



ACP MEAs 3

[www.acpmeas.com](http://www.acpmeas.com)

SWIOFC-NC PP2



## **Western Indian Ocean Regional Blue Carbon Ecosystems Workshop**

**Strengthening Measures for the Protection, Restoration, and Sustainable Management of Blue Carbon Ecosystems in the Western Indian Ocean in Line with Global and Regional Policy Commitments**

**Zanzibar, United Republic of Tanzania,**

**22 - 24 October 2024**

---

## Table of Contents

---

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1.	BACKGROUND .....	1
1.1.1.	<i>Drivers of Environmental Change in the WIO Region .....</i>	<i>2</i>
1.1.2.	<i>Opportunities for the Conservation of Blue Carbon Ecosystems .....</i>	<i>3</i>
1.1.3.	<i>Global and Regional Priorities.....</i>	<i>5</i>
1.2.	OBJECTIVES OF THE WORKSHOP .....	6
1.3.	EXPECTED OUTCOMES .....	6
<b>2.</b>	<b>WORKSHOP PROCEEDINGS .....</b>	<b>8</b>
2.1.	PRELIMINARY SESSION – OFFICIAL OPENING REMARKS.....	8
2.1.1.	<i>Remarks by the National Focal Point, URT .....</i>	<i>8</i>
2.1.2.	<i>Remarks by the Head of the Nairobi Convention .....</i>	<i>9</i>
2.1.3.	<i>Remarks by the Minister for Trade and Industrial Development, Revolutionary Government of Zanzibar.....</i>	<i>10</i>
2.2.	PLENARY SESSIONS.....	12
2.2.1.	<i>Session I: Global/Regional Policies to Strengthen BCE Conservation and Management</i>	<i>12</i>
2.2.1.1.	BCEs in the Convention Work Programme and COP Decisions.....	12
2.2.1.2.	The Kunming-Montreal Biodiversity Protocol and BCEs .....	14
2.2.1.3.	The High Seas Treaty and Relevance to BCEs.....	14
2.2.1.4.	BCE and the Decade of Ocean Science .....	15
2.2.1.5.	Regional Ocean Governance in Support of Blue Economy, Including BCE Management.....	17
2.2.1.6.	Blue Carbon Ecosystems in the WIO Region and the UN Decade for Ecosystem Restoration ..	18
2.2.2.	<i>Key Messages and Action Points from Session I .....</i>	<i>20</i>
2.2.3.	<i>Session II: Sustainable Financing for the Management of BCEs .....</i>	<i>21</i>
2.2.3.1.	Africa Forest Forum’s Capacity Building Programme on Climate & Carbon Finance .....	21
2.2.3.2.	BCEs and Climate Change: From Theory to Practice .....	21
2.2.3.3.	Landscape for Blue Carbon Financing .....	23
2.2.3.4.	Carbon Trading Policy and Strategies in Tanzania .....	25
2.2.3.5.	Economic Valuation of BCEs: The Case Study of the Kenya-Tanzania TBCA .....	26
2.2.3.6.	BCEs and the Paris 2015 Agreement.....	28
2.2.3.7.	Development of a Regional Sustainable Financing Mechanism .....	29
2.2.3.8.	An Overview of Plan Vivo Foundation .....	31
2.2.4.	<i>Key Messages and Action Points from Session II .....</i>	<i>32</i>
2.2.5.	<i>Session III: Country Experiences.....</i>	<i>34</i>
2.2.5.1.	Blue Carbon Assessment in Mauritius Seagrass Ecosystems .....	34
2.2.5.2.	Blue Carbon Assessment in Kenyan Seagrass Ecosystems, .....	35
2.2.5.3.	Blue Carbon Assessment in Tanzanian Seagrass Ecosystems, .....	37
2.2.5.4.	Mangrove and Seagrass Blue Carbon Assessment in Mozambique.....	39
2.2.5.5.	Madagascar mangrove carbon conservation project,.....	40

---

***Table of Figures***

---

Figure 1: The Africa Ocean Decade Task Force.....	16
Figure 2: Strategic Objectives of SEAWARD Africa.....	17
Figure 4: The Pathway to the Paris Agreement and Beyond .....	22
Figure 5: Roadmap to a WIO Regional Mangrove Vision and Action Plan. ....	23
Figure 6: Map of UNEP’s Blue Forest Projects .....	24
Figure 7: Registered Carbon Projects in the URT as of October 2024: .....	26
Figure 8: Global Land and Sea Temperature Trend between 1850 to the Present.....	28
Figure 9: Percentage scores for 21 indicators applied for the METT for MPAs in WIO, 2018 .....	30
Figure 10: Plan Vivo Foundation Impact Statement .....	31
Figure 11: Assessed Blue Carbon Storage Capacity for Mauritius .....	35
Figure 12: Changes in Seagrass Cover in Kenya .....	36
Figure 13: Distribution and Extent of Seagrass Meadows in Tanzania.....	38
Figure 14: Ecosystem Goods and Services of Seagrass .....	40

---

***List of Abbreviations***

---

ABMT	Area-based Management Tools
ABNJ	Areas Beyond National Jurisdiction
AFF	Africa Forest Forum
AFRC	Albion Fisheries Research Centre
AMCEN	African Ministerial Conference on the Environment
BC	Blue Carbon
BCE	Blue Carbon Ecosystem
CDM	Clean Development Mechanism
CO <sub>2</sub>	Carbon Dioxide
CoP	Conference of the Parties
COVID	Corona Virus Disease
EBSA	Ecologically or Biologically Significant Areas
EU	European Union
FFEM	French Facility for Global
GBF	Global Biodiversity Framework
GBW	Great Blue Wall Initiative
GEF	Global Environment Facility
GHG	Green House Gases
GVA	Gross Value Added
IPCC	Intergovernmental Panel on Climate Change
ITMO	Internationally Transferred Mitigation Outcomes
IUCN	The World Conservation Union
KMFRI	Kenya Marine and Fisheries Research Institute
KMGBF	Kunming-Montreal Global Biodiversity Framework
KT-TBCA	Kenya-Tanzania Transboundary Conservation Area
KWS	Kenya Wildlife Service
LMMA	Locally Managed Marine Area
METT	Management Effectiveness Tracking Tool
MPA	Marine Protected Area
MPRU	Marine Parks and Reserves Unit
NbS	Nature-based Solutions
NCS	Nairobi Convention Secretariat
NDC	Nationally Determined Condition
NPV	Net Present Value
OECD	Organization for Economic Co-operation and Development
OECM	Other Effective Conservation Measures
PA	Paris Agreement
PECCA	Pemba Channel Conservation Area
PES	Payment for Ecosystem Services
PPP	Public Private Partnership
S2S	Source to Sea
SAP	Strategic Action Plan

SDG	Sustainable Development Goal
SEAWARD Africa	Science and Knowledge for a Resilient and Sustainable Ocean Economy in Africa
SPP	Science Policy Platform
SUA	Sokoine University of Agriculture
TBCA	Transboundary Conservation Area
TNA	Training Needs Assessment
UN	United Nations
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
URT	United Republic of Tanzania
USD	United States Dollars
VCM	Voluntary Carbon Market
WIO	Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association
WIOSAP	Western Indian Ocean Strategic Action Plan
WWF	Worldwide Fund for Nature

---

## *Executive Summary*

---

The overall objective of the Blue Carbon Ecosystems (BCEs) workshop was to discuss progress in the conservation and management of BCEs in the region and ensure alignment with global/policy commitments. The following are the key messages and action points from plenary and group discussions during the workshop.

### **Key Messages/Action Points**

1. The high seas are an enormous store of Blue Carbon captured through various natural oceanographic and ecological processes. Marine Protected Areas in the High Seas (ABNJ MPAs) can contribute to enhancing the conservation of BCE.
2. Although 8 High Seas MPAs have been proposed, BC potential wasn't a consideration in these proposals. Hence, there is a need for more research to quantify their potential.
3. To fully unlock the Blue Carbon potential in the region, Public-Private Partnership (PPP) should be encouraged to provide the investment required.
4. The WIO countries need a dedicated Focal Point to champion BBNJ policies within the country and bring all required information to all concerned stakeholders for informed decision-making.
5. There is a need for transformative ocean science solutions as contained in the Vision of the Ocean Decade framework.
6. The Ocean Decade Task Force has a Roadmap that, if utilized well, could unlock Africa's BC potential. However, strengthening institutional frameworks should be prioritized to bridge the science-policy gap and address community rights and capacity.
7. There is a dire need for capacity building and monitoring in BC Financing. The region can leverage the AFF Capacity Building Programme on Climate Finance and Carbon Finance.
8. We can shift how we practice conservation, for example, by building stakeholders' capacity to see conservation from a business and economic opportunity perspective.
9. The Region needs a robust & enabling regulatory framework for BC financing, including co-management frameworks between Governments and Communities.
10. Develop a regional BCE protocol. The UNEP Nairobi Convention is best placed to spearhead the design of a regional BC Financing Protocol.
11. Initiatives on BCE can ride on/leverage opportunities provided by the UNFCCC CoP decisions on Climate Change Mitigation, Adaptation, Capacity Building, Climate Financing, Technology Transfer, Education, and Transparent Accounting.

12. Continue efforts to bridge the Science-Policy divide.
13. TBCAs can secure a vast and unique ecosystem that provides a livelihood to a large population, mitigate high and extreme risks to natural assets, increase natural capital value, and increase national GDP.
14. Develop a Regional Technical Working Group on BCE (BCE Hub).
15. Promote peer learning & Data Sharing – sharing from each other where BC financing mechanisms are working.
16. Need for a Dedicated BC Financing Framework (different from terrestrial) – to support pricing, etc.
17. Mainstream BCE into national Policy, Institutional, & Legal Frameworks to provide clarity, public awareness, and coordination.
18. Promote Mapping, Economic Valuation, & Natural Capital Accounting of BCEs – to help build business cases.
19. Develop new technologies dedicated to African BCE, e.g., satellite & space technology.

## **1 Introduction**

The Blue Carbon Ecosystems workshop was organized by the UNEP Nairobi Convention Secretariat, with support from the government of the United Republic of Tanzania, the Revolutionary Government of Zanzibar, the African Forest Forum (AFF), the Western Indian Ocean Marine Science Association (WIOMSA), and the Global Environment Facility (GEF). The workshop was held at the Maru-Maru Hotel in Zanzibar from the 22<sup>nd</sup> to the 24<sup>th</sup> of October 2024.

### **1.1. Background**

The Western Indian Ocean region contains diverse coastal and marine ecosystems that support local and national economies. The critical coastal and marine ecosystems also provide valuable ecosystem services, including carbon sequestration. They also provide a habitat for marine biodiversity and are considered one of the world's most valuable ecosystems. These ecosystems have also greatly benefited coastal communities, particularly as sources of livelihood, food, and energy. Despite the benefits associated with coastal and marine ecosystems, the anthropogenic stresses on these ecosystems, particularly from land-based sources and activities, are increasing and causing damage to the integrity of these ecological systems. The increasing threats arising from land-based sources and activities mean that the ecosystems in the region will continue to be degraded to the point where they will cease to provide essential goods and services, with severe consequences at local, regional, and global levels.

As growing demand and technological advances allow the exploitation of even more - and new - marine resources, oceans are recognized as a new frontier for economic development. The rush of public and private sectors to harness this potential exacerbates the risks to marine ecosystems, economies, and people who depend upon them. According to the OECD, the global ocean economy, measured in terms of the ocean-based industries' contribution to economic output and employment, was valued in 2010 at US\$1.5 trillion, or approximately 2.5 percent of world gross value added (GVA), or equal to the entire GVA of Canada that same year. The same report states that by 2030, the contribution of seas and oceans is projected to double from the 2010 levels to US\$3 trillion, providing full-time jobs for around 40 million people. The OECD report does not evaluate the range of ecosystem goods and services oceans offer. A report by WWF, prepared in collaboration with business consultancy the Boston Consulting Group, estimates that the economic value of coastal and oceanic environments is conservatively US\$2.5 trillion per year, more than 65% larger than the ocean-based industry economic value calculated by OECD above. The WWF report further states that the overall value of the ocean as an asset is ten times \$2.5 trillion, or \$25 trillion.

The current development in the Western Indian Ocean (WIO) region is affecting several coastal and marine ecosystems and profoundly impacting the prospects for sustainable



development in countries of the region. Major environmental problems and the drivers behind them that the project will address include:

- ◆ Habitat degradation and biodiversity loss
- ◆ Marine Pollution and Marine Litter
- ◆ Overfishing and Unsustainable Fisheries
- ◆ Climate Change Impacts
- ◆ Deforestation
- ◆ Urbanisation and Infrastructure Development

### **1.1.1. Drivers of Environmental Change in the WIO Region**

The underlying drivers of environmental change and pressures on the coastal and marine environment in the Western Indian Ocean region are the following:

- **Population Growth:** The region has experienced substantial population increases in recent decades, increasing pressure on natural resources and habitats. The growing population demands more food, water, energy, and land, resulting in deforestation, land degradation, and habitat destruction. The expanding human footprint exacerbates the strain on ecosystems and contributes to biodiversity loss.
- **Unsustainable Resource Exploitation:** Fishing, timber extraction, and mining are among the key industries in the region, providing livelihoods for many communities. However, overfishing, illegal logging and unregulated mining threaten marine and terrestrial ecosystems. The depletion of fish stocks, deforestation, and habitat destruction disrupt the environment's delicate balance and compromise its resilience.
- **Inadequate Governance:** Inadequate governance and insufficient capacity to implement regulatory frameworks are crucial in driving environmental change in the Western Indian Ocean region. Limited enforcement of environmental laws and inadequate capacity for monitoring and enforcement contribute to illegal activities such as overfishing, logging, and pollution. The lack of effective governance hinders conservation efforts and sustainable resource management, perpetuating environmental degradation.
- **Socioeconomic Factors:** Socioeconomic factors, including poverty, lack of alternative livelihoods, and limited access to education and healthcare, contribute to environmental change in the Western Indian Ocean region. To survive, poverty often drives local communities to engage in unsustainable practices, such as destructive fishing methods or illegal logging. The absence of viable economic alternatives and social services exacerbates the pressure on natural resources, leading to environmental degradation.

Recognizing and addressing these drivers and pressures is crucial for effective environmental conservation and sustainable development in the region. Strengthening governance frameworks, implementing sustainable resource management practices, promoting alternative livelihoods, and addressing social inequalities are essential to mitigating environmental change in the WIO region. By tackling these underlying drivers collectively, stakeholders can work towards a more sustainable future that preserves the region's unique biodiversity and safeguards the livelihoods of its communities. However, if nothing is done, the impacts of climate change, coupled with high population growth rates in coastal areas of the region and increasing national pressures for post-COVID-19 economic recovery and growth, will lead to increased unsustainable use of marine and coastal resources.

If left unchecked, this will be accompanied by increased pollution and waste entering the ocean, leading to increased biodiversity, habitat, and ecosystem degradation. This, in turn, will lead to reduced ocean capacity to regenerate species and maintain the food web balance, produce oxygen, and sequester and capture carbon. It will also lead to reduced resource viability in terms of harvestable biomass volumes and access to fishing grounds amidst rougher seas and unpredictable and ongoing changes in resource distribution. Coastal areas are projected to become more crowded around Africa, including the WIO region, implying higher demand for decent lives, incomes, improved livelihood security, and to pursue business opportunities.

The current critical demand for jobs, incomes, and food security in the region, if not addressed with viable, sustainable, and scalable Blue Economy solutions, will result in higher incidences of illegal use of ocean resources, overharvesting, and the implementation of poorly coordinated and designed income-generating interventions. Climate variability and change hold significant uncertainties for the WIO region that could negatively impact people and living marine resources. Addressing climate change requires innovative, climate-resilient, and sustainability-driven approaches for economic growth based on adequate competencies for successful implementation. Inadequate governance of coastal and marine resources in the region will affect the capacity of marine and coastal ecosystems to continue being the basis for sustainable economic growth. Therefore, improving coastal and marine governance will improve chances for a successful transition to a sustainable ocean economy, i.e., the Blue Economy in the WIO region.

### **1.1.2. Opportunities for the Conservation of Blue Carbon Ecosystems**

Blue Carbon Ecosystems (BCEs) can sequester 5-10 times more carbon per unit area than their terrestrial counterparts. For example, mangroves can store more than 1,000 tonnes of carbon per hectare in their biomass and underlying soils, making them good candidates for climate change adaptation and mitigation. African governments are interested in realizing these potential carbon benefits; however, a better understanding

is required to develop appropriate policies to attract sustainable development financing for conserving and restoring vital coastal wetlands.

Carbon markets and trading mechanisms could mitigate climate change by incentivizing emission reductions and promoting sustainable development. The rapidly growing interest in carbon markets for offset credits also offers the potential for the (co-) financing of small, equitable, and self-sustaining conservation projects in developing countries. Article 6 of the Paris Agreement (PA) allows countries to trade emission reductions and removals with one another through bilateral or multilateral agreements. These traded carbon credits are called Internationally Transferred Mitigation Outcomes (ITMOs). Carbon markets may offer African countries the additional socio-economic incentives required to prioritize, protect, sustainably manage, and restore their coastal ecosystems, especially when benefits are equitably shared with key stakeholders, including local communities.

Participation of African countries in carbon markets has been limited due to various challenges, including a lack of capacity and awareness owing to the complexity inherent in the approaches and methodologies for carbon quantification, valuation, pricing, and verification. Consequently, they are yet to be fully integrated into policy discussions within the national economies and much less so in financial mechanisms for climate mitigation. Although scientific evidence exists to support the carbon sequestration benefits of marine and coastal ecosystems, the substance and certainty surrounding Blue Carbon (BC) benefits remain to be established in the developing carbon trading community.

Specifically, the recent recognition of the value of BCEs has encouraged interest in quantifying coastal ecosystems and further exploring options for establishing and trading blue carbon credits. However, inadequate knowledge of the intricacies of carbon trading schemes, primarily blue carbon, has hindered African Governments' realistic and practical engagement. Building capacity is essential for stakeholders in the region to understand, assess, and unlock the potential of carbon/blue carbon to catalyze climate-positive, inclusive, and sustainable economic growth. Sustainable coastal and marine development triggered by carbon markets can improve jobs, food security, health, and climate resilience while contributing to global efforts to combat climate change. Building capacity on, among other things, economic and regulatory aspects of carbon markets and trade for the WIO region will be necessary to leverage climate finance opportunities through enhanced integrity, transparency, and equity.

Beyond carbon trading, other sustainable and financing opportunities for the conservation and sustainable management of BCEs, which are major contributors to the Blue Economy in the region, must be explored. Regulatory regimes for these financing mechanisms must be developed at the regional and national level to ensure equity, social justice, transparency, and a predictable operational environment.

### 1.1.3. Global and Regional Priorities

Through Decision CP.9/1.3 of the Work Programme for 2018–2022, the Contracting Parties asked the Secretariat to work with partners and develop one regional integrated program to fully implement the two existing Strategic Action Programmes (SAPs). The 10-year program, themed ***Implementation of the Western Indian Ocean Strategic Action Programme in Support of a Sustainable Regional Blue Economy***, was adopted during the 11<sup>th</sup> COP of the Convention.

The 2025-2028 Programme of Work developed out of the Integrated Programme was adopted at the 11<sup>th</sup> COP and includes the global political processes, with the obligations to be met by member countries of the Nairobi Convention. Such political processes include the continued implementation of the 2030 Agenda for Sustainable Development (SDGs), especially SDG 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Other essential processes include the implementation of the 2015 Paris Agreement on climate change; the Kunming-Montreal Global Biodiversity Framework (GBF); the High Seas Treaty (BBNJ Treaty); negotiations towards a legally binding instrument on combating plastic pollution, including in the marine environment; the UN Decade of Ocean Science, the UN Decade of Ecosystem Restoration; and UNEA6 resolution 15 on strengthening ocean efforts to tackle climate change, marine biodiversity loss and pollution. It is against this background and a heightened ambition to reach a transformative turning point for many interconnected challenges that an opportunity exists to shape the work of the Nairobi Convention and focus the attention of Governments on significantly scaling up ocean biodiversity protection, efforts to address climate change and pollution and degradation, with a focus on building sustainable blue growth in the WIO. The sustainable management of BCEs is central to this transformation. If an integrated approach is adopted, it will help contribute to the delivery of many of these global policy processes, which have now been cascaded and adopted as regional priorities. Building on these global policies and informed by the 2023 WIO Science to Policy platform (SPP), various COP 11 Decisions have proposed actions to bolster the conservation of BCEs. These include but are not limited to:

- Decision CP11/3: Contributing to the Agreement's entry into force under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction.
- Decision CP 11/5: Implementing the Kunming-Montreal Global Biodiversity Framework
- Decision CP 11/6 Regional Ocean Governance Strategy for the Western Indian Ocean Region

- Decision CP 11/10: Mainstreaming climate change concerns in marine biodiversity
- Protection
- Decision CP11/11: Conservation, Restoration, and Management of Critical Habitats and Species  
Decision CP 11/12: Improving environmental quality through Source-to-Sea approaches
- Decision CP 11/13: Strengthening Marine Spatial Planning

## **1.2. Objectives of the Workshop**

Against this background, the Convention has organized a meeting in Zanzibar between the 22<sup>nd</sup> and 24<sup>th</sup> of October 2024. The overall objective of the meeting is to discuss progress made in the conservation and management of BCEs in the region and ensure alignment with global/policy commitments. The specific objectives include:

1. Review the status of conservation and management BCEs in the region
2. Discuss modalities of aligning the conservation and management of BCEs in the region to global/regional priorities
3. To enhance policymakers' and practitioners' understanding of the concept of blue carbon and its significance in climate change mitigation, adaptation, and sustainable development
4. Discuss opportunities for strengthening partnerships in the conservation and management of BCEs
5. Explore and recommend sustainable financing mechanisms for the conservation and management of BCEs

## **1.3. Expected Outcomes**

- i) An understanding of the status of BCEs in the region
- ii) Alignment of BCE conservation and management to global/policy priorities
- iii) An understanding of the significance of BCEs in climate change mitigation and adaptation
- iv) Proposal on a regional Biodiversity Framework for the region
- v) Proposal on a regional vision and framework on ratification and implementation of the BBNJ Treaty for the region considering the connectivity of waters within national jurisdiction and the high seas

vi) Proposed framework for sustainable financing for the conservation and management of Blue Carbon Ecosystems in the region

## 2. Workshop Proceedings

The workshop was organized into various sessions as follows

<b>Preliminaries:</b>	<b>Opening Ceremony</b>
<b>Session I:</b>	<b>Global/Regional Policies to Strengthen BCE Conservation and Management</b>
<b>Session II:</b>	<b>Sustainable Financing for the Management of BCE</b>
<b>Session III:</b>	<b>Country Experiences</b>

### 2.1. Preliminary Session – Official Opening Remarks

The section highlights remarks made during the official opening ceremony of the Blue Carbon Ecosystems workshop.

#### 2.1.1. Remarks by the National Focal Point, URT

The Nairobi Convention National Focal Point for the United Republic of Tanzania, Adv Wankyo Simon Mkono, welcomed workshop participants to Tanzania and the beautiful Island of Zanzibar. He highlighted the enthusiasm with which the Government has taken over the responsibility of chairing the Nairobi Convention Bureau. He reiterated the government's support for UNEP and the Nairobi Convention Secretariat in ensuring effective regional collaboration, shared learning, and quality control of the products delivered through the convention's partnerships.

Advocate Wankyo acknowledged the three demonstration projects funded by WIOSAP and implemented by Tanzania institutions.

***Developing a collaborative management plan and sustainable mangrove restoration model in the Rufiji Delta.*** This project, implemented by the Institute of Marine Sciences (IMS), promoted the sustainable management of mangroves to nurture the viable co-existence of the coupled human-mangrove ecosystem in the Rufiji Delta and provide demonstrable lessons on community-based conservation of mangroves for upscaling over the country and the WIO region.

***Upscaling and Amplification of the Msingini Wastewater Treatment Facility Model in Chake Chake Town, Pemba.*** This project aimed to reduce land-based sources of pollution to the Pemba Channel Conservation Area (PECCA) and associated marine and coastal ecosystems emanating from Chake Chake Municipality by constructing an artificial wetland.

***Sustainable Catchment Management through Enhanced Environmental Flow Assessment.*** Implemented by Sokoine University of Agriculture (SUA), this project aimed to reduce impacts/stress from land-based sources and activities and sustainably

manage critical coastal-riverine ecosystems through Environmental Flow Assessment, using the Mbarali River catchment in the Rufiji Basin as a case study.

The three (3) projects in Tanzania under WIOSAP received a total of US \$764,150 out of the US \$3,796,244 that went to 21 projects in 9 Countries in the WIO region. Thus, Tanzania was the biggest recipient of funds, receiving 21% of the total.

### **2.1.2. Remarks by the Head of the Nairobi Convention**

The Head of the Nairobi Convention, Dr. Jared Bosire, thanked the minister for Trade and Industrial Development in the Revolutionary Government of Zanzibar, the Hon. Omar Said Shaban, for officiating the Blue Carbon Ecosystems workshop. Dr. Bosire acknowledged this as a milestone in the remarkable journey that the Government of the United Republic of Tanzania is undertaking as the Nairobi Convention chairmanship by adopting a whole-of-government approach. He appreciated the presence and role played by the national Focal Point, the First Vice President's Office, the Directorate of Environment, Zanzibar Environmental Management Authority, the Institute of Marine Sciences (IMS), the Western Indian Ocean Marine Science Association (WIOMSA), and the African Forest Forum (AFF) towards making the workshop a success.

Dr. Bosire recalled Decision CP.9/1.3 on the Work Programme for 2018–2022, in which the Contracting Parties asked the Secretariat to work with partners and develop one regional integrated program to fully implement the two existing Strategic Action Programmes (SAPs). Consequently, the 10-year program, ***Implementation of the Western Indian Ocean Strategic Action Programme in Support of a Sustainable Regional Blue Economy***, and the ***2025-2028 Programme of Work*** developed out of the Integrated Programme, which were adopted during the 11<sup>th</sup> Conference of the Parties (COP) of the Convention. He reiterated that various COP 11 decisions as well as global biodiversity policies like the Paris Agreement on Climate Change, the Kunming-Montreal Global Biodiversity Framework (GBF), the High Seas Treaty (BBNJ Treaty), the UN Decade of Ocean Science, the UN Decade of Ecosystem Restoration; and UNEA6 resolution 6/15 on strengthening ocean efforts to tackle climate change, marine biodiversity loss and pollution, are all geared towards transforming the way governments and the Convention address the challenges of climate change, pollution and degradation towards achieving sustainable blue growth in the WIO region. Therefore, an integrated approach to the conservation, management, and sustainable utilization of blue carbon ecosystems is critical to delivering these interrelated policies and processes.

The Head of the Convention reminded participants of the workshop's objectives and hoped that key action points and recommendations would be discussed and agreed upon, especially on aligning the conservation and management of BCEs in the region with



global/regional priorities, strengthening partnerships in this area, and developing sustainable financing mechanisms.

### **2.1.3. Remarks by the Minister for Trade and Industrial Development, Revolutionary Government of Zanzibar.**

On behalf of the Revolutionary Government of Zanzibar, Minister for Trade and Industrial Development in the Revolutionary Government of Zanzibar, the Hon. Omar Said Shaban welcomed participants to the Regional Blue Carbon Workshop and expressed gratitude to the Nairobi Convention Secretariat for choosing Zanzibar to host the workshop.

The minister indicated that the Western Indian Ocean region contains diverse coastal and marine ecosystems that support local and national economies. These critical ecosystems also provide valuable ecosystem services, including a habitat for marine biodiversity, and are considered among the world's most valuable ecosystems. Unfortunately, despite the benefits associated with coastal and marine ecosystems, anthropogenic stresses on these ecosystems, particularly from land-based sources and activities, are increasing and damaging the integrity of these ecological systems.

The Minister informed the delegates that the United Republic of Tanzania has a Blue Economy policy for Tanzania Mainland and Zanzibar. Indeed, H.E Dr. Hussein Mwinyi, the President of Zanzibar and Chairman of the Revolutionary Council, officially announced the need to focus on the blue economy sector, which aims at promoting economic growth, social inclusion, and improvement of the Livelihoods of Zanzibaris while at the same time ensuring the preservation of environmental sustainability of the oceans and coastal areas. The sector has diverse components, including established traditional ocean industries such as fisheries, tourism, maritime transport, and new emerging activities such as offshore renewable energy, aquaculture, seabed extractive activities, and many more.

He emphasized that the current critical demand for jobs, incomes, and food security in the region, if not addressed with viable, sustainable, and scalable Blue Economy solutions, will result in higher incidences of illegal use of ocean resources, overharvesting, and the implementation of poorly coordinated and designed income-generating interventions. Climate variability and change hold significant uncertainties for the WIO region, which could negatively impact people and living marine resources.

The Minister pointed out that the workshop's primary goal was to examine the opportunities for conserving Blue Carbon Ecosystems. Blue Carbon Ecosystems can sequester 5-10 times more carbon per unit area than their terrestrial counterparts. For example, mangroves can store more than 1,000 tons of carbon per hectare in their biomass and underlying soils, making them good candidates for climate change adaptation and mitigation. African governments are interested in realizing these potential

carbon benefits; however, a better understanding is required to develop appropriate policies to attract sustainable development financing for conserving and restoring vital coastal wetlands. The Minister gladly noted that the United Republic of Tanzania had developed Carbon Trading Guidelines and Regulations.

Furthermore, the Contracting Parties to the Nairobi Convention during the recent 11<sup>th</sup> COP of the Convention approved a 10-year regional integrated program entitled **“Implementation of the Western Indian Ocean Strategic Action Programme in support of a sustainable regional Blue Economy**, which informed the 2025 – 2028 Work Programme of the Convention. The Work program and the COP 11 Decisions identify regional priorities, which he hoped would be discussed during the workshop. The 2025-2028 Work Programme considers the global political processes, with the obligations to be met by member countries of the Nairobi Convention. Such political processes include the continued implementation of the 2030 Agenda for Sustainable Development (SDGs), especially SDG 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Other vital processes include the implementation of the 2015 Paris Agreement on climate change; the Kunming-Montreal Global Biodiversity Framework (GBF); the High Seas Treaty (BBNJ Treaty); negotiations towards a legally binding instrument on combating plastic pollution, including in the marine environment; the UN Decade of Ocean Science, the UN Decade of Ecosystem Restoration; and UNEA6 resolution 15 on strengthening ocean efforts to tackle climate change, marine biodiversity loss and pollution. The Minister appealed to all partners to collaborate with the Secretariat and identify areas within the Decisions and Work Programme for joint implementation, emphasizing that impact can only be achieved at scale by working together.

In conclusion, the minister thanked the organizers for their efforts and the participants who attended from all over the WIO region. As Chair of the Bureau, he appreciated that Tanzania was hosting two parallel Convention meetings in Zanzibar as a kick-off to formally implementing the 2025 – 2028 Work Programme and COP 11 Decisions. The presence of the Hon. Khamis H. Khamis, the Deputy Minister of State, Vice President’s Office, the United Republic of Tanzania, to officially open the Marine Spatial Planning Workshop and his presence to open the Blue Carbon Ecosystems workshop formally underscored the commitment from the Government of Tanzania to offer dedicated and strategic leadership during our tenure as Chair of the Bureau. He invited the workshop participants to find time to enjoy the renowned hospitality of Tanzania in general and Zanzibar in particular.

## **2.2. Plenary Sessions**

The discussion sessions were preceded by Dr. Julius Francis of the University of Dar es Salaam, who presented on the Status of Blue Carbon Ecosystems in the WIO Region.

### **2.2.1. Session I: Global/Regional Policies to Strengthen BCE Conservation and Management**

This session, moderated by Dr. Margareth Kyewalyanga, was divided into plenary and group discussions. The sub-sections below summarize the plenary presentations, breakout group feedback, and question-and-answer sessions.

#### **2.2.1.1. BCEs in the Convention Work Programme and COP Decisions**

Jared Bosire, the Head of the UNEP Nairobi Convention, made this presentation. He indicated that the overall objective of the Work Programme for 2025–2028 for the Implementation of the Nairobi Convention is to strengthen the Convention's role as a platform for promoting synergies and coordinating regional initiatives to protect the marine and coastal environment. This mandate is based on the integrated program for the WIO region requested through COP 9 decisions and is informed by a merger of 2 Strategic Action Programmes and the 2023 WIO Science-Policy dialogue, which investigated science-policy interactions.

The Integrated Program of Work has the following components and key outcomes.

#### **Component 1: Integrated Ocean Governance and Management**

Outcome 1.1: The policy, legislative, institutional frameworks, and tools necessary for improved and integrated governance and management of the ocean, coasts, and resources are in place, harmonized, and operational at a national level in support of a sustainable, inclusive, and climate-smart regional blue economy,

Outcome 1.2: The capacity of Contracting Parties and relevant stakeholders on policy, legislative, and institutional frameworks and on the use of tools to support integrated ocean governance and management and sustainable blue economy is strengthened/enhanced

#### **Component 2: Area-based Planning**

Outcome 2.1: A regional ecosystem-based Marine Spatial Plan to support integrated ocean management for sustainable blue economies and societal livelihoods

Outcome 2.2: A harmonized network of subregional, national, and local scale Marine Spatial Plans that use Area-based Management Tools (ABMTs), including MPAs, LMMAs, OECSs, EBSAs, etc

### **Component 3: Environmental Quality (Adopting Source-to-Sea (S2S) Approach)**

Outcome 3.1: Reducing marine pollution from land-based and sea-based sources (improve coastal and marine water and sediment quality).

Outcome 3.2: Reduction of marine pollution from land-based and sea-based sources (oil spill preparedness)

Outcome 3.3: Reduction of marine litter from land-based and sea-based sources

Outcome 3.4: Improved river basin management (water quantity and quality, and sediment) to support healthy marine ecosystems

### **Component 4: Biodiversity Conservation**

Outcome 4.1: Improved Ecosystem health for environmental benefits (including climate change mitigation and adaptation) and community livelihoods (including small-scale fisheries).

Outcome 4.2: Increase spatial coverage and improve the management effectiveness of MPAs and OECMs, such as LMMAs in place in the WIO (for biodiversity and fisheries management)

Outcome 4.3: Protection of Biodiversity Beyond National Jurisdiction (BBNJ) improved through the establishment of regional MPAs to protect the biological connectivity between Areas Beyond National Jurisdiction (ABNJ) and national waters

### **Component 5: Regional Coordination, Collaboration, and Knowledge Management**

Outcome 5.1: An efficient and effective mechanism to coordinate multiple regional projects is in place, working with regional centers of excellence in particular disciplines to deliver the program

Outcome 5.2: Enhanced level of regional collaboration at multiple levels, including with the private sector, academia, and policymakers

Outcome 5.3: A sustainable system that allows easy access to useful data and information to support decision-making is in place in the region

He outlined the COP 11 decisions in support of Blue Carbon Ecosystems as follows;

- **Decision CP11/3:** Contributing to the Agreement's entry into force under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction.

- **Decision CP 11/5:** Implementing the Kunming-Montreal Global Biodiversity Framework
- **Decision CP 11/6:** Regional Ocean Governance Strategy for the Western Indian Ocean Region
- **Decision CP 11/10:** Mainstreaming climate change concerns in marine biodiversity Protection
- **Decision CP11/11:** Conservation, Restoration, and Management of Critical Habitats and Species
- **Decision CP 11/12:** Improving environmental quality through Source-to-Sea approaches
- **Decision CP 11/13:** Strengthening Marine Spatial Planning

#### **2.2.1.2. The Kunming-Montreal Biodiversity Protocol and BCEs**

The presentation by Dr. Jared Bosire on the Kunming-Montreal Global Biodiversity Framework (KMGBF) emphasized that the framework is much broader and deeper than the 30 by 30 target, as it stipulates in its vision statement of a world where humans live in harmony with nature. Through 4 broad-based goals, the framework aims to take urgent action to halt and reverse biodiversity loss to put nature on a path to recovery. The unprecedented and interrelated crises of biodiversity loss, climate change, land degradation and desertification, ocean degradation, and pollution occasioned this situation, posing an existential threat to our society, culture, prosperity, and planet.

The KMGBF is built around a theory of change that recognizes that urgent policy action is required globally, regionally, and nationally to achieve sustainable development so that the drivers of undesirable change that have exacerbated biodiversity loss will be reduced or reversed to allow for the recovery of all ecosystems and to achieve the Convention's Vision of living in harmony with nature by 2050. The 23 targets<sup>1</sup> provide mechanisms for reducing threats, meeting people's needs, tools and Solutions for addressing the underlying drivers, means of implementation, biosafety, access and benefit sharing, and ensuring people's engagement.

#### **2.2.1.3. The High Seas Treaty and Relevance to BCEs**

Hellen Kuria of the High Seas Alliance outlined the mission of the Alliance as “to conserve the world's high seas, which cover half of our planet.” The Alliance was established in 2011 to build a strong common voice and constituency for conserving the High Seas. History was made when the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement) was adopted on 19 June 2023 by the Intergovernmental Conference on Marine Biodiversity of Areas Beyond National

---

<sup>1</sup> See, <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

Jurisdiction convened under the auspices of the United Nations. The BBNJ Agreement thus became the third implementing agreement to the United Nations Convention on the Law of the Sea.

Blue carbon in the High Seas primarily involves the carbon capture and storage processes through;

- ◆ Physiochemical processes: absorbed by the ocean at the air-water interface
- ◆ Biological Processes: living organisms such as Plankton, algae, bacteria, and other marine animals
- ◆ Carbonation: calcifying microorganisms sink to the ocean floor

Plankton and bacteria are key to capturing atmospheric carbon in the high seas, but larger organisms such as fish, whales, turtles, and birds greatly enhance this process. The BBNJ Agreement provides a mechanism for creating high-seas Marine Protected Areas (MPAs), presenting a critical opportunity to incorporate blue carbon considerations into high-seas governance.

#### **2.2.1.4. BCE and the Decade of Ocean Science**

Dr. Jacqueline Uku of the Kenya Marine and Fisheries Research Institute (KMFRI) and Chair of the Africa Ocean Decade Taskforce informed the workshop that humanity depends on the ocean for sustenance, transport, economic growth, climate change mitigation, and many other yet-to-be-discovered benefits. However, the ocean is under threat, and there is a need for transformative ocean science solutions for sustainable development, connecting people and our ocean. Participants were directed to find reference documents for the Ocean Decade at <http://oceandecade.org>.

Further, Dr. Uku indicated that the Ocean Decade Africa Roadmap<sup>2</sup> provides a vision and plan for diverse stakeholders to convene around a common set of priorities for implementing the Ocean Decade in Africa. It provides a coordinated framework for ocean science planning and uptake and is a foundation for monitoring the achievement of priorities and outcomes. The Roadmap was Launched in May 2022 after a highly consultative process (Nairobi consultation workshops, Regional Gap Analysis, and Pre-conference workshops). In the long term, the Roadmap will establish and clarify institutions' ocean science strategies and help prioritize investments in scientific infrastructure, such as observations, monitoring, and data management.

The Roadmap is expected to unlock the blue carbon potential for Africa by;

- ◆ Mapping of blue carbon,
- ◆ Identifying the mangrove and seabed restoration needs,
- ◆ Providing an assessment of the blue carbon potential at the regional level and

---

<sup>2</sup> See, <https://oceandecade.org/publications/ocean-decade-africa-roadmap/>

- ◆ Capacity enhancement and ocean literacy elements

Workshop participants were informed of the establishment of the Africa Ocean Decade Task Force; see graphic below.



*Figure 1: The Africa Ocean Decade Task Force*

The workshop was informed of the Science and Knowledge for a Resilient and Sustainable Ocean Economy in Africa (SEAWARD Africa) program, whose strategic objectives are illustrated in Figure 2. It is part of the four (4) Ocean Decade programs endorsed in June 2024 (sustainable management of marine resources; climate change and marine biodiversity; ocean pollution; and extreme events and disaster risk reduction). SEAWARD Africa aims to provide a coordinated framework for implementing the Ocean Decade Africa Roadmap, which provides a vision and plan for diverse stakeholders to convene around a common set of priorities for implementing the Ocean Decade in Africa.

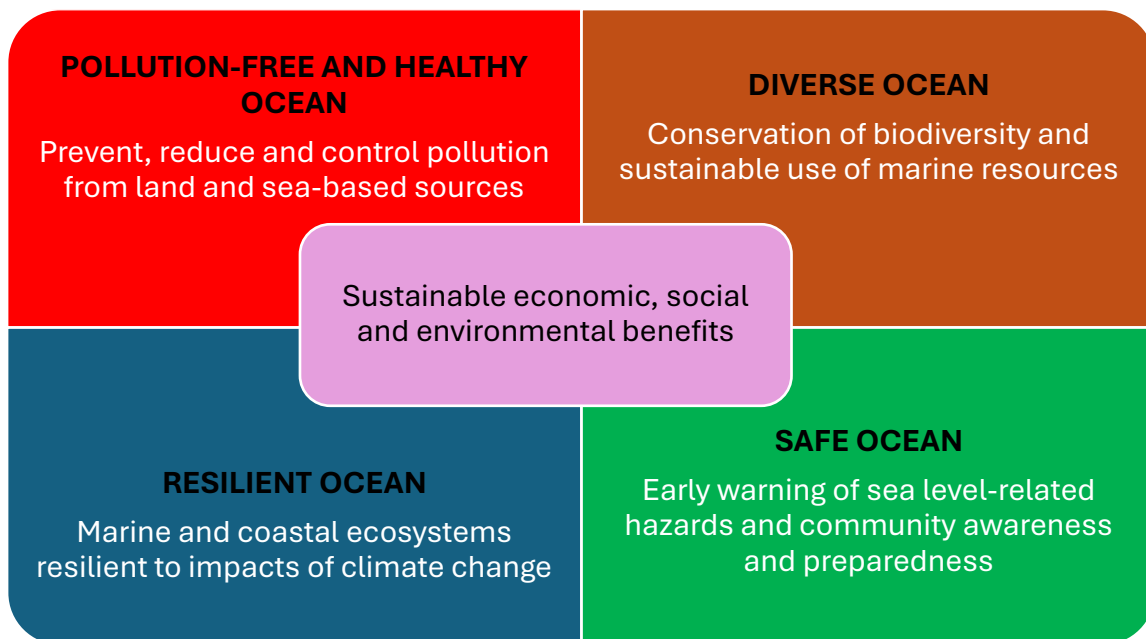


Figure 2: Strategic Objectives of SEAWARD Africa

#### 2.2.1.5. Regional Ocean Governance in Support of Blue Economy, Including BCE Management

Boniface Mutisya reminded participants that the Nairobi Convention is the legal framework for regional collaboration between countries and partners and provides a platform for inter-governmental discussions to address environmental issues in the region, facilitates assessment of the state of the coastal and marine environment, and promotes the sharing of information and experiences. During CoP of the Convention, the secretariat was mandated by contracting parties through Decision CP 11/11.1 and Decision CP 11/11.3 to strengthen measures and institutional arrangements in the management of blue carbon ecosystems. This mandate provided an entry point for the Convention into the Blue Economy space by preserving the ocean's and coastal ecosystems' health. This is exemplified by the Convention's work supporting seagrass, mangroves, and coastal forest restoration, constructed wetlands for wastewater management, policy briefs, and the MPA and Critical Habitats outlook reports.

The interconnectedness of the ocean requires well-informed governance that ensures the resources are utilized sustainably and the benefits are shared equitably among stakeholders. Thus, in 2018, the contracting parties mandated the Secretariat vide Decision CP.9/6.3 to work with partners to develop an ocean governance strategy for the Western Indian Ocean region that will contribute to the African ocean governance strategy as required by the African Ministerial Conference on the Environment (AMCEN). The mission of the strategy is "to develop a regional mechanism through which the key regional stakeholders can cooperate in a coherent and structured manner to achieve the vision," which is "***a peaceful, stable WIO region with a blue economy based on***



***protection and conservation of natural resources that delivers sustainable benefits with due regard to equity and wellbeing.”***

Through Decision CP 11/6.1, the Contracting Parties agreed to adopt and implement the Regional Ocean Governance Strategy at the regional level and align their national policy frameworks.

The presentation highlighted opportunities for blue economy financing, including government grants for research institutions and universities to support research activities, the World Bank's Blue Economy Program supports countries in sustainably developing their marine and coastal resources, Carbon financing, and Private philanthropies. It also informed participants of the steps necessary to ensure blue carbon readiness.

1. Strengthening enabling environment to develop GHG inventories for above and below-ground carbon
2. Promoting the Use of Ecosystem Valuation in Decision Making
3. Strengthening institutional structures and designing specific policies to facilitate the implementation of Blue Carbon commitments
4. Adopting integrated planning and Blue Carbon Strategy to enhance local benefits
5. Leveraging partnerships between governments, private sector, international financing institutions, and philanthropies

#### **2.2.1.6. Blue Carbon Ecosystems in the WIO Region and the UN Decade for Ecosystem Restoration**

Blue Carbon Ecosystems—mangroves, tidal and salt marshes, and seagrasses—are highly productive coastal ecosystems that are important for their capacity to store carbon. Thus, they are an essential component of nature-based climate change solutions. The estimated value of carbon sequestration from these ecosystems globally is around \$6,000 to \$10,000 per hectare annually.

The IUCN The Great Blue Wall Initiative (GBW) has, since its inception in 2019, mobilized US \$70 million of funding towards a developing mosaic of projects. Currently, GBW initiatives are in Kilifi Seascape in Kenya, Tanga-Pemba Seascape in Tanzania, Inhambane Seascape in Mozambique, Antsiranana-Diana Seascape in Madagascar, Moheli Seascape in Comoros, Rodrigues in Mauritius, Seychelles, South Africa, Somalia, São Tomé & Príncipe, and Cape Verde.

GBW contributions focus on scaling restoration efforts for mangroves, seagrasses, and salt marshes, particularly within WIO countries. These efforts align with global restoration goals and the key objectives of the UN Ocean Decade (2021-2030), which

focuses on preventing, halting, and reversing ecosystem degradation. They also align with the IUCN International Policy framework and other relevant instruments, such as the IUCN Nature-based Solutions (NbS) standard and guidelines for habitat restoration.

From the IUCN International Policy framework, the GBW considers the approach illustrated in the following diagram.

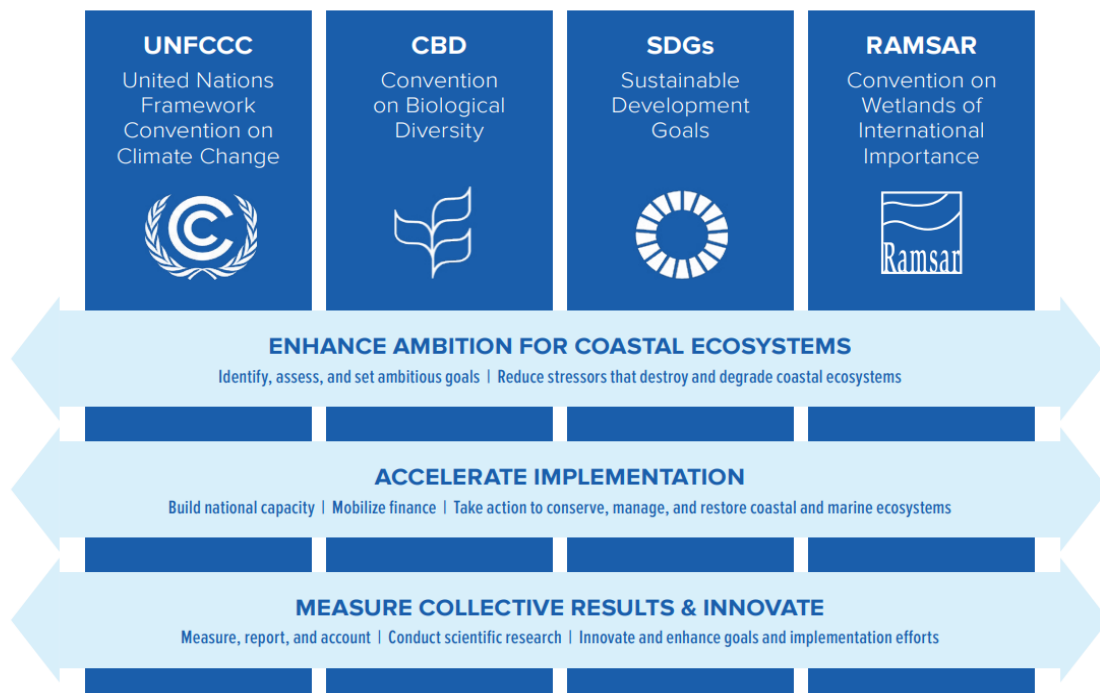


Figure 3: The GBW Process

In the WIO region, the GBW blue nature approach follows a systematic process.

- Strengthen regional and local governance frameworks
- Enhance Blue Ecosystem Health and Climate Adaptation
- Advancing research and capacity building
- Livelihoods and gender-responsive blue value chains

Recognizing the importance of seagrass for the Western Indian Ocean region, the IUCN, with support from the French Facility for Global Environment (FFEM), is providing up to US \$1 million in microgrants for the conservation and regeneration of seagrasses. The grant is organized into two portfolios as follows:

Portfolio 1: This portfolio provides \$50,000 - \$100,000 per seascape and aims to support eligible institutions, including universities, research institutions, civil society

organizations, and not-for-profit organizations, that have demonstrated the capacity to manage funds and execute projects on a similar scale.

Portfolio 2: This portfolio consists of 10 microgrants of between \$20,000 - \$40,000 targeting small-scale civil society organizations, not-for-profit organizations, LMMA practitioners, women's cooperatives, and other relevant organizations that have demonstrated the capacity to deliver the project.

### **2.2.2. Key Messages and Action Points from Session I**

The presentations and break-out group work sessions made the following key actionable messages.

1. The high seas are an enormous store of Blue Carbon captured through various natural oceanographic and ecological processes. Marine Protected Areas in the High Seas (ABNJ MPAs) can contribute to enhancing the conservation of BCE.
2. Although 8 High Seas MPAs have been proposed, BC potential wasn't a consideration in these proposals. Hence, there is a need for more research to quantify their potential.
3. To fully unlock the Blue Carbon potential in the region, Public-Private Partnership (PPP) should be encouraged to provide the investment required.
4. The WIO countries need a dedicated Focal Point to champion BBNJ policies within the country and bring all required information to all concerned stakeholders for informed decision-making.
5. There is a need for transformative ocean science solutions as contained in the Vision of the Ocean Decade framework.
6. The Ocean Decade Task Force has a Roadmap that, if utilized well, could unlock Africa's BC potential. However, strengthening institutional frameworks should be prioritized to bridge the science-policy gap and address community rights and capacity.

### **2.2.3. Session II: Sustainable Financing for the Management of BCEs**

Gildas Todinanahary moderated this session, and the subsections below summarise the proceedings in plenary and group discussions.

#### **2.2.3.1. Africa Forest Forum’s Capacity Building Programme on Climate & Carbon Finance**

Doris Mutta of the Africa Forest Forum (AFF) indicated that the organization is an association of individuals who share the quest for and commitment to the sustainable management, use, and conservation of all types of forests and tree resources of Africa (terrestrial, coastal and mangrove forests) for the socio-economic well-being of its people and for the stability and improvement of its environment. The AFF Strategy for 2021 – 2025 considers the dynamism of the African forestry sector, emerging issues like gender, climate change, carbon markets & trade, bio-economy, etc. AFF, therefore, can help African countries contribute to achieving Global Forest Goals and targets, AU Agenda 2063, within the context of the 2030 Agenda for Sustainable Development, especially SDG 13 on climate change and SDG15 on managing forests sustainably.

The AFF has a capacity-building and skills-development program to raise awareness and provide knowledge and skills to forestry practitioners, stakeholders, and those responsible for driving forestry development in various institutions. This includes building capacity on climate finance, Carbon markets and trading, Payment for Ecosystem Services (PES), and Training Needs Assessment (TNA).

Training and capacity-building sessions are organized into modules, which may be customized to fit any project goal. Universities also use the modules to improve their curriculum, as all documents are open-access.

#### **2.2.3.2. BCEs and Climate Change: From Theory to Practice**

Dr. James Kairo of the Kenya Marine and Fisheries Institute (KMFRI) revisited the road to the Paris Agreement, see Figure 4. The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015, and it entered into force on 4 November 2016. The overarching goal of this Agreement is to hold *“the increase in the global average temperature to well below 2°C above pre-industrial levels”* and pursue efforts *“to limit the temperature increase to 1.5°C above pre-industrial levels.”* Participants were informed that the Intergovernmental Panel on Climate Change (IPCC) held a scoping meeting on Carbon Dioxide Removal Technologies and Carbon Dioxide Capture Utilisation and Storage in Copenhagen, Denmark, from the 14<sup>th</sup> to 16<sup>th</sup> of October 2024, at which the Methodology Report on Carbon Dioxide Removal Technologies, Carbon Capture, Utilization, and Storage (Supplement to the 2006 IPCC Guidelines) was released.

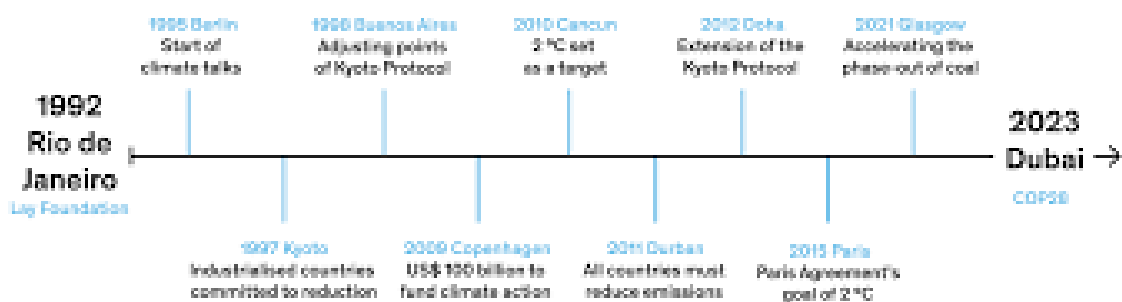


Figure 4: The Pathway to the Paris Agreement and Beyond

Participants were informed on the state of mangroves in the WIO as follows;

- Mangrove cover in WIO (2022) was 745,518 ha
- Mangrove net loss (1996-2020) was 30,156 ha
- Mangrove restoration potential is 40,900
- The number of people dependent on mangroves in WIO is 40 million
- Total economic value of mangroves is US \$33,000 to 57,000 per ha per year

Participants were also informed of regional mangrove action plans and guidelines, a white paper on Regional Policy Dialogue, and Contracting Party decisions on mangroves, e.g., CP. 10/12/1d to develop and implement a regional mangrove vision and action plan through the Western Indian Ocean Regional Mangrove Network and report progress at the eleventh meeting of the Contracting Parties, Decision CP 11/10 on Mainstreaming climate change concerns in marine biodiversity protection, and Decision CP11/11: on the Conservation, Restoration, and Management of Critical Habitats and Species.

The workshop was informed of the road map to a WIO mangrove vision and work plan, highlighted in Figure 5.

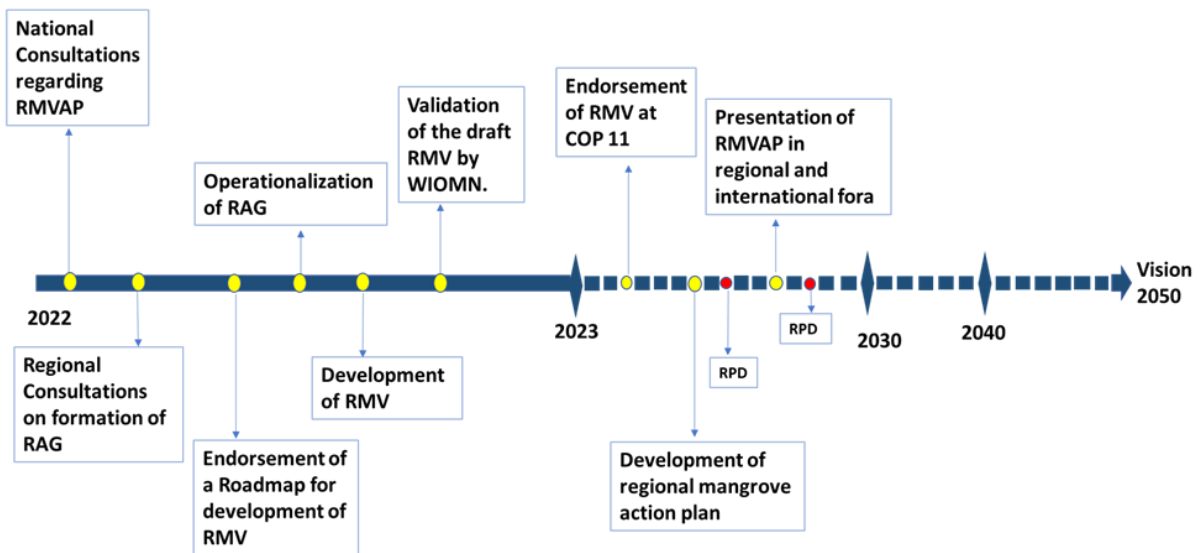


Figure 5: Roadmap to a WIO Regional Mangrove Vision and Action Plan.

Further, the workshop was informed of potential blue carbon opportunities as follows;

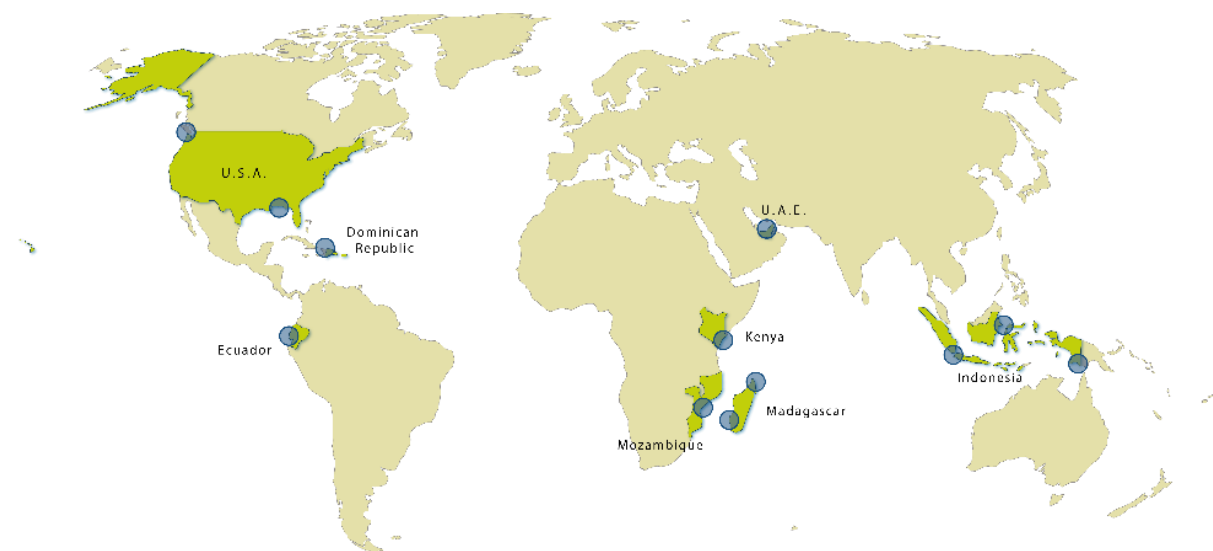
- Restoring and protecting Blue carbon ecosystems has the potential to provide low-cost opportunities to mitigate carbon emissions.
- Pricing Carbon is A Climate Action with multiple co-benefits
- Tools for measurement, reporting, and verification of blue carbon projects exist.
- Carbon credits are from activities or projects that avoid, reduce, or remove CO<sub>2</sub> emissions. Each credit equals one tonne of avoided, reduced, or removed carbon.
- Potential emissions from BC could be avoided at roughly US\$4-10/tCO<sub>2</sub>, making it economically viable and socially acceptable... (multiple other benefits)
- At all levels, it is necessary to understand the values of blue carbon ecosystems and protect them to benefit climate, community, and biodiversity.

During plenary discussions, it emerged that government deals on blue carbon can provide much-needed capital. However, at times, governments aren't aware of what they are signing for, which may lead to governance issues. Carbon management is very sensitive, and science still has much to discover. Therefore, Governments require more information to make certain decisions and better understand how the carbon trading model works.

### 2.2.3.3. Landscape for Blue Carbon Financing

Steve Lutz started with the rallying call “*the market is an excellent servant but a terrible master*” to highlight governance pitfalls bedeviling Carbon Financing. The issues include integrity questions, including whether the deal involves real carbon and who benefits. Other matters and perceived risks include opacity of the market, broker pressures, low offers, and low prices, significant vis a vis small scales, fraud and conflict, lack of

transparency, lack of guidance, lack of due diligence, the role of resellers, fair return on investment, among others. A map of UNEP's global blue carbon projects is presented in Figure 6.



*Figure 6: Map of UNEP's Blue Forest Projects*

However, blue carbon projects such as Mikoko Pamoja and the Vanga Blue Forest Projects can work. For example, the Vanga Blue Forest Project has conserved 460 ha of mangroves that store 5,023 tons of Carbon and provide 8,700 residents with US \$48,713 annually. Other examples include the Saloum Delta in Senegal, Vida Manglar in Colombia, Japan Blue Carbon, and Pakistan Delta Blue Carbon.

Participants were informed that some certification standards have proven fraudulent. To avoid governance pitfalls, BC projects should follow guidelines like the 2017 Blue Carbon Code of Conduct, endorsed by over 90 blue carbon stakeholders, and the 2021 High-Quality Blue Carbon Principles and Guidance.

The presentation also highlighted the following needs and opportunities for BC projects.

- **Regional framework for blue carbon financing**
  - Increased national governance & capacity
  - Carbon market standards & guidelines
  - Legislative and policy coordination & Guidance
  - Business plans
  - Marketing & pricing strategies
  - Coordination with private & financial sectors
- **Avoid a blue carbon silo!**

#### **2.2.3.4. Carbon Trading Policy and Strategies in Tanzania**

Advocate Wankyo Simon Mkono presented the policy and strategies that the Government of the United Republic of Tanzania (URT) has approved to regulate the Carbon market. Based on the United Nations Framework Convention on Climate Change (UNFCCC) of 1992, the Kyoto Protocol of 1997, and the Paris Agreement of 2015, they include the National Carbon Trading Guide of 2016 focuses on procedures for Clean Development Mechanism (CDM), and the Carbon Trading Regulations and Guidelines, 2022 (amended 2023). These regulations and guidelines aim to enhance the contribution of the URT to greenhouse gas emissions reduction and removal efforts, thereby minimizing climate vulnerability while ensuring environmental integrity and sustainable development. The guidelines provide for Streams of benefit in Carbon credit trading, including,

- Carbon credit trading projects are intended to promote environmental integrity and sustainability, enhance technology transfer, and economic and social development.
- Credits are used to offset carbon footprints or enable countries to meet their emission reduction commitments under the UNFCCC, the Kyoto Protocol, and the Paris Agreement.
- Economic benefits involve revenue generated from the sale of credits to parties intending to offset their carbon footprint.
- Communities get access to a clean and healthy environment and improve social services (water, health, education).

Participants were informed that as of October 20<sup>th</sup>, 2024, there were 62 registered carbon projects in Tanzania, as shown in Figure 7.

The presentation concluded as follows.

- Carbon projects present an opportunity to leverage and mobilize climate financing toward environmental conservation in the country.
- There still needs to be more awareness.
- National Carbon Regulations and Guidelines are fostering the country's implementation of carbon projects.



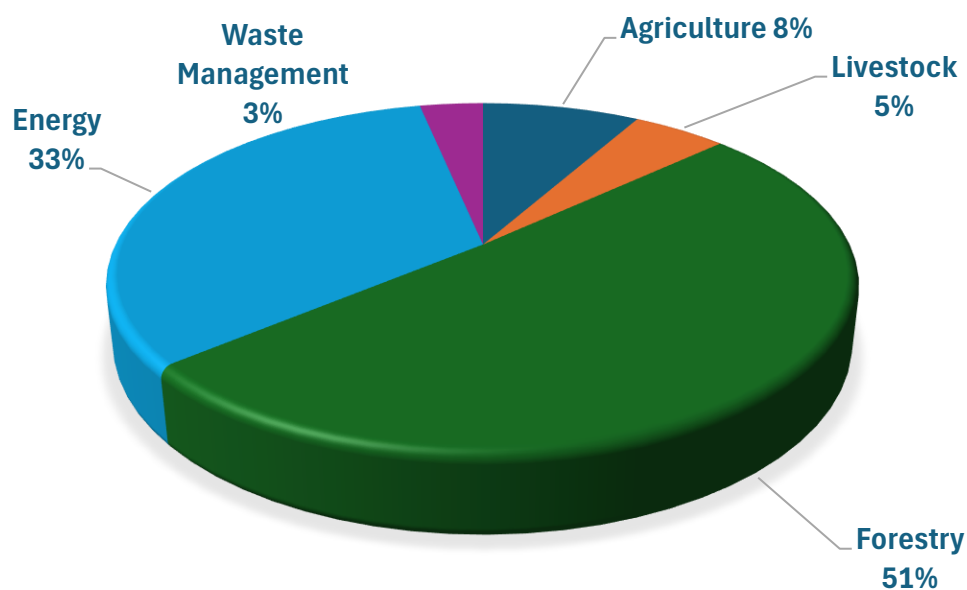


Figure 7: Registered Carbon Projects in the URT as of October 2024:

Source: Simon Wakyo - The First Vice Presidents Office, URT

#### 2.2.3.5. Economic Valuation of BCEs: The Case Study of the Kenya-Tanzania TBCA

Jackie Crawford of Prime Africa informed workshop participants of the bilateral initiative of the Governments of Kenya (through the KWS) and Tanzania (through MPRU) that sought to investigate the possibility of a coastal and marine Trans-Boundary Conservation Area (TBCA) with support from the Nairobi Convention and WIOMSA to protect highly sensitive, significant, and endangered marine and coastal biodiversity. The Kenya-Tanzania TBCA (KT-TBCA) would protect 10,000 ha of mangroves, 36,500 ha of coral reefs, 17,800 ha of tidal flats, 18,000 ha of seagrass beds, freshwater and estuarine systems, shelf and oceanic zones, and an abundance of species. Using a system valuation methodology that considers asset and ecosystem service analysis, ecosystem service valuation, and macroeconomic assessment, the blue economy values of the KT-TBCA were estimated, as shown in Table 1. However, although the management costs of such an MPA would be up to US \$24.5 m, the combined Net Present Value (NPV) of the benefits to the national economies accruing from KT-TBCA was approximated as US \$ 700,000,000). Some investment options are available, and natural capital returns are favorable, including debt-for-nature swapping, carbon financing, and concessions, with the potential to consistently generate upwards of US \$ 16m between 2024 and 2050.

Table 1: Pre-COVID Blue Economy Valuation of the KT-TBCA

Ecosystem Service	Estimated annual benefits (USD/Yr)		Asset value (NPV, USD)	
	Min	Max	Min	Max
Food provisioning	14,859,000	17,527,000	228,737,000	269,949,000
- Fish harvest	6,254,000	7,315,000	98,142,000	114,202,000
- Aquaculture production	1,034,000	1,398,000	16,300,000	22,053,000
Agricultural production	7,571,000	8,814,000	114,295,000	133,694,000
Raw materials	995,000	1,346,000	13,633,000	18,447,000
- Charcoal	975,000	1,319,000	13,363,000	18,080,000
- Timber	20,000	27,000	270,000	367,000
Carbon Cycling	121,000	346,000	2,488,000	6,227,000
- Mangroves	424,000	518,000	7,337,000	8,968,000
- Seagrass	172,000	303,000	2,741,000	4,849,000
Tourism and recreation	65,810,000	117,227,000	996,422,000	1,774,933,000
- Tourism	63,663,000	113,487,000	963,915,000	1,718,311,000
- Recreation	2,147,000	3,740,000	32,507,000	56,622,000
Regulation of extreme events	564,000	940,000	8,534,000	14,224,000
Scarce Habitats	48,299,000	94,832,000	731,285,000	1,435,851,000
Total	130,648,000	232,218,000	1,981,099,000	3,519,631,000

The study concluded that,

- The KT-TBCA would secure a vast and unique ecosystem, providing a livelihood to a large population.
- It would mitigate high and extreme risks to natural assets
- The TBCA management plan has the potential to increase natural capital value significantly, and thus, ecosystem service values and national economy values add

- Investment mechanisms exist through which to fund the TBCA management planning activities

### 2.2.3.6. BCEs and the Paris 2015 Agreement

Vincent Oeba illustrated the global trend in average land and sea temperature anomalies from 1850 to the present in Figure 8. These anomalies lead to ocean acidification, higher coastal inundation, and ecosystem loss due to erosion, coral bleaching, and the submergence of low-lying coastal areas.

The Paris Agreement contains 27 articles that provide the nexus with BCEs through

- Setting temperature Goal
- Nationally Determined Conditions (NDCs)
- Policy incentives to conserve & enhance reservoirs of GHG, reduce emissions, and sustainable management
- Mitigation
- Adaptation
- Loss and Damage
- Financing
- Technology Development and Transfer
- Capacity Building
- Climate Change Education, Public Awareness, Public Participation & Public Access to information
- Transparency and Reporting

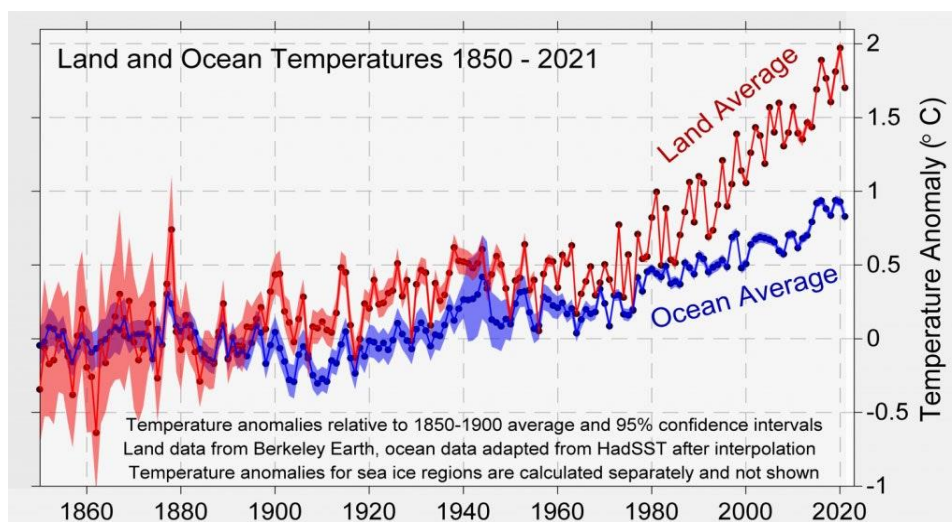


Figure 8: Global Land and Sea Temperature Trend between 1850 to the Present

Further, the importance of the carbon sequestration benefits from mangrove forests and other terrestrial and marine systems are engrained in the Paris Agreement, specifically in

Article 5.1, which states, “Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests.” Additionally, Article 4, 1(d) of the Convention states that all Parties shall “promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests, and oceans as well as other terrestrial, coastal and marine ecosystems.”

The workshop was informed that under the Paris Agreement, mangroves provide an investment opportunity for climate change mitigation and adaptation through avoided conversion and degradation of coastal ecosystems, restoration of mangroves, marshes, and seagrasses, enhancing the growth of kelp or shellfish, avoided conversion and degradation of peatlands, rewetting of drained peatlands, and restoration of peatland restoration. However, a rigorous approach and methodology for assessing the BCE potential exists.

Although Climate finance refers to the flow of funds towards activities that **reduce greenhouse gas emissions or help society adapt to climate change impacts**, the term is most frequently used in the context of international *climate change* negotiations, where climate finance—or international climate finance—is used to describe financial flows from developed to developing countries for climate change *mitigation/adaptation* activities. However, *Carbon financing* can be defined as *financial resources* provided to projects generating (or expected to generate) greenhouse gas emission reductions by purchasing such decreases. There is, therefore, a dire need for the development of bankable BCE projects, capacity development in methodologies for BCE accounting and reporting, technology and innovations transfer, and knowledge on how to avert or minimize losses and damages associated with climate change to the society, the economy, and the environment.

#### **2.2.3.7. Development of a Regional Sustainable Financing Mechanism**

Jeniffer Liu of the Blue Nature Alliance indicated that a regional conservation financing mechanism could support the WIO region in achieving 30X30 targets, building management capacity, and integrating conservation and blue economy through maritime security, environment and natural resources management, and knowledge management and capacity building. Although the WIO region has made progress in establishing MPAs and Locally Managed Marine Areas (LLMA), a significant gap exists between the current state and 30X30 aspirations. As of 2021, all the WIO MPAs only covered 7% of the WIO EEZ, with 18% coverage planned by 2024. Reaching the 30% coverage across the WIO would, therefore, require a considerable acceleration of MPA efforts, although Seychelles

and Mauritius are well ahead of other countries. However, Madagascar and Somalia present the most significant opportunities for establishing new MPAs.

Although WIO’s strengths lie in the government’s willingness and legislation to establish MPAs, there are many challenges concerning operating and managing MPAs, as shown in the METT scores illustrated in Figure 9. Nevertheless, significant opportunities exist to improve the region's sustainable financing models and capacity building. The vision of the WIO regional conservation financing mechanism is “*provide reliable, sustainable financing to enable WIO countries and the region to implement and achieve conservation ambitions.*” This vision will primarily be achieved by providing technical support and administering grants to marine conservation-focused projects, partners, and communities to address capacity and resource gaps, as shown by case studies in the Caribbean, Coral Triangle, Micronesia, and Mesoamerica.

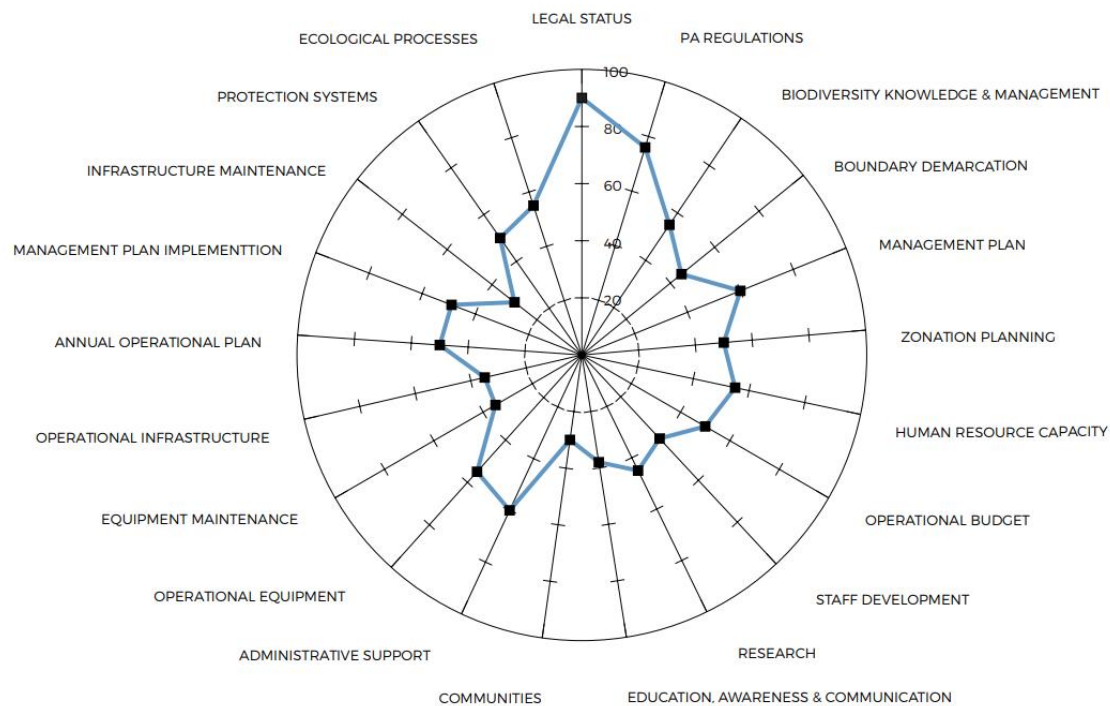


Figure 9: Indicator METT Scores for MPAs in WIO Region, 2018

Source: 2021 Report on WIO Marine Protected Areas Outlook Towards Achievement of Global Biodiversity Framework Targets

The key components in designing a regional financing mechanism include the following steps.

- i. Strategy and financial planning
- ii. Political infrastructure and collaboration
- iii. Fund distribution structure

- iv. Institutional structure and governance
- v. Funding sources

The presenter proposed a roadmap to designing and implementing a regional conservation financing mechanism as follows;

Phase 1: Feasibility assessment & design

Phase 2: Establishment

Phase 3: Fundraising and launch

The initiative is expected to have an approved regional conservation financing mechanism at the Nairobi Convention by COP12.

### 2.2.3.8. An Overview of Plan Vivo Foundation

Lilian Mwhaki outlined Plan Vivo Foundation as a charitable certification body that helps smallholder farmers and climate-sensitive communities access the Voluntary Carbon Market (VCM) and develop sustainable community land-use projects. The Foundation has over 25 years of experience, during which time over 358,000 people have planted over 30 million trees in certified forests, earning US \$38 m, as illustrated in Figure 10. This has been achieved through projects that protect and restore the environment, tackle climate change, and support climate-vulnerable communities.



Figure 10: Plan Vivo Foundation Impact Statement

The organization has developed holistic, verifiable, robust, transparent, and accountable certification standards called Plan Vivo Standards with certified projects generating Plan Vivo Certificates.

Workshop participants were informed that the EU Green Claims Directive, concerns about permanence, and developing an internal carbon price strategy are the key drivers of market trends in the VCM industry. Further, high-quality carbon credit is influenced by provable and verifiable additionality value, transparency, a benefit-sharing mechanism, and complete and Free Prior Informed Consent.

The Mikoko Pamoja project in Kenya is one of the Foundation's key carbon projects. It has protected and restored 117 ha of mangrove ecosystems, involving over 1,000 households. It is the world's first community-led project, and it has received three global awards and 20,095 Plan Vivo Certificates.

The other project is the transboundary Vanga Blue Forest initiative, which has protected and restored 460ha of mangrove ecosystems. With 9,000 members, it has been awarded 18,840 Plan Vivo Certificates.

Other examples of Carbon markets include;

- Carbon offsets allow companies to compensate for their emissions by purchasing carbon credits from projects that reduce or remove greenhouse gases. The primary focus is on achieving "carbon neutrality."
- Climate Contributions involve direct financial support for climate-positive activities (e.g., restoration or adaptation projects) without claiming specific emissions reductions. These contributions aim to support broader sustainability goals, like biodiversity or social co-benefits, rather than solely offsetting emissions.

Participants were informed of Plan Vivo's initiative to extend the "Carbon Plus" approach through the Plan Vivo Biodiversity Standard (PV Nature), a Certification that aims to enable the issuance of biodiversity credits/ certificates, provide responsible finance for Indigenous peoples and local communities to mobilize resources, and incentivize biodiversity conservation and restoration action.

#### **2.2.4. Key Messages and Action Points from Session II**

1. There is a dire need for capacity building and monitoring in BC Financing. The region can leverage the AFF Capacity Building Programme on Climate Finance and Carbon Finance.
2. We can shift how we practice conservation, for example, by building stakeholders' capacity to see conservation from a business and economic opportunity perspective.

3. The Region needs a robust & enabling regulatory framework for BC financing, including co-management frameworks between Governments and Communities.
4. Develop a regional BCE protocol. The UNEP Nairobi Convention is best placed to spearhead the design of a regional BC Financing Protocol.
5. Initiatives on BCE can ride on/leverage opportunities provided by the UNFCCC CoP decisions on Climate Change Mitigation, Adaptation, Capacity Building, Climate Financing, Technology Transfer, Education, and Transparent Accounting.
6. Continue efforts to bridge the Science-Policy divide.
7. TBCAs can secure a vast and unique ecosystem that provides a livelihood to a large population, mitigate high and extreme risks to natural assets, increase natural capital value, and increase national GDP.
8. Develop a Regional Technical Working Group on BCE (BCE Hub).
9. Promote peer learning & Data Sharing – sharing from each other where BC financing mechanisms are working.
10. Need for a Dedicated BC Financing Framework (different from terrestrial) – to support pricing, etc.
11. Mainstream BCE into national Policy, Institutional, & Legal Frameworks to provide clarity, public awareness, and coordination.
12. Promote Mapping, Economic Valuation, & Natural Capital Accounting of BCEs – to help build business cases.
13. Develop new technologies dedicated to African BCE, e.g., satellite & space technology.



### 2.2.5. Session III: Country Experiences

Tuqa Jirmo of the Nature Conservancy moderated this session. Various regional experts and scientists presented their country experiences, summarised in the subsections below.

#### 2.2.5.1. Blue Carbon Assessment in Mauritius Seagrass Ecosystems

Sundy Ramah of the Albion Fisheries Research Centre (AFRC) in Mauritius informed workshop participants of the scientific assessment of the BC potential of seagrass ecosystems in Mauritius. In Mauritius, seagrass meadows have been receding due to various pressures, including sea-based activities and coastal development, seagrass beds being cleared to provide a more appealing lagoon for tourist attraction, and mechanical destruction and pollutant inputs. The situation is exacerbated by a lack of knowledge on seagrass density & distribution, a knowledge gap on the efficiency of seagrass beds to act as a natural carbon sink in Mauritius and a need for baseline data on carbon storage capacity.

The AFRC, therefore, carried out research on seagrass assessment & monitoring around the island, assessment of Blue Carbon storage capacity, and sensitizing and educating the community and the government on seagrass potential. The evaluation and monitoring yielded five species of seagrass: *Syringodium isoetifolium*, *Halodule uninervis*, *Thalassodendron ciliatum*, *Halophila ovalis*, and *Halophila stipulacea*, distributed across five islands in Mauritius.

The calculated Blue Carbon potential around all five islands is illustrated in Figure 11. This result implies that the five seagrass meadows in Mauritius captured CO<sub>2</sub> for approximately 94,000 cars driving approximately 20,000 km per year, or 16% of the total CO<sub>2</sub>. Further outcomes of the seagrass mapping and monitoring program include a map depicting the distribution and diversity of seagrass species in the lagoons of Mauritius, acquisition of continuous long-term monitoring data on seagrass and its health status, the inclusion of seagrass protection in the new Fisheries Act 2023, the potential for generating blue carbon credit for trading is now known, and, a National Task Force on Blue Carbon was formally constituted. The task force aims to bring blue carbon practitioners to work together towards capacity building and nature-based solutions involving blue carbon ecosystems as well as bring forth recommendations, potential implementation, policy change, and finance adaptation opportunities on a national level and in line with any approved Regional and International Standards/Framework.

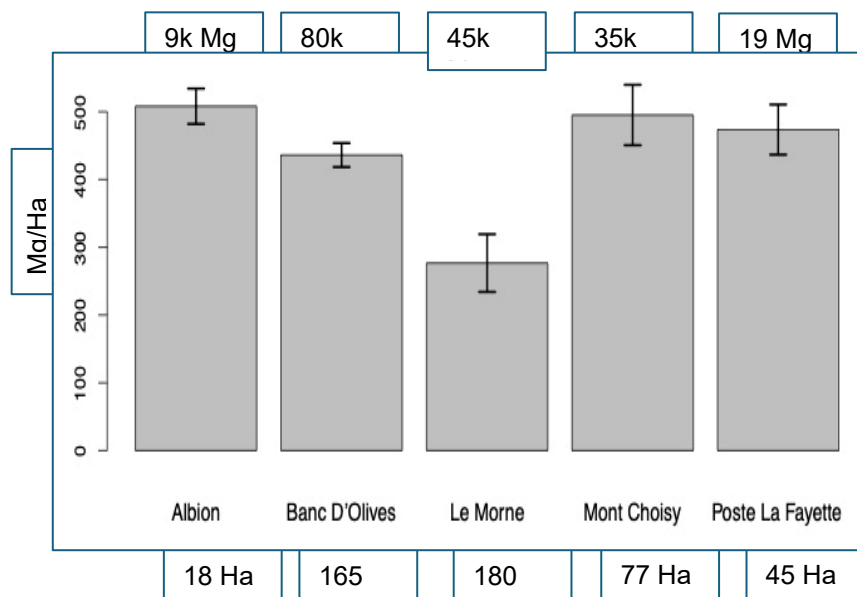


Figure 11: Assessed Blue Carbon Storage Capacity for Mauritius

### 2.2.5.2. Blue Carbon Assessment in Kenyan Seagrass Ecosystems,

Dubbed the savannas of the Kenyan coast, the seagrass ecosystems were assessed for their Carbon potential by Jacqueline Uku of KMFRI. She informed participants of the existence of a National Framework for Seagrass Research in Kenya, which includes a strategy that highlights the threats facing coral reef and seagrass ecosystems and proposes appropriate actions to enhance their conservation at a national level. However, Kenya has yet to incorporate seagrasses into the NDC as the Paris Agreement requires.

Kenya's average seagrass cover is about 50%. However, a study of sea urchin herbivory in Watamu, Diani, and Mombasa indicates that grazing rates of sea urchins exceed seagrass growth rates (overgrazing), which is on the decline (See Figure 12) but in tandem with global trends.

The seagrass restoration project in Diani after the herbivory events using the seagrasses *Thalassodendron ciliatum* and *Thalassia hemprichii* showed that a diverse array of seagrass species was recruited in the experimental area. This indicates that seagrass restoration is challenging, but the habitat may be rehabilitated instead.

The presentation also illustrated the challenges and made recommendations for incorporating seagrass beds into a blue carbon credit system, including;

- Community participation - balancing fisheries and conservation. Community-based conservation allows community groups to manage natural resources through Community Managed Areas (CMAs) under the Beach Management Regulations.

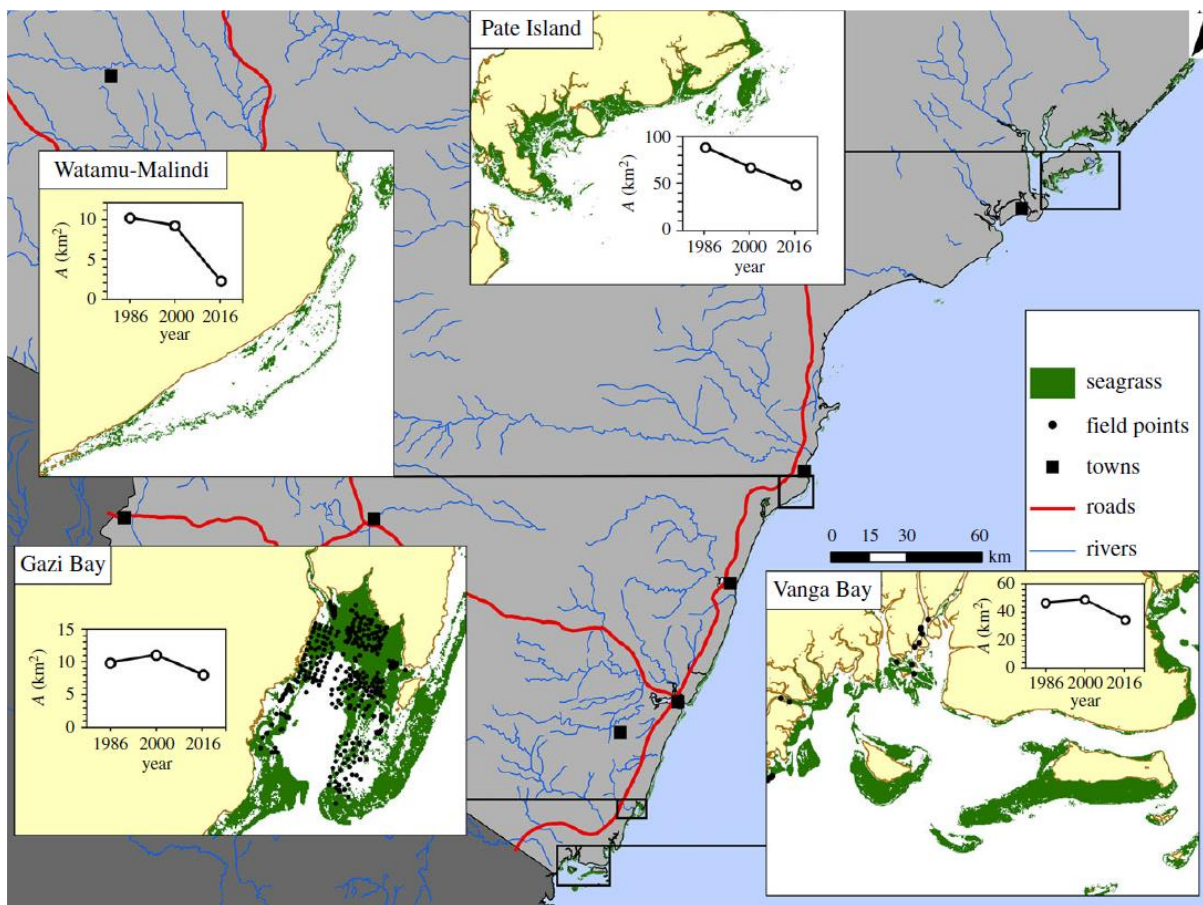


Figure 12: Changes in Seagrass Cover in Kenya

- Permanence: The length of time that the carbon storage (or another ecosystem service) will be delivered. The benefits delivered should remain the same, for example, by deforestation or natural processes.
- Leakage: The risk that damaging activities excluded from a project area by management measures occur elsewhere instead, rather than being decreased or prevented altogether
- Additionality: Projects need to demonstrate that their activities are additional to what would have taken place in the absence of the project
- Sharing of benefits accruing from blue carbon ecosystems - there is a need for a new model for seagrasses.

The following is a summary of lessons learned from the Kenyan seagrass perspective;

- Effective community engagement
  - Continuous
  - Patient
  - Subjective to the community
- Donor funding

- Long-term
- Flexible
- Synergize donor efforts
- Diversify
  - Funding
  - Conservation goals
- Harmonize community and environment
  - Sustainable utilization
- Science-community interaction
  - Relevant
  - Practical
- Inclusion of seagrasses into Kenya’s climate actions in a significant manner by engagement with policy-level actors and mapping the space
- Information to update Kenya’s NDCs to include seagrasses (Blue Carbon)
- Integration of the information into a climate-smart Marine Spatial Plan for Kenya

### **2.2.5.3. Blue Carbon Assessment in Tanzanian Seagrass Ecosystems,**

The presentation by Blandina Lugendo at the School of Aquatic Sciences and Fisheries Technology (SoAF), University of Dar es Salaam, described seagrass meadows as among the critical coastal blue carbon ecosystems, alongside mangrove and salt marshes, providing many socio-ecological benefits, including Carbon stocks and sequestration. Tanzania has 12 seagrass species, including *Zostera capensis*, globally vulnerable and endangered in some countries. Others include *Enhalus acoroides*, *Cymodocea rotundata*, *Ocean serrulata* (formerly *Cymodocea serrulata*), *Halophila ovalis*, *H. minor*, *H. stipulacea*, *Halodule uninervis*, *H. pinifolia* (*H. wrightii*), *Thalassia hemprichii*, *Thalassodendron ciliatum*, and *Syringodium isoetifolium*. As illustrated in Figure 13, the assessment reported a total area of 2,817 km<sup>2</sup>, with 2,000.8 km<sup>2</sup> in Mainland Tanzania and 816.23 km<sup>2</sup> in Zanzibar. Further, studies show that generally, seagrass habitats contain higher mean sedimentary carbon stock levels than nearby unvegetated habitats.

The study exemplifies two pathways by which land-based human activities (i.e., sewage waste management and mangrove deforestation) can alter seagrass meadows’ carbon storage capacity, showcasing opportunities for managing vegetated coastal organic carbon sinks. Findings revealed a significantly higher percentage of organic carbon in seagrass meadows compared to unvegetated areas, confirming that seagrass heightens organic carbon storage. Further, long-term shading and grazing (clipping), which leads to reduced seagrass growth and soil erosion, may lead to loss in sedimentary carbon. These findings can guide coastal management in protecting seagrass meadows as sinks of atmospheric CO<sub>2</sub>.

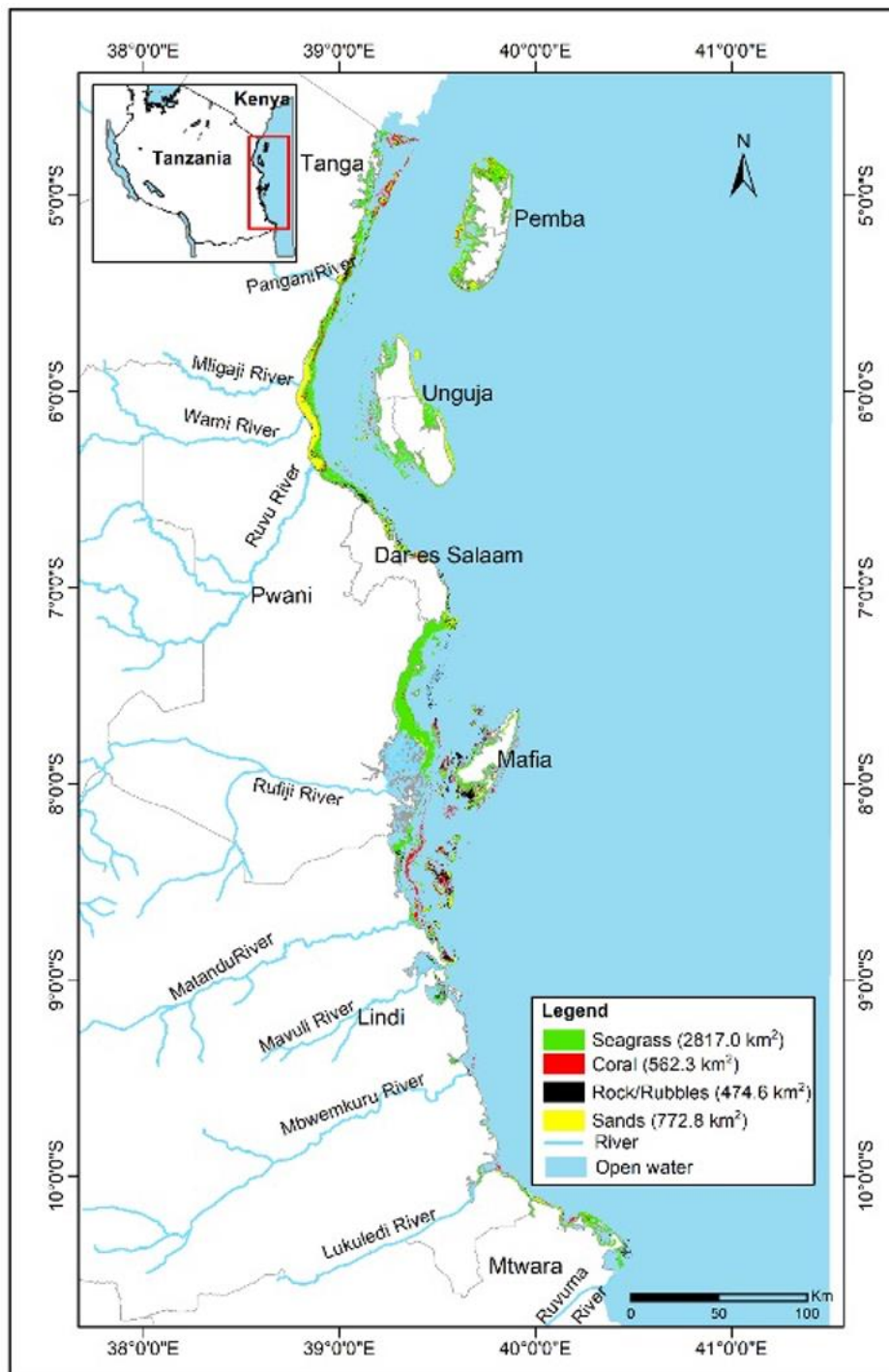


Figure 13: Distribution and Extent of Seagrass Meadows in Tanzania

The presentation concluded by making various recommendations as follows;

- More research to strengthen the knowledge base, i.e., undertake a focused study that will generate the required information

- Involve key/appropriate stakeholders (policy/decision makers, practitioners, resource users) in research
- Capacity building – researchers and practitioners – to undertake seagrass-related study and management
- Establish national carbon stocks for seagrasses - standardize methods and reporting.
- Regular monitoring of seagrass meadows (extent, carbon stocks) to establish changes/trends
- Carry out active seagrass restoration
- Community engagement to cultivate ownership
- Public awareness raising on the mitigation potential of climate change impacts associated with healthy seagrass meadows
- Advocacy – to raise the profile of seagrasses in national conservation priorities, including their inclusion in the NDCs.

#### **2.2.5.4. Mangrove and Seagrass Blue Carbon Assessment in Mozambique**

Salomao Bandeira and Célia Macamo of Eduardo Mondlane University presented Mozambique as the country with the second-highest mangrove acreage in Africa and the highest in WIO, at 3,054 Km<sup>2</sup> (10% of African mangrove cover, 40% of WIO region mangrove cover, and 2% of global coverage). Mangroves help mitigate climate change by having a high Carbon sequestration rate and storage capacity, providing financial incentives through REDD+, supporting local livelihoods, and protecting coastal areas against forces of nature, like cyclones.

On the other hand, seagrasses provide various ecosystem goods and services, as illustrated in Figure 14. However, the seagrass meadows of Mozambique degrade at a rate of 0.265 to 7.2 % yearly, with Western Maputo Bay degrading the fastest due to sedimentation from flooding and seagrass uprooting by clam fishers.

The presentation concluded by proposing the following opportunities to halt degradation

#### **Mangroves**

- Start PES projects: Limpopo estuary has all the elements for a carbon project, including carbon estimates, a strong community structure, a restored area of more than 120 ha, a community management plan, and is about to be declared a community-managed fishing area
- Blue Carbon Potential: carbon studies in the adjacent wetlands for improved management and to help restore the sustainability of benefits out of the mangrove forest
- More studies to acquire knowledge about the pristine Zambezi Delta forest

## Seagrass

- Carry out mapping and verification
- link with livelihoods (macroinvertebrate + fish)
- Restoration to enhance carbon stocks

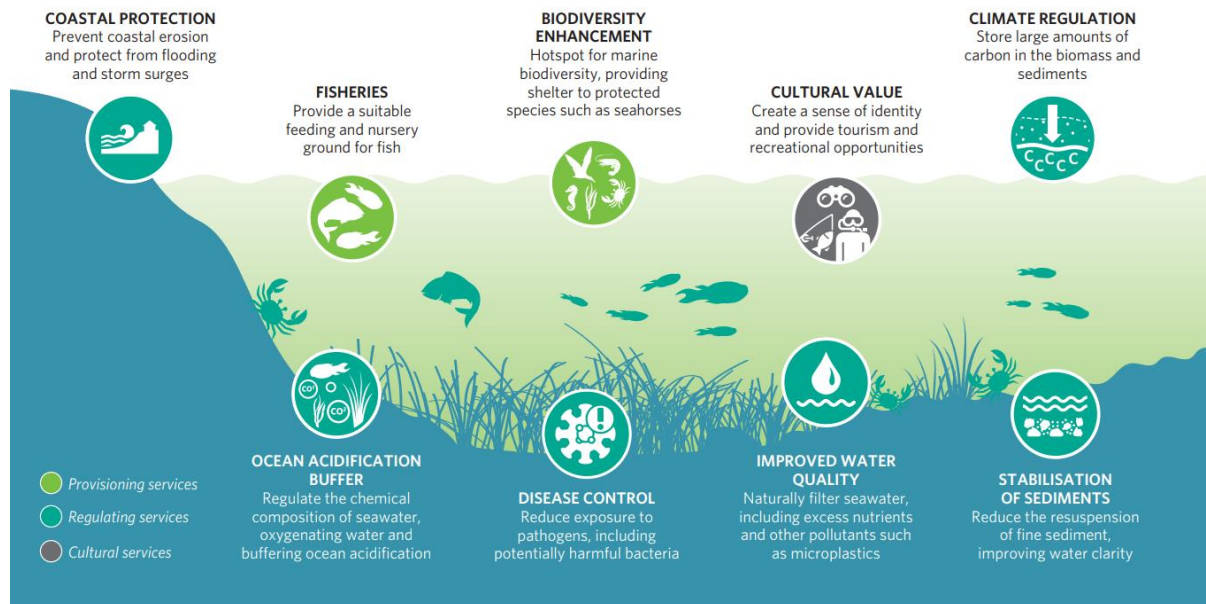


Figure 14: Ecosystem Goods and Services of Seagrass

### 2.2.5.5. Madagascar mangrove carbon conservation project,

Gildas Todinanahary of the University of Toliara informed workshop participants that in 2019, the mangroves of Madagascar covered an area of 391,000 ha, being the 4th largest in Africa and the second in the WIO region. However, in the same year, the country was losing approximately 3,200 ha/yr mainly from charcoal burning, illegal logging, conversion of mangrove land for other uses (agriculture, shrimp farming, salt production, human settlements, and hotels, etc.), pollution, especially in urban areas, and the direct effects of climate change (cyclones, freshwater inundation).

In Madagascar, 23 out of 123 PAs have mangroves, 13 of which are locally managed marine areas. Several mangrove-based blue carbon projects exist in Madagascar, the largest of which is the Tahiry Honko project (also the world's largest blue carbon conservation project). Launched in 2019, it is certified by the Plan Vivo standard as sequestering 1,371 tCO<sub>2</sub>/year.

The National strategy for the integrated management of the mangrove ecosystem in Madagascar (2022–2032) seeks to restore degraded sites and preserve the forest cover of 390,000Ha of mangroves over the next ten years. Further, a decree was issued in 2021

to regulate the use of REDD+ in Madagascar. However, the decree does not cover "blue carbon," which will be addressed in a separate regulation, possibly the one that will establish the legal and institutional framework for using international and national mechanisms based on the carbon market.