and therefore, there is room for improvement.
- c. How has the market responded towards the recycled products? The presenter informed that there was a market for the plastics, noting that the focus ought to be on diversifying the products, coming up with good collection mechanisms, proper waste management, and development of end use markets.
- d. What are the collaborative efforts of private sector organizations? Mr. Steyn indicated that there were various global plastic industry collaborations such as World Plastics Council, SA Initiative to End Plastic Waste, and Global Plastics Alliance, Africa Marine Plastics Networks and the goal in all these initiatives was to ensure they involve the whole plastics value chain.

SESSION VI

ESTABLISHING AND MANAGING AREA-BASED CONSERVATION MEASURES

Establishment of Marine Transboundary Conservation Areas (TBCA) in WIO: From Theory to Practice – Arthur Tuda, WIOMSA

37. An overview of the proposed TBCA between Kenya and Tanzania aimed to protect marine and coastal resources and ecosystems, that are either shared or occur in the two countries.
- a. TBCAs were recommended as a strategy for protecting biodiversity corridors spanning across borders. The complexity in implementing TBCAs tend to be more difficult to plan and manage, because of the differences in the governance contexts in the countries involved. Therefore, evaluation of the governance context of the potential TBCAs to identify barriers and pathways to planning and management was recommended in designing management zones, developing shared management plans, and increasing cooperation amongst stakeholders and countries that are part of the TBCA.
 - b. The presentation outlined the three scenarios that could support the planning and implementation of TBCAs.
 - i. A transboundary scenario that would develop a conservation plan that will have contiguous management zones across the Kenya and Tanzanian border to protect the entire extent and distribution of ecosystems and ecological process.
 - ii. Pseudo-transboundary conservation where contiguous management zones would be developed across the shared border but would require two separate plans and corresponding institutional arrangements and common policies and practices across both countries.
 - iii. A decentralized scenario, where the planning and implementation of the TBCA is based on the lowest possible governance units (e.g., county, district) in the respective countries.

Strengthening the WIO MPA Network and cooperative actions of governments and society – Dr. Maina Mbui

38. The presentation focused on the need for establishing a network of marine protected areas (MPAs) to sustain marine biodiversity and fisheries and to ensure the persistence of biodiversity in the face of climate change. Protecting such ecosystems and ecological processes would ensure that people continually benefit from various ecosystem goods and services, including fisheries, protect coastal communities from storms, storm surges, and even increase the resilience of coastal ecosystems by providing continuous supply of larvae and partially protecting the movement of adult fish and other vertebrate species.
- a. There were 155 established MPAs in the WIO region, which covered a total area of about 678 000km² or 8% of the combined EEZ of the WIO nations. The majority of these MPAs were established nearshore and covered coral reefs, mangroves, and seagrass habitats, which also translates to protection of 17% of the combined East African coastline.
 - b. Recognising the different capacities among WIO states, the general policy and technical recommendations revolved around: i) improving the management and

governance of existing MPAs; and ii) increasing the area and quality of MPAs. Identifying and addressing gaps in MPA planning in the WIO to develop functional marine protected areas. iii) MPA Network (MPAN) required political will, multidisciplinary information, coordinated action and time.

- c. The Nairobi Convention was providing the institutional structure and arrangements for the development and establishment of a regional MPAN.

Mainstreaming community-managed marine areas into the Western Indian Ocean's governance frameworks – Dr. Melita Samoilys

39. Mainstreaming locally managed marine areas (LMMAs) into the WIO's policy frameworks could improve marine area protection and small-scale fisheries (SSF) management in the verge of the declining state of marine resources and biodiversity, including local disappearance of species.

- a. Inadequate area protection, inadequate engagement of communities in management, poor management of small-scale fisheries (SSF), all of which are exacerbated by poor funding commitment, were some of the causes of the degradation of WIO's marine resources and biodiversity.
- b. LMMAs provided an alternative community-led governance mechanism, delivered positive socio-economic and conservation outcomes and were an inclusive, equitable and participatory approach to marine resources management. These small, protected areas covered over 11,000 km² in the WIO in 2014, collectively increasing MPA area coverage to 11%. The LMMA model had been increasingly adopted in Madagascar and Kenya with numerous successes, including in Mozambique.
- c. The presentation recognized regional governance frameworks that have been bringing marine conservation at the forefront of global policy arenas such as in the UN's Decade of Ocean Science for Sustainable Development (2021), the CBD's strategy and post-2020 Global Biodiversity Framework (GBF), and the SDGs (notably 14,1,2,12,13).
- d. The Secretariat of Nairobi Convention had aligned its programme of work with these global strategies. Research findings to support the developments of policy and legal frameworks in the WIO that could provide for improved involvement of local communities in marine resource management were presented.

The ongoing role of the Nairobi Convention in delivering well-connected and effective systems of protected areas and other effective area-based conservation measures – James Hardcastle, IUCN Global Programme on Protected and Conserved Areas

40. Highlights of the presentation:

- a. The Nairobi Convention promotes the effective management, sustainable use, and protection of the marine and coastal environment of the WIO region as a core objective under a dedicated theme on Coastal Management. This included the development and implementation of ecosystem-based management programmes and activities that seek to reduce or prevent degradation of the coastal and marine environment and strengthen the functioning and resilience of marine ecosystems.
- b. There are challenges in scaling-up success. Notably, there are significant difficulties in sustaining resources and financing, technical capacities, securing policy gains beyond pilot projects, and in matching governance models to the context and practicalities of the region.

- c. The objectives of many protected and conserved areas remained poorly defined and even out of context with the rapidly changing climate and coastal ecosystem dynamics.
- d. Additionally, systems of protected and conserved areas could lack vitality to adapt to the demands of globalization and geopolitical shifts in demography, economics, and culture.

Western Indian Ocean Marine Protected Areas Outlook: Towards achievement of the Sustainable Development Goals – Arthur Tuda, WIOMSA

41. The presentation highlighted the following:

- a. The MPA Outlook prepared by the Nairobi Convention in partnership with WIOMSA, the WIO member states, and other institutions, reported progress made by countries and the region in achieving CBD 2020 Aichi Targets and the SDGs. The Outlook presented the progress of the Nairobi Convention Contracting Parties towards achieving Aichi Target 11 (conservation of 10 per cent of coastal and marine areas) and SDG 14 (Life Below Water) through an assessment of the status and implementation of marine protected areas (MPAs) across the WIO region.
- b. The preparation of regular status reports was beneficial to member states as it promoted accountability and supported regional cooperation in achieving the conservation targets and exchanges of best practice and mutual learning. The Outlook was also helpful in mobilizing support to overcome shared challenges and identify new and emerging issues.
- c. Scientific studies had shown poor connectivity across the WIO MPAs, and the presentation recognized the challenges in connectivity and integration in wider landscape and seascape mainly because most of the MPA do not consider connectivity, and only a few countries have incorporated MPAs in their larger marine spatial planning framework.

Addressing shifting governance contexts and development objectives in the Quirimbas National Park, Mozambique – Alima Taju, WWF Mozambique

42. Key highlights:

- a. MPAs were identified as one of the most applied spatial management tools for biodiversity conservation. MPA planning and management had evolved to address multiple objectives and considered different approaches to ensure their success and sustainability. In terms of planning, MPA objectives were enlisted as ecological processes addressing threats to ensure persistence of biodiversity, in addition to various social, economic, and political considerations to reduce conflict between protected area management and stakeholders and increase compliance. Management had also evolved to become more adaptive to increase MPA effectiveness.
- b. Despite the considerable strides, MPA planning and management had yet to learn to be more dynamic to keep up with shifting governance contexts and development objectives to ensure their success and sustainability.
- c. There are 155 MPAs in the WIO region, and these were established with different objectives and managed using different approaches. Using the Quirimbas National Park (QNP) in Mozambique as a case study, the presentation highlighted lessons learned from the protected area review process. The lessons envisioned to provide insights as to how the development trajectories of Mozambique had influenced

governance of the QNP, and consequently the proposed downgrading of regulations and expansion of protected area boundaries.

43. PLENARY DISCUSSION:

- a. A possibility of a devolved model that could recognize local needs but nested within the umbrella model that covers the TBCA countries was inquired. Dr. Tuda clarified that this was one of the considerations and the TBCA was envisaged to incorporate both formal and community-managed areas. He added that the systematic conservation planning process would take into consideration existing LMMAs, CCAs and MPAs. The TBCA would be the umbrella management area with multiple smaller management areas, but this was still to be discussed and agreed upon through stakeholder meetings that were to start later, supported by WCS and WIOMSA.
- b. An inquiry was made on the possibility of integrating LMMAs/community-managed marine areas into similar MPA Networks and if a similar network approach could be supported as a parallel model for the WIO. Melita Samoilys clarified that the concept of LMMAs was akin to that of BMUs.
- c. A suggestion was made to extend local communities engagement services (often conducted by local fisheries institutions) to be able to effectively respond in a timely manner to communities proposed needs, i.e., resources, capacities, clear and simple processes for LMMAs to be secured in national legislation. Melita added that as a regional policy recommendation, the legislators would need to get together and deliberate on the fundamental simplified principles that are needed in legislation. Noting that different countries would approach it differently at the national level, she added that many countries already had LMMAs, and therefore it would just be a matter of simplification to make them easily adaptable.
- d. An observation was made that category 5 or 6 of IUCN Protected Area category could also support the establishment of the TBCA. This was supported by the fact that it would give an overall framework that would enable the possibility to have both MPAs and LMMAs under one larger umbrella. Further, in the absence of other national legal frameworks that could enable the establishment of such a framework, UNESCO Man And Biosphere (MAB) reserve could be a step to move forward on such establishment.
- e. Metrics for measuring inclusiveness would be important for consideration, especially regarding OECMs (Other Effective Area-Based Conservation Measures) as integrated into measuring overall MPAs' effectiveness.
- f. MPAs and LMMAs together were seen to be a holistic approach and for gap-filling that was to be promoted by partners - whether government, community, private or other/integrated model because the marine species and ecosystem within the Network do not recognize the boundaries.
- g. WIO region was commended for inching close to the Aichi 11 target to protect 10% of coastal and marine areas through the quality/effectiveness of management was seen to be fundamental.
- h. LMMAs were said to be well recognized in WIO countries legislations and a suggestion was made to include them in target area calculations because once they were included, the coverage increased from 7% to 11% in 2014. However, it was reported that only the ones recognized by OECM would be accounted to reach the target, and therefore, there was a need to roll out at regional level, and OECM

identification and accountability process to start accounting for eligible LMMAs when reporting against ocean protection targets.

- i. MSP was mentioned to be a relatively new concept in the region. Many MPAs were established way before, and therefore there was a need to ensure that MSP incorporates MPAs and LMMAs since it was one of the policy recommendations for countries to adopt. Moreover, MSP offered a holistic planning framework and if well applied, it could resolve the problem of sector-driven planning. There were examples of good practice mentioned from countries like the Seychelles and South Africa that other WIO countries could learn from.
- j. It was also indicated that the IUCN World Commission on Protected Areas (WCPA) Green List of Protected and Conserved Areas (IUCN Green List) aimed at both protected and conserved areas, and therefore it could be instrumental in supporting both identification and effectiveness of LMMAs as OECMs.

SESSION VII

REGIONAL OCEAN GOVERNANCE: EMERGING ISSUES/FRAWORKS

Improving the understanding and regional awareness of illegal, unreported, and unregulated fishing occurring in small-scale/ artisanal fisheries and the impacts it has on ocean conservation, blue economies, and communities in the Western Indian Ocean – Keith Roberts, Terranautics

44. The presentation highlighted that despite a growing illegal, unreported, and unregulated (IUU) fishing problem impacting artisanal/ small-scale fisheries in the WIO region, few actors had a comprehensive understanding of the scope and broader impacts of the problem.
- a. The presentation called for a Regional Plan of Action to better understand and address IUU fishing by both small-scale fishers and industrial fishing vessels occurring within artisanal/ small-scale fisheries of the WIO region, with a particular emphasis on programs to improve information, raise awareness and devise strategies to curb those illegal activities.
 - b. The presentation emphasized an urgent need for collective regional effort (in the form of long-term support to national Governments) prioritizing research, information sharing, capacity building and the strengthening of Monitoring Control and Surveillance (MCS) systems. It also called for an integrated and participatory approach to sustainable development and management of small-scale fisheries involving all stakeholders (resource users, academia, civil society, and Governments).

Coastal Cities of the Western Indian Ocean Region and the Blue Economy – Valentine Ochanda, WIOMSA

45. highlights of the presentation:
- a. The presentation discussed environmental challenges and opportunities posed by rapid urbanization, especially of coastal cities in the WIO region. In response to Decision CP.9/9 and 9/13 of the Nairobi Convention, WIOMSA, in collaboration with UN-Habitat commissioned three studies. The studies acknowledged the potential future growth of other blue economy sectors such as marine biotechnology, renewable energy, and resource extraction, but the recommendations were intentionally focused on blue economy sectors and themes which were most prominent across WIO coastal cities.
 - b. Recommendations to the Nairobi Convention were given to support strategies and integrating the new urban agenda, including urban spatial planning processes and consider integrating marine natural capital, i) enabling the parties enhance their operational environment to maximise gains in BE in WIO cities, ii) strengthening and integrating BE governance and planning in waterfront development, ports, and maritime trade for the WIO region, and iii) offering Blue Economy technical assistance to local authority and county governments in the region and integrating Coastal Cities in BE.

Co-Design is the basis for collaboration and science to policy uptake in the Western Indian Ocean region– MeerWissen Secretariat, WIOMSA

46. This presentation discussed the framework of co-creating collaboration and science to policy uptake in WIO region

- a. The framework consists of three stages, throughout which all stakeholders were to be involved: co-design, co-production and co-dissemination. The UN Decade of Ocean Science for Sustainable Development (Ocean Decade) was supporting such a transformative process and placing emphasis on the importance of co-design. This was a useful step in illuminating how co-design could be used to shape practice in marine research and policy.
- b. The presentation proposed an adaptive framework to jointly develop research projects and policies based on a common agenda and a shared vision. The adaptive approach was the four-step approach developed by Future Earth Coasts – Our Coastal Futures, which aimed to engage stakeholders for joint problem definition, goal setting, and strategy development. A key point of the approach was the establishment of a reliable partnership among stakeholders, a mandate to act, and a joint definition of targets.
- c. Consider institutionalization of co-design, like that of participation processes on a regional level which required political support to eventually anchor such approaches formally. Necessary to have a competence-base for co-design methods and knowledge transfer approach with a modular system.

Shaping action and measures to effectively address marine plastic pollution in the Western Indian Ocean Region – Peter Manyara, IUCN

47. The specific purpose of the regional assessment was to provide a reliable and credible baseline metrics on key plastic flows and leakages into the Western Indian Ocean, integrating both a quantitative technical assessment, qualitative process to quantify potential impacts of plastic in the marine environment, and strategic priority interventions and policy options.
 - a. The assessment outlined robust metrics of regional significance, with enough granularity for action that could enable governments and regional bodies in the WIO to promote, enact and enforce legislation and other effective measures to better contain and reduce marine plastic pollution.
 - b. The assessment supports and informs the review of important action plans and strategies developed within the region to address marine plastic pollution. Marine plastic pollution was real and continued to present challenges to the integrity of coastal livelihoods and marine biodiversity in the Western Indian Ocean. The most urgent short-term solution to minimizing marine plastics inputs in the WIO region was through improved waste collection and management.
 - c. The recommendations provided included among others i) urging governments to undertake measures to strengthen plastic recycling capacity, ii) Encouraging governments to implement measures that discourage the production and import of plastic objects that do not benefit from a recycling solution within national jurisdiction and iii) Facilitating the strengthening of tools, capacities and knowledge for municipalities and local government to address plastic pollution in major cities, towns and peri-urban areas.

48. PLENARY DISCUSSION:

- a. The need to separate the small-scale fishers and large-scale fishers when discussing illegal, unreported and unregulated (IUU) fishing was mentioned. Further, work on IUU should cut across all fleets in fisheries, but with small-scale fisheries, it was important not to point the finger of IUU at small-scale fishers (SSFs). Because co-management

approaches were weak, would focus be on compliance noting that fishers had shown willingness to comply and work with the government.

- b. In reference to the presentation on Plastic Pollution ‘hot-spotting’, the high plastic leakage from South Africa did also not match the immense efforts of plastic recycling mentioned in the presentation. What is being done?
- c. In reference to the presentation on co-design, a proposal was made for the use of co-design within a trans-disciplinary approach for research. This meant a greater equality in the voices of all actors (scientists, managers, decision-makers and civil society).
- d. It was noted that national objectives for MSP were different. Without including variables that were operationally required at habitat or city levels, regional MSP would take longer to be useful. Support for more the national-level MSP initiatives was suggested.
- e. There was an inquiry on how both MSP and ICZM would be "hard-wired" together, given that both were political processes. The scaling of actions and the levels of governance between MSP and ICZM were observed to be very different.
- f. How does the ocean governance structure fronted by WIOGI differ from what the Nairobi Convention (NC) was addressing on ocean governance and how would it add value. Ms. Yvonne Waweru responded that NC's mandate was on environment and ocean biodiversity, so developing ocean governance strategy, would bring other sectors on board, including fisheries, maritime security, regional economic community (RECs) that have a mandate mostly on BE sectors. The strategy would present a more integrated approach for cross-sector cooperation to address common challenges. The RECs were reported to be developing their own BE strategies, but there was a need to allow the private sector also to engage in a business manner. WIOGI was looking at opportunities to leverage co-financing for investment, secure and improve value chains.
- g. How would a Blue Economy (BE) platform be a way to link financing to challenges related to knowledge gaps or management measures. In response, the idea was to create a platform for the exchange of ideas for the formation of further partnerships with an aspect of blue economy fund differentiated from a private partnership initiative such as a regional octopus initiative or more generalized support. WIO Blue Economy Platform (WIO-BEP) was needed in principle, but all countries and stakeholders still needed to shape/refine their terms of reference together.

COVID-19 and the future of Ocean Sustainability –supporting adaptation to post-COVID changes in the Western Indian Ocean – David Obura, CORDIO

49. The objectives were to (i) understand how COVID-19 will impact ocean sustainability in the short- and long-term, ii) identification of strategic implications of these impacts for sustainable oceans work, and iii) new or strengthened relationships with other actors working to advance sustainable oceans.
- a. The study focused on Ocean Sustainability Areas and how are these would be affected in the long term by economic recession, digitalization and data, and research.
 - b. Exacerbators of effects of the factors identified are the obvious tendency towards business, as usual, unsupportive political environment, siloed thinking and actions, climate change impacts, reduced focus on climate change and environment, degraded quality of international negotiations and other governance dialogues, poor capacity in key actors and increasing inequality. Alleviators of the effects on the other hand are

cooperation, effective governance, empowered and supported local communities, strategic use of disruption, funding, and inspired youth, and improving equality.

- c. Lockdowns have led to a widespread economic recession and communities can either regrow and adapt or withdraw and protect. Increase in digitalization has been observed with many activities previously held in-person going online/virtual, massive uptake of digital technologies and ways of doing things which could lead to increased connection to the world or digitization divide. In the changes to data and research, monitoring and research have been degraded, disruptions to human activity have created unprecedented conditions such as either discovery or closing.
- d. Strategic implications/actions towards building forward better would involve; i) ensuring COVID-19 recovery is inclusive and blue, ii) building resilience, iii) embracing interconnectivity and complexity, iv) leveraging digitization for ocean sustainability, v) reducing ecosystem pressures and threats, and vi) supporting mindset shift.
- e. The presentation related its findings to the Nairobi Convention and its programme of work in, i) building capacity and resilience to cope with multiple and diverse threats, including of climate change, ii) to support countries in their commitment to attainment of the 2030 Agenda and the Sustainable Development Goals, in particular through Goal 14, iii) to build partnerships by implementing catalytic activities, and iv) to convene science-policy dialogues to provide knowledge and generate approaches to tackling current and emerging threats.
- f. The paper encouraged i) incorporation of scenario or 'future thinking' approaches into project development, ii) to take advantage of and strengthen alleviators, avoid and reduce the influence of exacerbators, and identify how one or more of the strategic interventions can be mainstreamed into COVID-recovery and other projects and processes, iii) support dialogues and consultations at relevant levels (local, national, regional) for WIO participants to explore and define their experience of COVID-19 and its implications for their lives and work.

Economic consequences of unmanaged plastics and the economic opportunities in the WIO region – Anthony Ribbink, Sustainable Seas Trust

50. The presentation had the following observations.

- a. Plastic waste has huge costs to human and environmental health, including air, water, and food contamination, negative impacts on the climate, agriculture, fisheries, vessels, tourism and real estate, ecological goods and services, and increased insect vectors and disease. Plastic pollution occurs through spillage and loss which takes place at every step of the value chain from producers, converters, packaging and retailers.
- b. There are economic opportunities in the recycling value chain, plus employment opportunities at every step from collection to recycling. Informal collectors play a vital role and inject funds into communities. Economic enterprises and incentives can play a vital role in stopping or reducing plastics from entering the seas. However, knowledge of economics and plastic value chains is quite limited, for example on data and empirical evidence and general understanding and knowledge on value chains, plastic polymers, recycling, and pyrolysis. Development of the technology for "alternative recycling" including plastics/cement blends, compression moulding, and pyrolysis is an opportunity worth exploring.
- c. Recommendations: i) increase waste enterprises by creating enabling environments, ii) increase data collection efforts, iii) intensive research to provide more empirical

information, iv) boosting the state of knowledge of plastic polymers, manufacturing, the industry and enterprises needs by conducting training courses, v) Designing plastic products for recycling, vi) Make economic considerations a core aspects of national and regional action plans, vii) Expansion of opportunities for enterprises to include non-recyclable plastics, viii) Expansion and support of the roles of informal collectors in future and, ix) those involved in plastic industry to become part of a structured network to share ideas.

A review of the current status of marine litter and microplastics knowledge in the Western Indian Ocean region: amounts, sources, fate and resultant ecological and human health impacts on the coastal and marine environment – Martin Thiel, Western Indian Ocean Marine Science Association

51. The presentation had the following highlights:

- a. Coordination and collaboration between various stakeholders across the region has remained limited. In recognition of the need for a coordinated approach to the issue, a Group of Experts on Marine Litter and Microplastics was established in 2019 in response to the 2018 decision of the ninth Conference of Parties to the Nairobi Convention.
- b. The study on the status of marine litter and microplastics knowledge in the Western Indian Ocean aimed at conducting a review policy and institutional frameworks on marine plastic litter in the WIO region, including government and non-government (private sector, NGO, and community) actions and to analyse opportunities and needs. The study was conducted in 10 countries of the WIO Region focussing on plastic waste, upstream of marine plastic litter, (macroplastics, microplastics, and microbeads).
- c. The study reviewed local/national regulations, strategies and action plans, and international frameworks that apply to plastic waste initiatives on plastic management, including: avoidance (promotion of alternatives), eco-design, reuse or upcycling, collection systems or recycling, treatment (generation of energy). 129 initiatives identified in the 10 WIO countries, mainly in South Africa (29%), Kenya (17%), La Réunion (France) (15%) and Madagascar (12%) and partly in Somalia and Mozambique. The majority (50%) of the initiatives concern recycling, upstream initiatives (avoidance, eco-design) are less represented (17%). All but one initiative target macroplastics. Most of the initiatives target plastic waste coming from household or commercial waste (50 %) or litter (23%) in cities and towns (55%), which are the main sources of plastic waste.
- d. Recommendations: i) Develop regulatory frameworks that collaborate with industry on EPR development, incorporate microplastics and are accompanied by education and enforcement, ii) Invest in waste management by recognition of importance of waste management system as a prevention measure; promotion and development of upstream measures such as avoidance, eco-design through incentives; development of a baseline to enable impact assessment; integration of informal sector in collection/recycling initiatives, and iii) Building on initiatives such as continuing to develop awareness, integrate existing actions into action plans, supporting “win-win” partnerships with government intervention where private initiatives are lacking, and facilitate access to international programmes and funding.

A review of marine plastic litter in the WIO region: Effectiveness of measures undertaken, and opportunities - Franck Oliver, ECOGEOS

52. This presentation was prepared from three interrelated studies commissioned by WIOMSA with support from the Nairobi Convention (under the WIOSAP Project) to further understand marine litter in the WIO region.
- a. One of the study's objective sought to review policy and institutional frameworks on marine litter in the WIO region, including government and non-government (private sector, NGO, and community) actions and to analyze opportunities and needs. The study analyzed effectiveness of existing policy and institutional frameworks, and the actions conducted by all types of stakeholders. Literature review to understand and identify existing regulatory frameworks and current initiatives to address marine litter were conducted. Information collected was put together in a database showing records on the type of waste targeted, the scope, the country/countries involved, the date and details of implementation.
 - b. Results showed that participation by WIO countries in international agreements was generally widespread, with countries such as Reunion Island and South Africa involved in all relevant governmental and industry agreements. Some gaps existed, as some countries were not signatories to the London agreements or the International Convention for the Prevention of Pollution from Ships (MARPOL), however these countries were still involved at an international level through their membership in the UN and the International Maritime Organization. Nationally, some countries had already adopted regulations on PET bottles indicating the recognition of their role in single use plastic reduction and creating opportunities in recycling. This reflected the engagement of governments, citizens, non-state actors against plastic marine pollution. Most of these initiatives were by the private sector.
 - c. General awareness about plastics was still low, and the initiatives were on a small scale, especially in countries with inadequate infrastructure. Various existing international programmes could help on these aspects in the WIO region by providing technical and financial support. This calls for i) regulatory framework and waste management – using a top-down approach and ii) building initiatives – via a bottom-up approach.

Sans frontières - Ocean and Coastal Sustainability of the Western Indian Ocean – Louis Celliers, Climate Service Center Germany

53. The paper highlighted the need to integrate contemporary management and governance processes of the region, and also to align them with the global objectives of the UN Sustainable Development Goals, the Paris Agreement, and the activities of the UN Decade of Ocean Science.
- a. The paper observed the importance of downscaling and customization of international frameworks at the local level, taking into consideration existing local regulations and regulatory frameworks such as integrated coastal (zone) management (ICM, ICZM) or marine protected areas (MPAs). ICM offers a pathway to support climate change adaptation and could act as a proxy for the management approaches needed for climate change adaptation. There is also the need for a paradigm shift to a holistic system perspective due to the tight interaction of the system's components, which determines the overall performance of the social-ecological system.
 - b. Planning for sustainability requires rapid, large-scale socio-political change as a window of opportunity for transformative change of natural resources governance.

Four archetypes of sustainability transformation research to include i) thematic structures clustered around environmental change and ecosystem services; ii) resilience and vulnerability; iii) knowledge production for sustainability and iv) governance for sustainability.

- c. Recommended that the four axes of sustainable coastal and ocean management require a very different response from the scientific community and a greater openness in support of transdisciplinary approaches and interdisciplinary research in the WIO. The scaling differences along the four axes require the involvement of a vastly increased number of stakeholders. At the same time, the quality of scientific evidence must be improved, but so must the representation of stakeholder engagement within a framework of co-design of solutions to issues relating to resource management. The Nairobi Convention is ideally placed to advance the above recommendations, considering both the need for concerted regional action as well as national specificities and progress in the implementation of coastal and marine management.

Open Data for Marine Spatial Planning Decision Support- Duncan Hume and Gustav Kagesten, Swedish Agency for Marine and Water Management

54. The presentation:

- a. Highlighted the benefits of open data to MSP in i) facilitating participation and building trust in policy, ii) making the use of limited resources more efficient, iii) encouraging collaboration and scientific rigor, iv) promoting innovation and generating new insights, and v) enabling leverage of new technologies. The paper mentioned that guidelines for data management and stewardship should be findable, accessible, interoperable, and reusable. It noted that good data should be open by default, timely and comprehensive, accessible, and useable, comparable, and interoperable, used for improved governance and citizen engagement, and inclusive development and innovation.
- b. It recommended that open data principles be accepted and implemented and that initiatives should be supported that improve access and management of marine data and knowledge, empower data holders to make data open and accessible, and harmonize data at national, regional, and global scales.

SESSION VII (B)

REGIONAL OCEAN GOVERNANCE: EMERGING ISSUES/Frameworks

A regional Marine Spatial Planning Strategy for the Western Indian Ocean – Amanda Lombard, Nelson Mandela University

55. The presentation highlighted the following:

- a. MSP is a process that is ecosystem-based, integrated across sectors and agencies, area-based, adaptive, strategic, and anticipatory, and participatory. The need for a regional MSP strategy was due to request made to Nairobi Convention Secretariat to work with partners to develop a regional strategy in a meeting held in Dar Salam in 2019. The regional MSP strategy development involved a wide stakeholder engagement including partners and NGOs through the MSP Technical Working Group constituted. The regional MSP strategy adopted the ecosystem-based MSP which puts the society at the top as opposed to the integrated use MSP which puts economy at the top.
- b. The regional MSP strategy is based on the following guiding principles; An ecosystem-based approach, A Systems thinking approach, A multi-stakeholder-based approach, A sound evidence base for decision-making, Transparency and accountability, Policy coherence, Cooperation, Shared benefits, and prosperity for all. The presentation highlights best practices of the MSP drawn from UNESCO-IOC, Marine Management organizations and Marine Plan Partnership Pacific North Coast.
- c. The presentation highlights the governance challenges, threatening processes and benefits of the regional MSP as stated during interviews conducted on the stakeholder in the region. The national MSP readiness for the 10 countries in the WIO detailed the vision, goal, objective, strategic priorities and enabling mechanisms that could lead to implementation of the strategy as drawn from the stakeholders engaged. A systemic perspective of the strategic priorities that shows the series of balancing loops was also presented.

Private Sector Engagement for a Sustainable Blue Economy in the Western Indian Ocean Region – Alex Benkenstein, South African Institute of International Affairs (SAIIA)

56. This paper was supported by the Nairobi Convention under the SAPPHERE Project and GIZ under the joint Western Indian Ocean Governance Initiative.

- a. It highlighted how economic activities by the private sector in WIO region rely heavily on marine and coastal ecosystems for goods and services as business inputs and indirectly through business value chains. Businesses, both large and small across a wide range of sectors, have significant and often detrimental impacts on coastal and marine environments. The need for meaningful private sector engagement in ocean governance and protection cannot be over-emphasized, adding that it is not only fundamental to managing oceans sustainably, but also critical in ensuring a sustainable and inclusive blue economy for the WIO region overall prosperity.
- b. Contracting Parties to the Nairobi Convention are urged to strengthen collaboration with the private sector and other stakeholders for conservation and sustainable utilization of coastal and marine resources in the context of a sustainable blue economy. The countries were urged to adopt the Strategic Framework for Engagement of the Private Sector in the WIO and the recommendations therein

including: (i) Develop an implementation plan and a framework for reporting on progress in implementing the Strategic Framework for Private Sector Engagement (ii) Assess the feasibility of a WIO Blue Economy Platform (WIO-BEP) to support more effective private sector partnerships in the region , (iii) Establish focus groups to assess and drive forward the proposed partnerships contained in the Strategic Framework for Private Sector Engagement, iv) Endorse a strategic regional multi-stakeholder advocacy initiative to create an easy entry point for private sector engagement in coastal and ocean stewardship, encouraging companies to provide resources and influence through individual actions and multi-stakeholder partnerships.

Regional Ocean Governance-The Road to a Regional Strategy – Yvonne Waweru, GIZ - Western Indian Ocean Governance Initiative

57. The paper highlighted the current state of WIO as having a diversity of membership in regional organisations, diversity of issues, sectors, and capabilities, capacity and resources deficit, poor enforcement and compliance, rapid deterioration in the ocean and coastal environment, economy and dependent populations; marine pollution, maritime security, maritime boundary disputes, rapid development of strategic corridors and maritime trade, activities in Areas (Biodiversity) Beyond National Jurisdiction and unequal distributional issues related to stresses on communities, effective knowledge management .

- a. The paper noted the main challenge of governance as the lack of common principles, common criteria, and common evidentiary standards for conservation measures between different sectoral organisations and processes that hinder broader efforts for comprehensive management and sustainable use of the marine environment. Further, stakeholder consensus on the regional ocean governance reveal as having shared long-term vision on the broad objectives of regional ocean governance, need for enhanced policy alignment and cooperation within and between WIO countries, and need for inclusive and enhanced cooperation among regional organisations.
- b. The paper mentioned the factors that should inform options for development of a WIO strategy to include recognition of the diversity of national, sectoral, and thematic objectives across the region, the nature, role and membership of the existing institutions that facilitate regional cooperation and the 'open' nature of the WIO as a loosely defined area, interconnected both environmentally and economically to adjacent seas and regions.
- c. It proposed the options of establishing a joint REC ocean governance task force, structure an adaptable open dialogue, or ecosystem-based management (EBM) approach and dialogue clusters. Ocean governance engagement with RECs should be aligned to their Blue Economy Strategy and Policy development processes and continental processes under the AU. Support for the ocean governance process to be extended to and aligned amongst other regional structures, initiatives and projects including Regional Fisheries Bodies and link to discussions around ABNJ/BBNJ connectivity and related area-based management to national EEZs. Ocean governance dialogues should link to discussions around private sector engagement and strive to draw the environmental and fisheries sectors within the WIO closer together in an Ecosystems Based Approach to enhance regional ocean governance

ANNEXES

ANNEX 1: PROVISIONAL AGENDA FOR SCIENCE TO POLICY WORKSHOP

Science to Policy Forum for the UNEP/Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean

VIRTUAL MEETING 23-25 March 2021

Theme: *Transition to a Sustainable Western Indian Ocean Blue Economy: Addressing the challenges and seizing the opportunities*

Provisional Programme

Tuesday, 23 March 2021		
Time	Event	Responsible
Session 1: Official Opening of the Meeting		Chair: Nairobi Convention Secretariat
10:00	Introduction to the Workshop	Nairobi Convention Secretariat
10:10	Opening statements	WIOMSA
10:20		Government of Kenya
10:30	Election of the Chair	Chair of the Bureau of the Nairobi Convention
10:35	Adoption of the Agenda	
Chair: Chair of the Bureau		
Session II: Keynote presentation I		
10:40	Ocean Finance: Financing the Transition to a Sustainable Ocean Economy' focusing on Africa	Rashid Sumaila
11:00	General Discussions	
Session III: Assessment and Conservation of critical habitats and endangered species		
11:10	Working towards a better understanding of Western Indian Ocean deep sea ecosystems	Lucy Woodall & Sheena Talma
11:20	Supporting national and regional alignment in coral reef management: The Western Indian Ocean Coral Reef IUCN Red List of Ecosystems Assessment	David Obura <i>et al</i>
11:30	Protecting threatened sharks and rays in the Western Indian Ocean	Rhett Bennett
11:40	General discussions	
11:50	10 Minutes Break	
12:00	Towards a Regional Mangrove Vision	Harifidy Ralison <i>et al</i>
12:10	Underwater Noise and Shipping and the threats they pose to marine species in the Western Indian Ocean	Collins <i>et al</i>
12:20	Strengthening regional regulatory frameworks and national capacity for handling marine biodiversity data in the Western Indian Ocean	Hauke Kegler <i>et al</i>
12:30	General discussions Chair: Prof. James Njiru	

Tuesday, 23 March 2021		
Time	Event	Responsible
12:40	Overview of oceanographic data and research for improved ocean governance in the Western Indian Ocean Region	Kwame Koranteng & Bernadine Everett
12:50	Ecosystem Monitoring Framework for the Western Indian Ocean	Warwick Sauer
13:00	Proposed Strategic Framework for Marine Water Quality Management in the Western Indian Ocean	Susan Taljaard <i>et al</i>
13:10	General discussions	
Session IV: Climate change adaptation and mitigation		
13:20	Ocean Acidification - a hidden risk to sustainable development in the Western Indian Ocean	Sam Dupont <i>et al</i>
13:30	The Climate and Ocean Risk Vulnerability Index: Measuring Complex Climate Threats in Coastal Cities to Enable Action	Jack Stuart <i>et al</i>
13:40	Prioritization of climate refugia in the Western Indian Ocean	Nyawira Muthiga
14:00	General discussions	
14:10	End of the Day	

Wednesday, 24 March 2021		
Time	Event	Responsible
10:00	Recap of the First Day	Arthur Tuda
Chair: Nina Wambiji		
Session V: Keynote presentation II		
10:05	The role of the private sector in the management of plastics as an environmental challenge	Douw Steyn
10:25	General Discussions	
Session VI: Establishing and Managing area-based conservation measures		
10:35	Establishment of Marine Transboundary Conservation Areas in WIO: From Theory to Practice	Arthur Tuda <i>et al</i>
10:45	Strengthening the WIO MPA Network and cooperative actions of governments and society	Julius Francis <i>et al</i>
10:55	Mainstreaming community managed marine areas into the Western Indian Ocean's governance frameworks	Melita Samoilys <i>et al</i>
11:05	General Discussions	
11:15	The ongoing role of the Nairobi Convention in delivering well-connected and effective systems of protected areas and other effective area-based conservation measures	James Hardcastle <i>et al</i>
11:25	Western Indian Ocean Marine Protected Areas Outlook: Towards achievement of the Sustainable Development Goals	Arthur Tuda <i>et al</i>

Wednesday, 24 March 2021		
Time	Event	Responsible
11:35	Addressing shifting governance contexts and development objectives in the Quirimbas National Park, Mozambique	Alima Taju et al
11:45	General Discussions	
Session VII: Regional Ocean governance: Emerging issues/frameworks		
Chair: Dr. Akunga Momanyi		
11:55	Improving the understanding and regional awareness of illegal, unreported, and unregulated fishing occurring in small-scale	Keith Roberts <i>et al</i>
12:05	Coastal cities and Blue economy	Valentine Ochanda <i>et al</i>
12:15	Co-Design as the basis for collaboration and science to policy uptake in the Western Indian Ocean	Ron Fluegel <i>et al</i>
12:25	Plastic Pollution Hotspotting and Shaping Action for Eastern and Southern Africa	Peter Manyara
12:35	General Discussions	
12:50	10 Minutes Break	
13:00	A regional Marine Spatial Planning strategy for the Western Indian Ocean	Amanda Lombard <i>et al</i>
13:10	Engaging the Private Sector in Regional Ocean Governance in the Western Indian Ocean Region	Alex Benkenstein <i>et al</i>
13:20	Regional Ocean Governance - the road to a regional strategy	Yvonne Waweru <i>et al</i>
13:30	General Discussions	
13:45	End of the Day	

Thursday, 25 March 2021		
Time	Event	Responsible
Chair: Sinikinesh Beyene Jimma		
10:00	Recap of the Second Day	Ulrika Gunnartz
10:05	COVID-19 and the future of Ocean Sustainability – supporting adaptation to post-COVID changes in the Western Indian Ocean	Dr David Obura et al
10:15	A review of the current status of marine litter and microplastics knowledge in the Western Indian Ocean region: amounts, sources, fate and resultant ecological and human health impacts on the coastal and marine environment	Prof Martin Thiel et al
10:25	Economic consequences of unmanaged plastics and the economic opportunities in the WIO region	Dr Anthony Ribbink et al
10:35	A review of marine plastic litter in the WIO region: Effectiveness of measures undertaken, and opportunities	Mr Franck Olivier et al
10:45	Sans frontières - Ocean and Coastal Sustainability of the Western Indian Ocean	Dr Louis Celliers et al
10:55	Open Data for Regional Marine Spatial Planning Decision Support	Mr Duncan Hume & Gustav Kågesten

Thursday, 25 March 2021		
Time	Event	Responsible
11:15	General discussions	
Session VIII: Summary of 2021 SPP recommendations		
11:35	Presentation of proposed recommendations	Nairobi Convention
11:50	General discussions	
Session IX: Closing Ceremony		
12:00	Closing remarks by WIOMSA	
12:10	Closing remarks by the Nairobi Convention	
12:20	Representative of the Government of Kenya	

ANNEX 2: LIST OF PARTICIPANTS

	GENDER	NAME	COUNTRY	INSTITUTION/ORGANIZATION
1	F	Abbie Akinyi Allela	Kenya	Stockholm Environment Institute
2	M	Aderito Miranda	Mozambique	Eduardo Mondlane University
3	M	Adnan Awad	South Africa	The Nature Conservancy
4	M	Ahmad Yasin	Somalia	Marine Science and Technology
5	M	Ahmed Hersi	Ethiopia	Intergovernmental Authority on Development
6	M	Akunga Momanyi	Kenya	University of Nairobi
7	M	Alex Benkenstein	South Africa	SAIIA
8	M	Alexandre Bartolomeu	Mozambique	NC Focal Point
9	F	Alice Marque	France	Institut de Recherche pour le Developpement (IRD)
10	M	Alima Taju	Mozambique	WWF Mozambique
11	M	Allen Vosrie Cedras	Seychelles	UNDP
12	F	Amanda Lombard	South Africa	Institute for Coastal and Marine Research, Nelson Mandela University
13	M	AMBININTSOA Sebastiani	Madagascar	Université d'Antananarivo
14	F	Amina L. R. Sekaly	Somalia	Consultant
15	F	Andre Ciseau	Kenya	Port Management Association of Eastern and Southern Africa
16	F	Anham Salyani	Kenya	UNEP
17	F	Ann Mukaindo	Kenya	East African Wild-Life Society
18	F	Anna Springfors	Sweden	Swedish Agency for Marine and Water Management
19	M	Arthur Tuda	Kenya	Executive Secretary, WIOMSA
20	F	Asha Poonyth	Mauritius	Indian Ocean Commission
21	M	Atanasio Brito	Mozambique	Rare (rare.org)
22	M	Barros, Pedro	Italy	FAO
23	F	Becker, Amani E.	United Kingdom	National Oceanography Centre, University of Liverpool (UK)
24	M	Benoît Rodrigues	France	Ministry for an ecological transition
25	F	Bernadette Snow	South Africa	University of Strathclyde
26	F	Bernadine Everett	South Africa	Oceanographic Research Institute
27	M	Bernard Monnaie	Seychelles	University of Seychelles
28	F	Blandina Robert Lugendo	Tanzania	University of Dar es Salaam
29	F	Carol Maione	Italy	Polytechnic University of Milan
30	F	Carol Mutiso	Kenya	GIZ
31	F	Caroline Lumosi	Kenya	The Nature Conservancy
32	F	Catherine Bodart	France	IRD
33	F	Cecilia Njenga	South Africa	UNEP South Africa
34	M	Célia Macamo	Mozambique	Eduardo Mondlane University
35	F	Chamsia Ibrahim	Comoros	University of Comoros

	GENDER	NAME	COUNTRY	INSTITUTION/ORGANIZATION
36	F	Charlotte Berkström	Seychelles	Blue Ventures
37	M	CHAUQUE Ercilio	Mozambique	IUCN
38	F	Chepkemboi Labatt	Kenya	KMFRI/Ulster University
39	M	Christopher Muhando	Tanzania	University of Dar es Salaam, Institute of Marine Sciences
40	M	Collins Odote	Kenya	CASELAP, University of Nairobi
41	M	Dass Bissessur	Mauritius	Department for Continental Shelf, Maritime Zones Administration & Exploration
42	M	Dave van Beuningen	South Africa	Wildlife Conservation Society
43	F	Diana Kishiki	Kenya	Kenya Forest Service
44	M	Dinis Juizo	Mozambique	University of Eduardo Mondlane
45	M	Dominique Hervé	Madagascar	IRD
46	F	Donatha Kajuna	Tanzania	University of Dar es Salaam - Institute of Marine Science (IMS)
47	M	Douw Steyn	South Africa	Sustainability Manager Plastics SA
48	M	Daniel Munga	Kenya	Lecturer Technical University of Mombasa
49	M	Jacqueline Uku	Kenya	WIOMSA
50	M	Twalibu Kithakeni Mmbaga	Tanzania	University of Dar Es salaam
51	M	Lucy Woodall	United Kingdom	University of Oxford/ Nekton
52	M	Nina Wambiji	Kenya	Scientist, Kenya Marine and Fisheries Research Institute
53	M	David Obura	Kenya	CORDIO East Africa
54	M	John Kochev Kipyegon	Kenya	National Museums of Kenya
55	M	Dresy Lovasoa	Madagascar	WWF
56	M	Duncan Hume	Sweden	Geological Survey of Sweden
57	M	Duncan Okowa	Kenya	Institute for Law and Environmental Governance
58	F	Edith B. Tibahwa	Zambia	Common Market for Eastern and Southern Africa
59	M	Edmond Sacre	Sweden	Swedish University of Agricultural Sciences
60	M	Edward Senkondo	Kenya	TAFIRI
61	F	Emily Aradi	Kenya,UK	Research Fellow, The University of Manchester
62	M	Eric Okuku	Kenya	KMFRI
63	F	Faouzia ABDOULHALIK	Madagascar	Representation of the OIF for the Indian Ocean
64	M	Farrington, Robin	Kenya	GIZ
65	F	FATTEBERT Cécile	Switzerland	Project Officer, IUCN
66	M	Felix Metzger	Germany	Projektmanager Vorstandsstab Digitalisierung bei Berliner Verkehrsbetriebe (BVG)
67	F	Fenti Susanti	Indonesia	Ministry of Marine and Fisheries Indonesian Republic
68	M	Fernandes, Meredith	South Africa	Summerstrand Campus South
69	M	Ron Flügel	Germany	Policy Advisor, GIZ

	GENDER	NAME	COUNTRY	INSTITUTION/ORGANIZATION
70	M	Frank Mirobo	Tanzania	WIO-ECSN
71	F	GALLETTI Florence	France	IRD
72	M	George Maina	Kenya	The Nature Conservancy
73	M	Gildas Todinanahary	Madagascar	Université de Toliara · Institut Halieutique et des Sciences Marines
74	F	Gladys Mwaka	Kenya	Kenya Marine and Fisheries Research Institute
75	F	Gough, Charlie	UK	Technical Advisor Fisheries Management and Conservation, Blue Ventures
76	M	Gustav Kågesten	Sweden	Geological Survey of Sweden
77	M	HARDCASTLE James	UK	Senior Business Analyst at Clarivate Analytics
78	M	Harifidy Ralison	Madagascar	WWF Madagascar
79	M	Hauke Reuter	Germany	Leibniz Centre for Tropical Marine Research, ZMT, Bremen
80	F	Henna Ramdour	Mauritius	Ministry of Environment & Sustainable Development
81	F	Hoek, Alexandra van	Germany	GIZ
82	F	Christine Mukami Njagi	Kenya	Senior Resident Magistrate, Kenya
83	F	Irina Randrianaly	Madagascar	Care International Madagascar / Projet RANO WASH
84	F	Issufo Carneiro	Mozambique	Forum of Civil Society Organisations for the Marine and Coastal Area
85	M	Jack Stuart	USA	Environmental Security Program, Stimson Center
86	M	Jackson Marubu	Kenya	Kenya Wildlife Service
87	M	Jacquis RASOANAINA	Madagascar	Ministry of Environment and Sustainable Development
88	M	Jamal Mahafina	Madagascar	Institute of Fisheries and Marine Sciences
89	M	James Mbugua	Kenya	CORDIO EA
90	M	James Njiru	Kenya	Kenya Marine and Fisheries Research Institute
91	F	Janina Lobmüller	Germany	Independent, Marine conservation consultant
92	F	Jean Harris	South Africa	Executive Director, WILDOCEANS
93	F	Jean Vermot	Madagascar	Ministry Agriculture, Livestock and Fisheries
94	F	Jenny Hertzman	Sweden	Marine Ecologist, County Administrative Board of Stockholm
95	M	Jeremy Raguain SIF	Seychelles	Seychelles Islands Foundation
96	M	Jean-François TERNON	France	IRD
97	F	Joana Akrofi	Kenya	Science Division, UNEP
98	F	Joanna Wallace	South Africa	Sustainable Seas trust
99	M	Joe Turner	UK	UNEP-WCMC
100	M	Jonas Pålsson	Sweden	Swedish Agency for Marine and Water Management
101	M	Joseph Kamau	Kenya	Kenya Marine Fisheries Research Institute
102	F	Josheena Naggea	Mauritius	Doctoral candidate, Stanford University, UK
103	F	Julian Sitemba	Kenya	CORDIO East Africa
104	F	Julie MULONGA	Kenya	Wetlands International - Eastern Africa
105	M	Julius Francis	Tanzania	WIOMSA

	GENDER	NAME	COUNTRY	INSTITUTION/ORGANIZATION
106	M	Kai Kaschinski	German	Fair Oceans
107	F	Kaylee Smit	South Africa	Nelson Mandela University
108	M	Keith Roberts	USA	TerraNautics
109	M	Kennedy Osuka	Kenya	CORDIO EA
110	M	Kieran Kelleher	UK	WIO consultant
111	F	Kitty Brayne	UK	Blue Ventures
112	M	Kwame Koranteng	Ghana	Independent
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114	F	Laura Weiland	Germany	Institute for Advanced Sustainability Studies
115	F	Lauren De Vos	South Africa	WILDOCEANS
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117	F	Lena Rölfer	German	Climate Service Center, GERICS
118	F	Lilian NYAEGA	Kenya	Wetlands International
119	F	Lilian Omolo	Tanzania	WIOMSA
120	F	Linda Godfrey	South Africa	CSIR
121	F	Linda Jonsson	Kenya	UNEP
122	F	Lisa Moulard	UK	Blue Ventures
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129	F	Márcia Dias Marques	Portugal	Ministry of the Sea Portugal
130	F	Margareth Kyewalyanga	Tanzania	Institute of Marine Sciences, University of Dar es Salaam
131	F	Maria Göthberg	Sweden	Swedish Agency for marine and water management (SWAM)
132	F	Maria Pentzel	Tanzania	Marine Parks and Reserves Unit
133	F	Maria Scarlet	Mozambique	Eduardo Mondlane University
134	F	Marie-sophie Dufau-richet	France	Secrétariat Général De La Mer
135	F	Marine Guyomard	France	Ecogeos
136	M	Martin Thiel	Chile	Universidad Católica del Norte (UCN) in Coquimbo, Chile
137	M	Mathias Igulu	Tanzania	WIOMSA
138	F	Melita Samoilyls	Kenya	CORDIO East Africa
139	F	Mercy E Amai	Kenya	National Environment Management Authority MFMR
140	F	Mia Strand	South Africa	Nelson Mandela University
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150	F	Munira Anyonge	Kenya	Kenya Program, The Nature Conservancy
151	M	Muumin, Hashim	Tanzania	FAO Tanzania
152	F	Nadia Deckert	UK	UNEP-WCMC
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161	M	Nicolas Andriamboavonjy	Madagascar	Ministère de l'Environnement de l'Ecologie, et des Forêts
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163	M	Leo Niskanen	Kenya	IUCN
164	M	Odin, Gabriel		
165	F	OKALO Francis Akatsa	Kenya	IUCN
166	F	O'Leary, Jennifer	Kenya	Wildlife Conservation Society
167	M	Olivier Hamerlynck	Kenya	Kenya Wetlands Biodiversity Research Team
168	M	Omar Mahadalle	Philippines	Silliman University
169	M	Ombache Effie	Kenya	Kenya Tropical Sealife Limited
170	M	Pascal Thoya (HDR)	Kenya, German	Kenya Marine and Fisheries Research Institute, German Universität Bremen
171	M	Paul Tuda	Kenya, Germany	Leibniz Centre for Tropical Marine Research
172	M	Peter Davies	Samoa	SPREP Secretariat
173	M	Peter Manyara	South Africa	IUCN
174	F	Pratima Ramsoonder	Mauritius	University of Mauritius
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184	F	Renis Auma	Kenya	World Maritime University
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186	M	Ridheema Jhowry	Mauritius	UNDP Mauritius
187	F	Ritha Said	Tanzania	National Environment Management Council
188	M	Richard Kimwaga	Tanzania	University of Dar es Salaam
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190	M	Roshan Ramessur	Mauritius	University of Mauritius
191	F	Ruth Muigai	Kenya	The Catholic University of Eastern Africa
192	M	Salomão Bandeira	Mozambique	University of Edouardo Mondlane
193	F	Sara Fröcklin	Sweden	Swedish Society for Nature Conservation
194	F	Sarah Jean Harrison	Kenya	USAID
195	M	SBERNA Thomas	Kenya	IUCN
196	M	Schmidt, Vasco	Mozambique	FAO SFS
197	F	Schnepper Charlotte	Senegal	GIZ
198	M	Sean Porter	South Africa	Oceanographic Research Institute
199	M	Sergio Rosendo	Portugal	Universidade Nova de Lisboa
200	F	Shameelah Mamode	Mauritius	Department for Continental Shelf, Maritime Zones Administration and Exploration
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212	F	Sumaiya Arabi	South Africa	Department of Environment, Forestry and Fisheries
213	F	Susan Taljaard	South Africa	CSIR
214	M	Tanguy Nicolas	UK	Fauna & Flora International
215	M	Titus WAMAE	Kenya	Wetlands International
216	M	Tony Ribbink	South Africa	Director of Sustainable Seas Trust
217	M	Tony Roupheal	Australia	Minderoo Foundation, Flourishing Oceans
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222	F	Virginie Tassin Campanella	Switzerland	VTA Tassin, Ocean Law & Policy Firm
223	M	Warwick Sauer	South Africa	Rhodes University
224	F	Waweru, Yvonne Wanjiku	Kenya	GIZ
225	F	Winnie Ikinya	Kenya	UNEP
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237	M	Timothy Andrew		Policy and Governance Officer, Nairobi Convention secretariat