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MARINE SPATIAL PLANNING

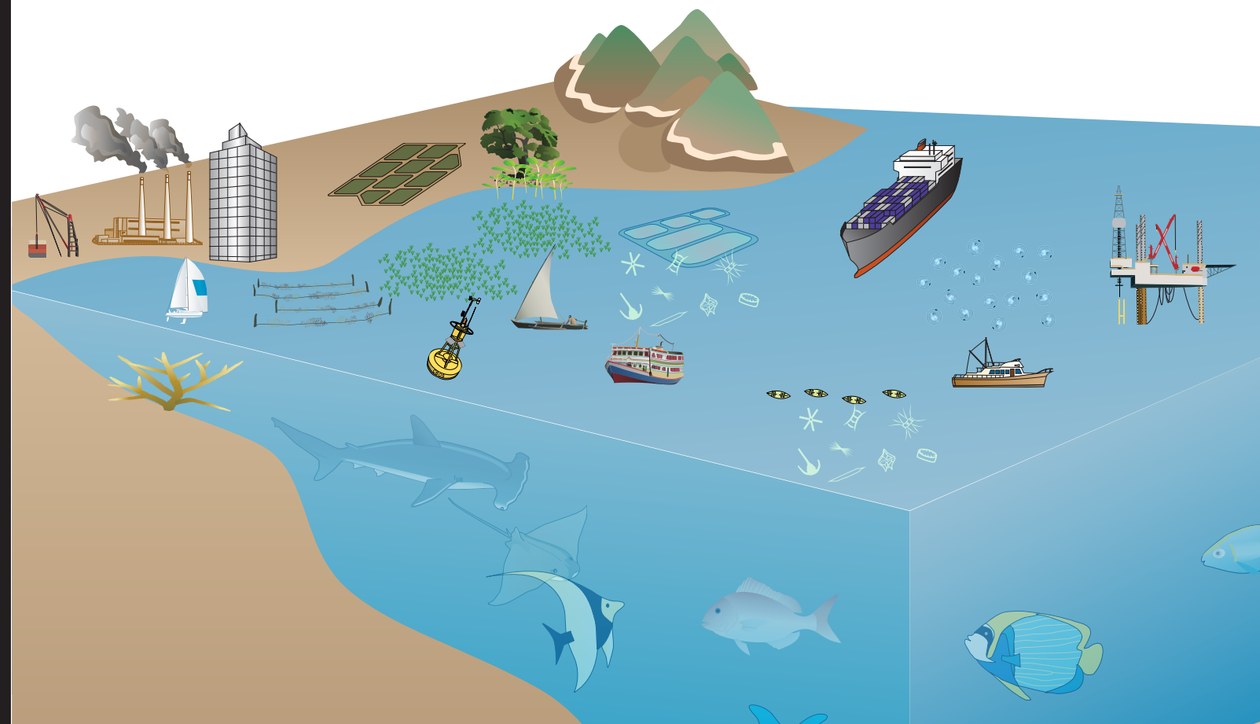
UNITED REPUBLIC OF TANZANIA

THE UNITED REPUBLIC OF TANZANIA

VICE PRESIDENT'S OFFICE

SCOPING STUDY

THE STATE OF MARINE SPATIAL PLANNING IN TANZANIA



SCOPING STUDY ON THE STATE OF MARINE SPATIAL PLANNING IN THE UNITED REPUBLIC OF TANZANIA

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The Vice President's Office is committed to ensure that stakeholders will benefit immensely from the findings presented in this scoping study and find it useful. It is my hope that this report will form the basis and prepare the URT for establishment of a Marine Spatial Planning Framework for the URT which will facilitate her pursuit of a sustainable Blue Economy.

Mary Ngelela Maganga
Permanent Secretary
VICE PRESIDENT'S OFFICE

CONTRIBUTORS AND REVIEWERS

Marine Spatial Planning (MSP) Scoping Study is a collaborative effort and many people have contributed. We would like to express our heartfelt gratitude and appreciation to the individuals who played an instrumental role in this study. Their active participation and unwavering commitment have significantly contributed to the success and effectiveness of the MSP study.

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EXECUTIVE SUMMARY

Since 2012, the emerging concept of the 'sustainable blue economy' has been embraced by many coastal and island nations as a promising opportunity to support economic diversification and growth, embedded in fundamental principles of environmental sustainability. To this end, the government of the United Republic of Tanzania (hereafter 'the URT') has signalled its intention to mainstream the sustainable blue economy into national development planning frameworks, and to the economy at large.

In developing a sustainable blue economy, the increasing demand for marine space, along with the multiple pressures on marine and coastal resources, requires a more integrated approach to the management of the URT's marine space. Marine spatial planning (MSP) has increasingly been promoted globally as one tool that can help address complex conflicts in coastal and marine areas, particularly in heavily used areas. MSP is essential for implementing the sustainable blue economy. To support the URT in its preparations to implement a national-scale MSP framework, the Office of the Vice President has undertaken this MSP Scoping Study in order to analyse the current state of the URT's preparedness for MSP, and define the steps needed to design and implement a national MSP framework. This MSP Scoping Study is the first in a number of steps designed to inform and prepare the URT for the establishment of a national-scale MSP process, which will facilitate the URT's development of a sustainable blue economy.

The aim of this study was to assess the current situation of marine spatial planning (MSP) arrangements in Tanzania, both on the mainland and in Zanzibar. This involved analyzing the existing legal, policy, and institutional frameworks for implementing MSP. The study also aimed to identify any gaps in these arrangements that hinder Tanzania's ability to develop a comprehensive MSP framework. Based on these identified gaps, recommendations were provided for necessary reforms in institutional, policy, and legal aspects, as well as existing spatial management tools, to enable Tanzania to establish a comprehensive MSP framework. The ultimate objective of the study was to evaluate Tanzania's readiness for MSP and provide guidance on the necessary steps to design and implement a complete MSP framework. This study serves as an initial step in preparing Tanzania for the establishment of a comprehensive national-scale MSP process, which will support the country's pursuit of a sustainable blue economy.

The purpose of this report is to provide valuable information for discussions regarding reforms to current ocean management systems that will facilitate the implementation of a comprehensive marine spatial planning (MSP) framework, thus contributing to the marine conservation objectives of the United Republic of Tanzania (URT). The report serves as a baseline assessment of the URT's current readiness to undertake comprehensive MSP across its exclusive economic zone (EEZ). It includes an overview of the important marine habitats, resources, and key economic sectors associated with the URT's blue economy. Additionally, the report examines the national context for MSP, encompassing the governance structures and provides a brief analysis of existing policy, legal, and institutional frameworks in both Tanzania Mainland and Zanzibar. Furthermore, it presents an analysis of existing arrangements that can support MSP development in the URT, as well as an overview of the key gaps and challenges that must be addressed to realize effective MSP.

The URT is well-positioned to begin MSP activities, thanks to existing knowledge and engagement by local institutions regarding inshore resources. Previous spatial planning experience at various levels, including land-use planning and marine conservation, by Mainland and Zanzibar government institutions provides a strong foundation for a comprehensive MSP framework. However, there is a need to expand the focus beyond conservation and fishing in coastal waters and adopt a systematic approach that integrates various spatial management measures. This should

encompass the entire EEZ and address broader ocean issues. Clear goals for MSP and the development of a dedicated national Ocean Governance Policy are necessary to guide ocean affairs effectively in line with the URT's conservation and resource management objectives. Based on the analysis conducted in this scoping study, this report puts forward 23 recommendations aimed at addressing critical gaps and potential barriers to the effective implementation of MSP across the URT. These recommendations include:

1. Define and establish a VPO-MoBEF MSP coordination and implementation mechanism, with well-defined mandates and dedicated technical resources to support it;
2. Establish an effective mechanism to oversee MSP co-ordination in areas where Mainland Tanzania and Zanzibar have adjacent jurisdictions and common management interests;
3. Undertake an assessment of capacity needs across the key implementing agencies and stakeholders;
4. Prepare a National Ocean Governance Policy and Strategy, in alignment with the UNEP Nairobi Convention Regional Seas Programme, to guide the development and implementation of the blue economy and MSP across the URT;
5. Establish a clear legal basis for MSP in the URT;
6. Define and prioritize goals and objectives for MSP through a collaborative 'Future Scenario Planning' process.
7. Prepare a systematic framework of planning areas that recognises: (a) the different levels of jurisdiction involved in planning and management of the URT's maritime space: and (b) the level of knowledge and understanding available to support planning and decision making across different parts of the URT's maritime space;
8. Undertake a prioritisation of planning areas such that the initial focus for MSP should be on those coastal waters that support the most activities and have the most user conflicts; It is suggested that this initial focus should

be on those areas of water between Zanzibar and Mainland Tanzania;

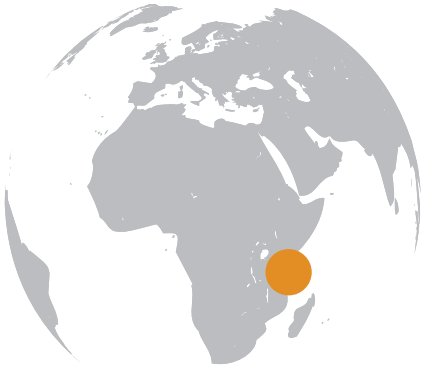
9. Undertake a review of the Territorial Sea and Exclusive Economic Zone Act as part of the MSP process;
10. Enhance Inter-sectoral collaboration with respect to internal waters and determine the extent of MSP for local-level spatial plans;
11. Define the scope of existing and future uses to be included in MSP;
12. Prepare a Strategic Environmental Assessment (SEA) for MSP across the URT that takes account of the proposed ports development and related Blue Economy infrastructure;
13. Undertake an additional scoping study analysis that assesses the application of MSP to the freshwater bodies of the URT;
14. Collate and map existing baseline data and assess future data needs and gaps to support MSP;
15. Develop a comprehensive data capture/ procurement programme;
16. Establish protocols and a national-level marine spatial data clearing mechanism to allow for the sharing of data between different institutions and organisations;
17. Undertake an audit of international MSR undertaken in the URT's marine waters and determine how to capture data from researchers;
18. Develop and implement a comprehensive programme for stakeholder engagement to ensure that coastal communities and other stakeholders can be proactively involved in the MSP process;
19. Adopt a more systematic approach to marine conservation planning that inter alia, considers how other biodiversity objectives can be served using existing spatial designations (i.e. MPAs, CFMAs) and linking these to other spatial management mechanisms;
20. Seek to designate 30% of the URT's marine space for protection from the most harmful human activities by 2030;
21. Update Key Sectoral Legislations to integrate MSP principles;
22. Establish a clear legal basis for the protection of subsea pipelines and cables;
23. Prepare an MSP zoning framework to guide appropriate tools for management controls.

In summary, this report includes a proposed implementation plan that outlines the necessary actions to address the 23 recommendations discussed in Chapter 5. The implementation plan serves as a roadmap for future MSP activities and provides valuable insight for potential donors and development partners to comprehend the specific requirements of the URT in terms of MSP and the sustainable blue economy. Additionally, a provisional budget is provided to support the draft Implementation Plan.

ABBREVIATIONS AND ACRONYMS

AIMS	Africa Integrated Maritime Strategy
AIS	Automated Identification System
ASCLME	Agulhas and Somalia Current Large Marine Ecosystem
BE	Blue economy
BMU	Beach management Unit
CBD	Convention on Biological Diversity
CCFR	[FAO] Voluntary Code of Conduct for Responsible Fishing
CFMA	Collaborative Fisheries Management Areas
CLCS	[United Nations] Commission on the Limits of the Continental Shelf
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DSFA	Deep Sea Fishing Authority
EAF	Ecosystem Approach to Fisheries
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EU	European Union
FAO	[United Nations] Food and Agriculture Organisation
FMC	Fisheries Monitoring Centre
FRMCA	Forest Resources Management and Conservation Act
FYDR III	National Five Year Development Plan 2021/22 – 2025/26
GMP	General management Plan
ICM	Integrated Coastal Management
IGO	Intergovernmental Organisation
IKI	International Climate Initiative [Internationale Klimaschutzinitiative]
IMO	[United Nations] International Maritime Organisation
km	Kilometre
NGO	Non-governmental Organisation
nm	Nautical Mile
LGA	Local Government Authority
LMMA	Locally Marine Managed Area
MARPOL	International Convention for the Prevention of Pollution from Ships
MoBEF	Ministry of Blue Economy and Fisheries [Zanzibar]
MCA	Marine Conservation Area
MMA	Marine Managed Area
MNRT	Ministry of Natural Resources and Tourism
MPA	Marine Protected Area
MPRA	Marine Parks and Reserves Act
MPRU	Marine Parks and Reserves Unit

MSP	Marine Spatial Plan(ning)
MSR	Marine Scientific Research
NEAC	National Environmental Advisory Committee
NEMC	National Environment Management Council
NEMPSI	National Environmental Master Plan for Strategic Intervention (2022-2032)
NEP	National Environmental Policy
NFP	National Fisheries Policy
NICEMS	National Integrated Coastal Environment Management Strategy
NPA	National Parks Act
PSC	Port State Control
PURA	Petroleum Upstream Regulatory Authority
SADC	Southern African Development Community
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SOLAS	International Convention for the Safety of Life at Sea
SWIOFC	South West Indian Ocean Fisheries Commission
TAC	Technical Advisory Committee
TAFIRI	Tanzania Fisheries Research Institute
TANAPA	Tanzania National Parks Authority
TASAC	Tanzania Shipping Agencies Corporation
TDV 25	Tanzania Development Vision 2025
TMPU	Tanzania Marine Police Unit
TNC	The Nature Conservancy
TPA	Tanzania Ports Authority
TPDF	Tanzania People's Defence Force
ToR	Terms of Reference
TPDC	Tanzania Petroleum Development Corporation
UNCLOS	United Nations Convention on the Law of the Sea (1982)
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
URT	United Republic of Tanzania
VPO	Office of the Vice President of the United Republic of Tanzania
WCA	Wildlife Conservation Act
WIO	Western Indian Ocean
ZEMA	Zanzibar Environmental Management Authority
ZMA	Zanzibar Maritime Authority
ZPC	Zanzibar Ports Corporation
ZPDC	Zanzibar Petroleum Development Company
ZPRA	Zanzibar Petroleum Regulatory Authority



CHAPTER ONE

THE INTRODUCTION

1.1. BACKGROUND AND RATIONALE

Since 2012, the emerging concept of 'blue economy' has been embraced by many coastal and island nations as a promising avenue for economic diversification and growth, embedded in fundamental principles of environmental sustainability. To this end, the government of the United Republic of Tanzania (hereafter 'the URT') has signalled its intention to mainstream the blue economy into national development planning frameworks and the economy at large. In 2012, the Africa Union (AU) endorsed the 2050 Africa Integrated Maritime Strategy (2050 AIM Strategy), which provides a broad framework for the protection and sustainable exploitation of Africa's inland waters, oceans and seas for wealth creation. The Strategy describes the Blue Economy as the "new frontier of African Renaissance." Building on this Strategy is the Agenda 2063, the African Union's long-term vision for Africa's development.

Agenda 2063 envisages the African blue economy to be "a major contributor to continental transformation and growth." In the context of Africa, the blue economy covers aquatic and marine spaces, including oceans, seas, coasts, lakes, rivers, and underground water, and it comprises a range of productive sectors, such as fisheries, aquaculture, tourism, transport, shipbuilding, energy, bioprospecting, underwater mining and related activities (UNECA, 2016). In developing a sustainable blue economy, the increasing demand for marine space, along with the multiple pressures on marine and coastal resources, requires an integrated approach to the utilisation and management of ocean space. In recent years, marine spatial planning (MSP) has been the focus of considerable interest as a practical way to establish a more rational and integrated organisation of marine space.

MSP seeks to address the interactions between different uses and users of marine space, to balance demands for development with the need to protect marine ecosystems, and to achieve social and economic objectives in an open and planned way. According to UNECA, MSP is essential for implementing the blue economy. The 2050 Africa Integrated Maritime Strategy (AIMS), a mechanism for the implementation of the blue economy in Africa, also confirms the importance of MSP as a tool for the implementation of the blue economy and proposes MSP as a mechanism to balance competing sector-based interests (African Union, 2012). MSP is, therefore, an important tool that will assist the URT in achieving its blue economy goals.

1.2. THE SCOPING STUDY

The URT has strengthened the exploitation of coastal and marine resources by putting in place legal and institutional framework that will encourage increased investment in the blue economy. The action is expected to increase pressure on the coastal and marine environment due to many uses and threats resulting from overexploitation and multi-user conflict. Thus an approach that will address the interactions between different uses of marine space, to balance demands for development with the need to protect marine ecosystem, and to achieve social and economic objectives in an open and planned way is of paramount importance. MSP has been considered as an ocean governance tool that supports creation and establishment of a more rational organisation of the use of marine space with the purpose of finding a common ground on certain ecological, economic and social development issues. As such, when considering sustainable blue economy a comprehensive MSP has to be prioritized in order to greatly improve the management of maritime space, reduce the loss of ecosystem services, help address or avoid conflict, and create economies of scale and efficiencies for enforcement and management.

In this regard, the Government of the United Republic of Tanzania and Revolutionary Government of Zanzibar have conducted a scoping study on the status of marine spatial planning in Tanzania's near-shore and offshore waters, as a preparation to implement a national-scale MSP

framework. The assignment was conducted in partnership with The Nature Conservancy with financial support from the German Government-funded International Climate Initiative (IKI). The study intended to assess the current state of the country's preparedness for MSP, and to define the steps needed to design and implement a comprehensive MSP framework in the context of the existing policy, legal and institutional settings in Tanzania Mainland and Zanzibar. This study is the first in a number of steps designed to inform and prepare the URT for the establishment of a comprehensive national-scale MSP process, which will facilitate the URT's development of a sustainable blue economy. The objectives of this study were therefore to:

i. Undertake a study on the current status of MSP arrangements for the maritime waters of Tanzania Mainland and Zanzibar, including an analysis of the specific legal, policy and institutional arrangements for implementing MSP;

ii. Identify gaps in the existing arrangements that constrain Tanzania's ability to develop a comprehensive MSP framework; and

iii. On the basis of the identified gaps, recommend appropriate reforms to the existing institutional, policy and legal arrangements and existing spatial management tools to enable Tanzania to pursue the development of a comprehensive MSP framework.

The study comprises of two main components. Firstly, there is a Scoping Study conducted to assess the current state of Marine Spatial Planning (MSP) in both Mainland Tanzania and Zanzibar's maritime waters. This assessment focuses on various aspects, such as the efficient conservation, management, and utilization of marine living and non-living resources, as well as considering the competing uses for the development of the blue economy. Additionally, the study takes into account Tanzania's international commitments and national development objectives concerning the protection, preservation, and sustainable utilization of its maritime space and resources.

Secondly, the study includes a comprehensive examination of the legal, policy, and administrative aspects pertaining to the management of Mainland Tanzania's and Zanzibar maritime waters. This analysis encompasses the relevant legislation, policies, plans, and strategies at various levels, including local, national, regional, and international scales. The primary focus is to assess how these legal and policy frameworks specifically intersect with Marine Spatial Planning (MSP) in the United Republic of Tanzania (URT).

This report presents a synthesis of findings from two components, with the purpose of assessing the readiness of the United Republic of Tanzania (URT) to undertake comprehensive marine spatial planning, including the Exclusive Economic Zone (EEZ). The report aims to inform discussions on reform to existing ocean management systems to establish a robust marine spatial planning framework. By doing so, it aims to support the attainment of both global and URT specific marine conservation objectives. The report provides valuable insights and recommendations to guide the implementation of effective marine spatial planning practices and advance the URT's marine conservation goals.

1.2.1. Approach to the scoping study

The scoping study was effectively managed through a well-structured framework that facilitated its successful execution. The *Executing Agency*, which was the VPO, assumed the role of overseeing and approving the study. To ensure comprehensive input and collaboration, a steering committee composed of relevant government ministries, development partners, and civil societies was convened by the VPO. This committee worked closely with the study team to ensure the final scoping report was completed to satisfaction. Taking charge of the project's day-to-day operations was the TNC, which was responsible for delivering the agreed-upon project deliverables. A technical team comprising technical experts from Tanzania Mainland and Zanzibar, as well as representatives from TNC, CSIRO, and independent experts with expertise in ocean governance and MSP assisted the implementation. These management arrangements were crucial in ensuring the successful completion of the scoping study.

1.2.2. Approach

The study was carried out in several distinct phases, each serving a specific purpose. The first phase was the *Preparation phase*, which involved a technical meeting held on March 16th and 17th, 2022, in Dodoma. Government stakeholders from Tanzania Mainland and Zanzibar attended the meeting to enhance the technical team's understanding of the MSP process and develop the terms of reference for the scoping study. *The Inception phase* followed, with workshops conducted in Zanzibar on July 11, 2022, and Tanzania Mainland on July 13, 2022. These workshops aimed to provide a deeper understanding of the MSP scoping assignment.

The *Stakeholder Consultation and Data Gathering phase* involved direct courtesy calls to various key stakeholders between July 2nd and August 10th, 2022. These stakeholders included key ministries, government technical agencies, research and academia, experts, blue economy development partners, and international and local organizations. The purpose was to gather policy, legal, and strategic information, as well as spatial data, to support the MSP process. *The Analysis and Reporting phase* took place from August 2022 to April 2023. During this phase, the gathered information and data were carefully reviewed and analyzed to ensure that the final report accurately reflected the needs, intentions, and aspirations of the Government of the URT and the Revolutionary Government of Zanzibar.

The *Review and Delivery phase* included an internal review process conducted by Tanzania Mainland and Zanzibar in Arusha from October 9th to 13th, 2022. Additionally, a meeting organized by the Ministry of Blue Economy and Fisheries took place in Zanzibar on October 24th and 25th, 2022. *The Validation Phase* involved a wide range of stakeholders and was co-organized by the VPO, the Ministry of Blue Economy and Fisheries, and TNC. The validation workshop, held on March 17th and 18th, 2023, in Dar es Salaam, Tanzania, aimed to engage ministries, government technical agencies, research and academia, experts, Blue Economy Development Partners (BE-DPG), international, and local organizations. The scoping report was adopted during this workshop, pending the addressing of any provided comments.

1.2.3. Final Review of MSP Scoping Report:

In order to ensure that all comments provided were fully addressed, a technical meeting was held from April 18th to 20th, 2023, to conduct a final review of the report and prepare it for submission to the government. The revisions made to the report were aimed at improving its accuracy and completeness, and ensuring that it met all necessary requirements. The technical meeting was attended by experts from various fields, who provided valuable insights and feedback on the report. The discussions during the meeting were focused on identifying any remaining issues and resolving them in a timely manner. This process ensured that the report was of the highest quality and met all necessary standards.

1.3. GEOGRAPHIC SCOPE

The scope of this analysis includes the entire marine waters of the URT illustrated in Figure 1.1, as defined under the Territorial Sea and Exclusive Economic Zone Act No. 3 of 1989 (hereafter the 'Territorial Sea and Exclusive Economic Zone Act'). According to this Act Section 2, Article 3, the breadth of the territorial sea of the URT shall comprise those areas of the sea extending up to 12 nautical miles measured from the coastal waters as determined under Article 5 of the Act.

Section 4. The internal waters of the URT include any areas of the sea that are on the land ward side of the baseline of the territorial sea of the URT. Section 5. The baseline from which the breadth of the territorial sea of the URT is measured shall be the low water line along the coast of the URT including coast of all Islands, as marked on large scale chart or map officially recognized by the government of the United Republic of Tanzania. As noted above, the concept of the blue economy, as it applies to the URT, includes both marine and fresh water bodies. As such, any future MSP initiative for the URT should also include the various freshwater bodies as well as the URT's maritime waters.

Broadly speaking, the tools for MSP can be applied to any water body, although there are likely to be some differences in the implementation of MSP for marine waters as compared with fresh

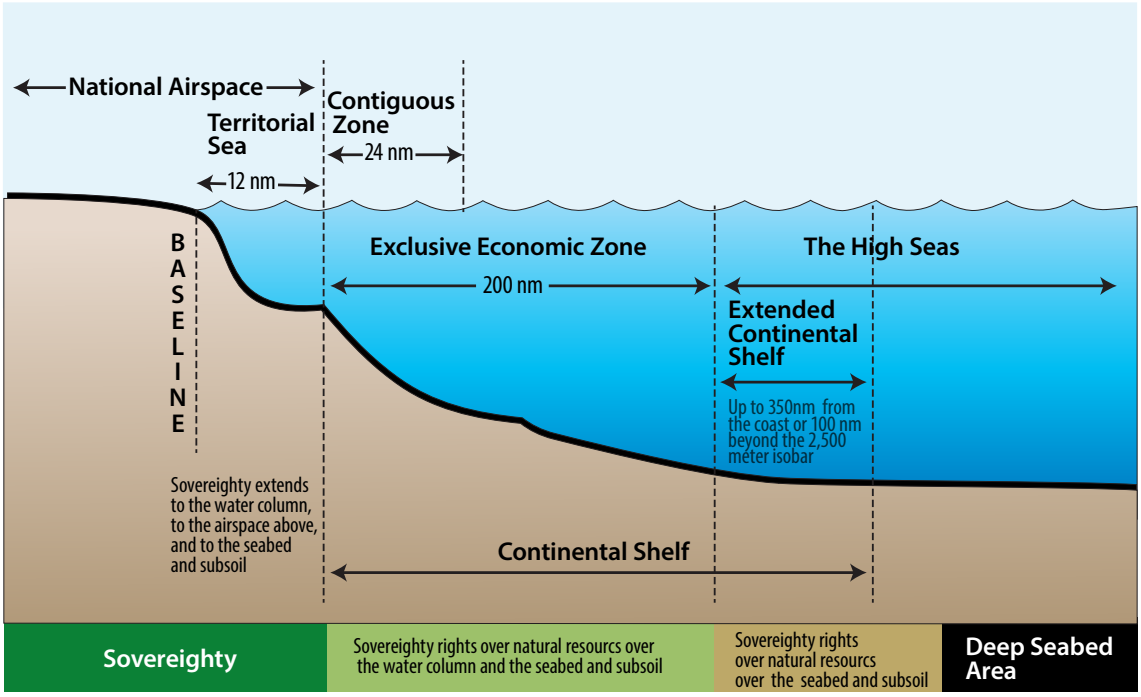


Figure 1.1: Maritime zones under the United Nations Convention on the Law of the Sea (UNCLOS)

water bodies, due to the differences in the legal frameworks that govern these two resource types. The scope of the present study does not include those institutional and legal frameworks that apply to fresh water bodies. Nonetheless, it is recommended that further analysis be undertaken to ensure that freshwater bodies are comprehensively included in the final MSP framework to be developed by the URT.

1.4. SECTORAL SCOPE

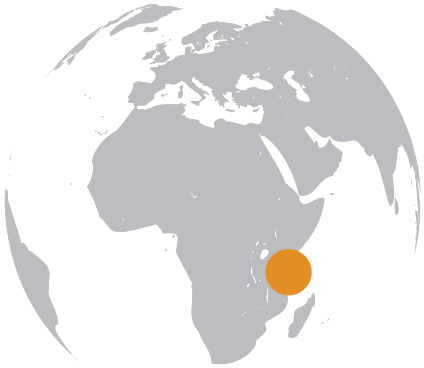
The blue economy is not new to the URT, with marine uses and activities already contributing significantly to the overall socio-economic development of the URT, through direct economic activities, indirect support to service industries and the provision of environmental services. Since the economic benefits from ocean activities offer the potential for future growth, through both the expansion of existing sectors and the development of new activities, it is crucial that the full scope of activities that either are, or are planned to be undertaken under the umbrella of the blue economy, are addressed in the MSP.

The future development of the URT's marine space and the MSP framework encompasses various activities that are considered *in-scope*. These activities include marine *biodiversity conservation and climate change adaptation, marine capture fisheries and aquaculture, ports and shipping, offshore petroleum exploration and production, coastal and marine tourism, subsea cables for electric transmission and telecommunications, and coastal salt production*. These activities have been identified as significant components that require attention and planning within the URT's marine space and the MSP framework.

1.5. STRUCTURE OF THE REPORT

This report is divided into six chapters, with additional references and annexes. The introductory **chapter,** provides an overview of the project and the approach taken to undertake the scoping study. To frame the analysis, **chapter 2** presents a brief introduction to the concept and principles of marine spatial planning (MSP), and the benefits of undertaking MSP in the context of developing a sustainable blue economy. **Chapter 3** provides an overview of the national context for MSP. This includes an overview of the characteristics and governance arrangements for the URT's marine space and a brief description of the current socio-economic conditions that characterise the URT. **Chapter 4** presents a situational analysis, which provides a summary of the key marine habitats and resources and the main economic sectors that are characteristic of the URT's blue economy. This includes a brief analysis of the existing policy, legal and institutional arrangements in Tanzania Mainland and Zanzibar.

Chapter 5 represents the most important element of the analysis and presents an overview of the key gaps and challenges that were identified through this scoping study exercise. To address these identified gaps and challenges, this Chapter also proposes some key recommendations. In conclusion, **chapter 6** of this report presents a summary of the key findings of this analysis and proposes a comprehensive Implementation Plan for each of the recommendations identified in **chapter 5**. Although the arrangements that have been analysed in this report relate broadly to the management of marine resources and human use sectors, the core focus of this analysis is on marine spatial planning. As such, this analysis, and the corresponding recommendations, are largely focussed on those gaps and mitigations that may be necessary to enable a comprehensive MSP framework across the URT.



CHAPTER TWO

SIGNIFICANCE OF MARINE SPATIAL PLANNING

2.1. THE CONCEPT OF MARINE SPATIAL PLANNING

In developing a sustainable blue economy, the increasing demand for marine space throughout the URT, along with the multiple pressures on marine and coastal resources, requires a more integrated approach to the management of the URT's marine space. Marine spatial planning (MSP) has increasingly been promoted globally as one tool that can help address complex conflicts in coastal and marine areas, particularly in heavily used marine areas. MSP provides a way to organise the use of the ocean space, as well as the interactions among uses and between users and the marine environment.

The United Nations Economic Commission for Africa (UNECA) identifies a number of tools and opportunities for the implementation of the blue economy (Figure 2.2). According to the blue economy definition for Africa (UNECA, 2016), MSP is essential for implementing the blue economy. In the context of the sustainable blue economy, UNECA defines MSP as: *an integrative, adaptive, and participatory process that brings together multiple users of the ocean at various levels – including energy, industry, fisheries, oil and gas, government, conservation, and recreation – to make informed and coordinated decisions about how to use marine resources sustainably.* (UNECA, 2016)

The 2050 AIMS (African Union 2012) confirms the importance of MSP as a tool for the implementation of the blue economy as a mechanism to balance competing sector-based interests. By establishing and planning the marine space for the economic activities, sectors and resources, it is recognised that MSP provides a policy process for the African Union, the Regional Economic Commissions and Member States to better determine how maritime zones can be sustainably used and protected.

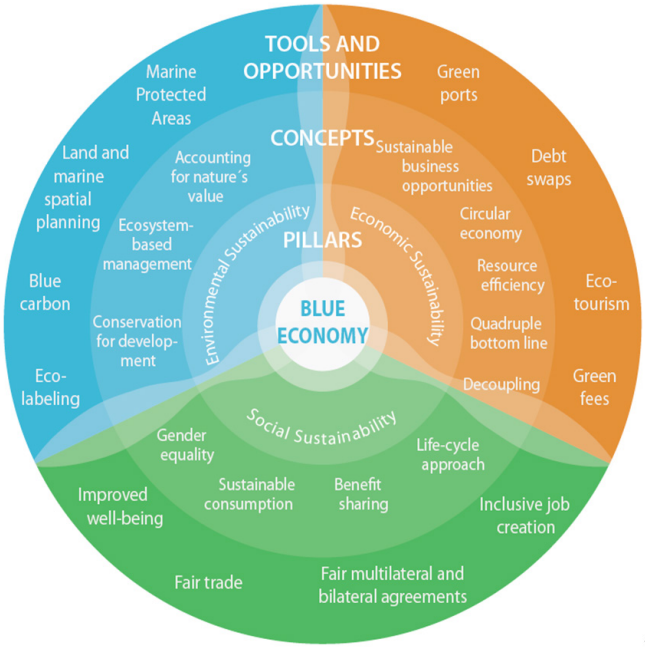


Figure 2.2: Tools, concepts and pillars of the blue economy. Source: UNECA (2016).

If the URT is to comprehensively develop a sustainable blue economy, MSP is an important tool to facilitate its development. For increasingly busy ocean spaces, MSP will allow the URT to promote and organise multiple uses as well as identifying sites for new and emerging uses. MSP can also be used as a tool for increasing investor confidence by introducing transparency and predictability, which can act as a catalyst for investment in innovation and developing blue

technologies. It may also facilitate filling critical knowledge gaps on the ocean and key sectors (UNESCO-IOC, 2021).

2.2. BENEFITS OF ADOPTING MSP

Across the URT, many government sectoral policy statements (including land, fisheries, environment, forestry, tourism, etc.) recognize the need for an integrated and participatory resource management approach to resolve issues and take advantage of development opportunities. MSP provides the mechanisms for achieving inter-sectoral management of resources and people in the coastal and marine domain. The benefits of a successful implementation of MSP in Tanzania is shown in Table 2.1 .

Table 2.1: The benefit of implementing MSP in Tanzania.

Environmental Benefits	• Assist the URT with the further identification of ecological important areas as the basis for expanding the current network of marine protected areas; • Effective and efficient control of marine pollution; • Strengthen incorporation of biodiversity conservation goals into planning and decision-making; • Allocate space for biodiversity and nature conservation measures • Identify and reduce the impacts of harmful human uses on the marine environment; • Identify and reduce the cumulative effects of human activities on marine ecosystems; • Mitigate and adapt to climate change impacts;
Economic Benefits	• Provide greater certainty for new private-sector investment in terms of access to marine areas; • Identify compatible and incompatible uses within the same development areas; • Reduce conflicts between incompatible uses and users; • Improve capacity to plan for new and changing human activities, including emerging technologies and their associated effects; • Streamline and strengthen planning and licensing procedures;
Social Benefits	• Increase community and citizen participation in marine planning and decision-making; • Improve the transparency of impacts of decisions on the allocation of ocean space (e.g., closure areas for certain uses, protected areas) for communities and economies onshore; • Identify and protect marine cultural heritage; • Identify and protect social and spiritual values related to ocean use

Additionally, implementing MSP may deliver numerous positive added benefits, as it often provides an initial forum through which different stakeholders express their given interests related to a specific marine space. If well designed, an MSP process may lead to increased understanding of other stakeholders' needs, and thus not only potentially limit conflicts, but create synergies and cross-sector cooperation fields, which may be outside the scope of the actual spatial planning dimension as such (e.g. economic cooperation) (GEF LME:LEARN, 2018).

It should be stressed that MSP alone will not be sufficient for the URT to realise a sustainable blue economy. The successful and sustainable development of a sustainable blue economy will also require governance and policies that integrate environmental and economic considerations. MSP should therefore be seen as complementary to the existing marine management structures that operate across the URT. As such, whilst MSP takes account of sectoral management, it does not replace single-sector management measures, which remain an important aspect of the overall ocean governance arrangements. Neither does it replace, or in any way detract from existing management tools, such as integrated coastal zone management (ICZM) and marine protected areas (MPAs), but rather relies on integration with such tools (UNECA, 2016).

2.3. RELATIONSHIP BETWEEN ICZM AND MSP

The URT already has extensive experience with the development and implementation of integrated coastal zone management. Tanzania Mainland launched the National Integrated Coastal Management Strategy in 2003, as a mechanism to improve the living standards of the coastal people and revamp national development. Zanzibar developed its Integrated Coastal Zone Management Strategy (ICZM) in 2009. Furthermore, Zanzibar's ICZM governance mechanism has been formalized in the Zanzibar Environmental Management Act No. 3 of 2015. Both ICZM and MSP are tools that attempt to override traditional sectoral approaches that lead to disconnected decisions and missed opportunities for more sustainable coastal development. Both tools broadly seek to address the same objectives through:

i. Integrating between levels of government and other management authorities (including across administrative boundaries);
ii. Integrating between disciplines;
iii. Integrating across spatial and temporal scales; and
iv. Integrating stakeholders (interests) with special attention to local communities.

Whilst MSP and ICZM, both involve a strategic approach to planning within the marine environment, in terms of uses and activities, the main difference between the two are the scales to which they can be applied. Typically ICZM is applied to marine zones less than two kilometres from the coastline, conversely MSP can be applied to much wider areas such as coastal watersheds or the EEZ. In the context of the URT, there is an evident overlap of the geographical scope of ICZM and MSP since both include internal and territorial waters. From this perspective, MSP can be seen as one of the main tools for implementing ICZM in the marine part of the coastal zone. However, the application of MSP is far broader since it encompasses all of the URT's maritime waters.

2.4. APPROACHES TO IMPLEMENTING MSP

2.4.1. Essential requirements for MSP

In examining international Marine Spatial Planning (MSP) practices, several critical elements have been identified as vital for the effectiveness of future MSP processes. These elements encompass the following aspects: the establishment of a strong institutional and legal framework to govern marine space; acquiring knowledge about current marine uses and their environmental impacts; ensuring access to comprehensive marine and coastal information to facilitate planning and decision-making; implementing mechanisms that encourage stakeholder engagement and participation in the planning and decision-making processes; utilizing tools to identify and resolve conflicts among different users of marine space, as well as assess cumulative impacts; and finally, integrating MSP with existing ocean governance structures and aligning it with established land-use planning arrangements. The incorporation of these elements is essential for ensuring the success and efficient management of marine space through MSP initiatives.

Marine Spatial Planning (MSP) does not adhere to a single model, but rather encompasses multiple steps and ongoing phases. At a minimum, the development and implementation of MSP involve four key phases – process planning, goal setting and data collection, spatial analysis and draft plan creation, and final plan preparation and implementation (Figure 2.3). The steps presented in (Figure 2.3) represents a non-linear process where the steps are interconnected and may be revisited multiple times throughout the process. In this regard, it should be clearly understood that MSP is not simply a plan, but rather a comprehensive planning process, often utilizing spatial planning tools. The principal output of MSP is a comprehensive spatial management plan for a marine area or ecosystem, which sets out priorities for the area and defines what these priorities mean in time and space. A spatial management plan can contain a map with: (1) clear designated areas for current uses; and (2) an indication of possible/planned areas for future use

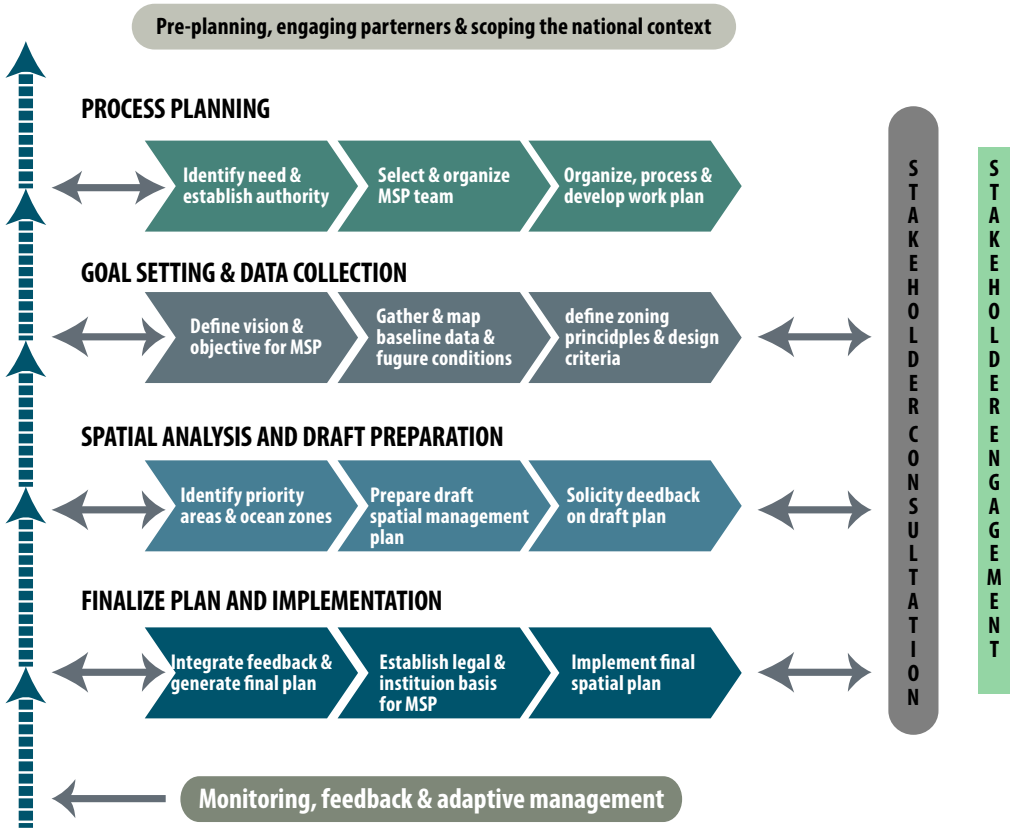


Figure 2.3: Overview of the steps to be followed during the spatial planning process.

and development. In addition to such a map(s), a spatial management plan is likely to include planning policies to guide future developments. The plan should be designed to resolve both current conflicts as well as prevent future conflicts and foster synergies between uses. Accordingly, a future-oriented vision and corresponding goals and objectives should be included in the plan (GEF LME:LEARN, 2018).

2.4.2. Global approaches to MSP

There is no 'one-size-fits-all' model for MSP. Something that has worked in one country or region may not be applicable to another country. Geo-political, social and environmental conditions, maritime activities and related MSP issues differ substantially in marine areas around the globe. As a result, globally, countries are at very different stages of MSP development, with differing MSP resource availability and varying governance systems both for national processes as well as transnational cooperation. Moreover, planning cultures differ substantially, which impacts how a marine spatial plan is adopted in national legislation. In some cases, countries may focus on establishment of specific zones and exact allocation of maritime activities; whereas other countries may focus more on establishing principles and strategic planning criteria. Table 2.2 provides a sample list of different types of plans developed as a result of an MSP process.

Table 2.2: Different MSP approaches adopted globally. Source: GEF LME:LEARN (2018)

Plan Type	Examples	Description
National plan with spatial allocations	Maritime Spatial Plan for the Belgian Part of the North Sea,	This plan lays out principles, goals, objectives, and long-term vision, and spatial policy choices for the management of the Belgian territorial sea and EEZ.
	Belize Integrated Coastal Zone Management Plan	This plan covers both coastal and territorial seas of Belize and sets out action plans which are supported by zoning/spatial schemes for the management of coastal and marine human activities/uses.
	Seychelles Marine Spatial Plan	The plan is being developed in phases and takes a multi sector approach to zoning the entire EEZ for marine protected areas, and multiple uses in addition to an implementation plan.
National integrated plan	Ireland - Harnessing Our Ocean Wealth – an Integrated Marine Plan	This sets out a roadmap for the Government's vision, high-level goals and integrated actions across policy, governance and business to enable Ireland's marine potential to be realised. Implementation of this Plan will see Ireland evolve an integrated system of policy and programme planning for marine affairs.
	National Framework for Marine Spatial Planning in South Africa	The framework adopted in 2017, delivers high level directions for developing MSP in the context of existing legislation, policies and planning regimes in South Africa. It also sets out the processes for developing and implementing marine area plans to ensure consistency across the entire EEZ.

Plan Type	Examples	Description
Multi-Level Plans	Sweden	Three distinct plans for separate areas, covering the territorial sea from 1 nm outward of the base line and the EEZ, are under preparation by the same national authority; whilst coastal regions also have the right to prepare their plans up to 12 nm.
	United Kingdom	In the UK, the preparation of marine plans is the responsibility of the respective governments within the UK. For example, Scotland has prepared Scotland's National Marine Plan, which provides a single framework for managing Scotland's seas. This plan will be supplemented by eleven Regional Marine Plans, prepared by the Marine Planning Partnerships.
	Germany	There is no hierarchy between the different plans prepared for the two EEZs (Baltic Sea and North Sea) and the three plans prepared by each of the coastal states; e.g. the plan prepared by Mecklenburg Vorpommern for its 12 nm zone is not under a hierarchical order of the plan prepared by the Federal Government for the Baltic Sea EEZ.

2.4.3. MSP experience in the Western Indian Ocean

At a WIO regional level, the Secretariat of the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (Nairobi Convention) has established a marine spatial planning technical working group whose functioning is integrated into the WIOSAP, SAPPHIRE and NoCAMO projects. The MSP technical working group responds to a need for improved regional cooperation to establish a consistent and appropriate definition of MSP that will serve the needs of WIO countries. It aligns with two decisions of the 8th Meeting of the Contracting Parties to the Nairobi Convention held in Seychelles in 2015:

i. **Decision CP8/10: Blue and Ocean Economy** (4) "To urge Contracting Parties to cooperate in improving the governance of areas beyond national jurisdiction, building on existing regional institutions including the Nairobi Convention and developing area-based management tools such as marine spatial planning to promote the blue economy pathways in the Western Indian Ocean Region."

ii. **Decision CP8/13: Enhancing Cooperation, Collaboration and Support with Partners** (3) "To invite all Contracting Parties and request the Secretariat to collaborate with the Secretariat of the Convention on Biological Diversity, Western Indian Ocean Marine Science Association and other partners on capacity building, implementation and sharing of experiences on integrated marine spatial planning in support of blue economy.

Individual countries of the WIO have developed and adopted MSP approaches for different purposes. The levels of implementation vary across countries, with more advanced processes having been implemented in Seychelles. Implementation in Kenya and Mauritius remains at an earlier stage. Broadly speaking, it can be seen that the evolution of MSP is directly aligned to the increased interest in the blue economy: The both Seychelles and Kenya have adopted the blue economy concept; Mauritius is investing in the 'ocean economy'; and the Republic of South Africa has developed Operation Phakisa, to unlock the economic potential of the ocean in a sustainable manner (Celliers, 2017).

- In **Seychelles**, MSP began in February 2014 as a process focused on planning for the sustainable and long-term use of the nation's extensive ocean space. The Seychelles MSP builds upon existing MPA planning efforts, and is a necessary output of the Seychelles debt conversion, in which the government committed to expanding marine biodiversity protection to 30% of the EEZ and territorial sea by 2020. MSP is a government-led process in the Seychelles, with planning and facilitation led by TNC.

  MSP has been framed as an integrated, multi-sector approach to address climate change adaptation, marine biodiversity protection and support the blue economy. The process has a robust stakeholder engagement framework to develop a comprehensive marine plan with stakeholder input. More than 11 marine sectors and civil society participate in the MSP, including fishing, tourism, marine charters, biodiversity conservation, renewable and non-renewable energy, ports and maritime safety. With pre-planning and extensive consultation processes completed, the marine plan is in the process of being approved. Major outputs to date include a Seychelles MSP Policy Seychelles, a Seychelles Marine Spatial Plan Atlas, and three phases of new MPA gazettement.

- In **Kenya**, MSP has been adopted as a step towards unlocking the country's blue economy development potential. This focuses on identifying opportunities for economic development, whilst also facilitating improved sustainable management of the marine environment, including both coastal and offshore fishery resources, through an ecosystem-based management (EBM) approach. Some of the key drivers for MSP in Kenya for developing the blue economy include proposed investments planned in shipping, aquaculture, tourism, fishing, and marine resource management. Plans for an expansion of port activities, including new port developments, are also driving factors.

  Although the implementation of a marine spatial plan for Kenya is yet to be realized, some pre-planning has been completed. A multi-sectoral Inter-agency Working Group has been constituted under the State Department for Fisheries, Aquaculture and the Blue Economy (SDFABE) to guide the development of MSP. The Government of Kenya is now initiating the process to develop a marine spatial plan with support from development partners including the World Bank, the Federal Government of Germany and TNC.

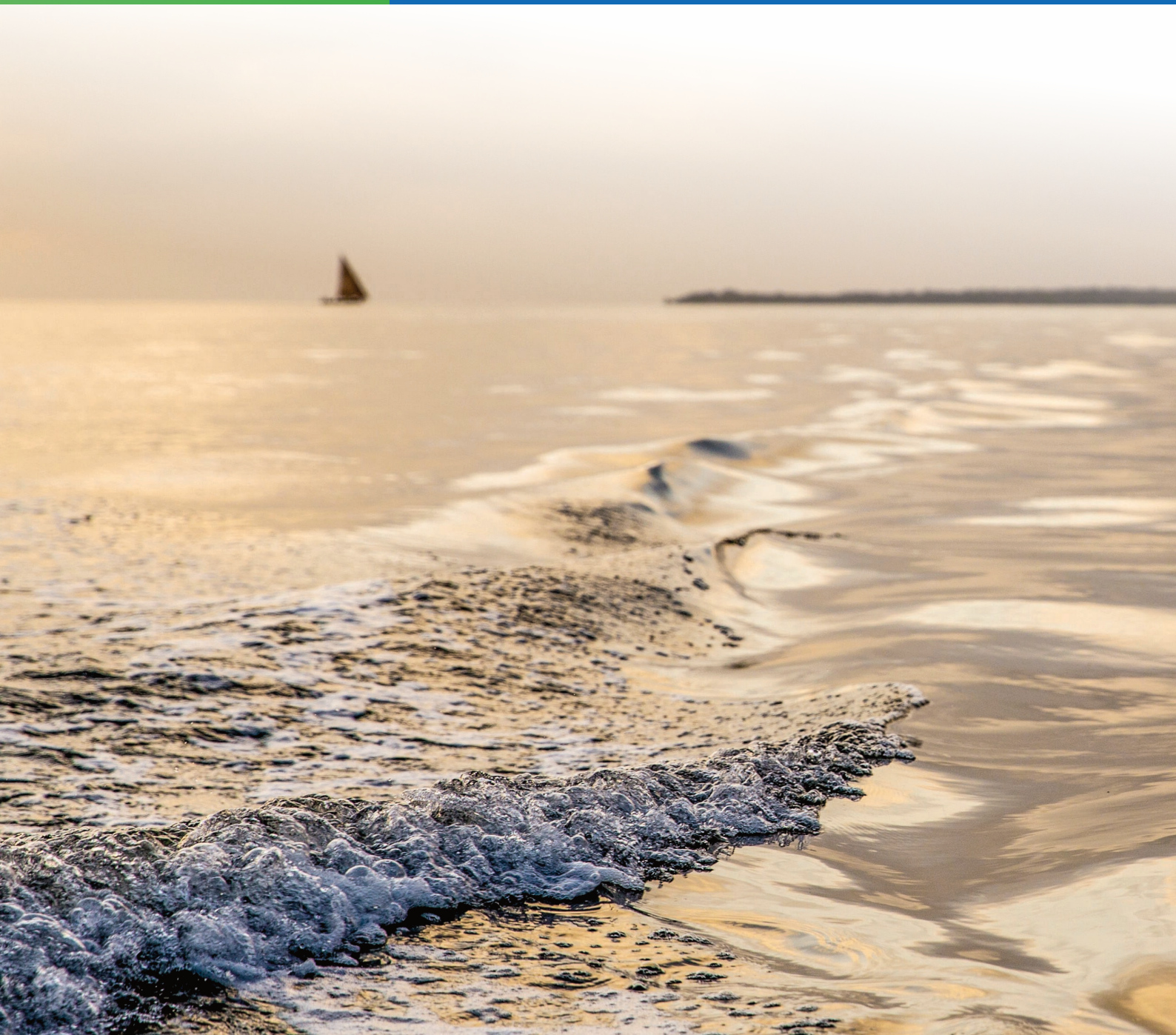
- **Mauritius** has begun to advance MSP as a means of strengthening its economic diversification in key maritime sectors, such as port infrastructure, shipping, tourism, fisheries, and marine renewable energy. Mauritius has established a MSP Coordinating Committee, which led to the identification of key biodiversity areas in the region. Key drivers include the need to establish a comprehensive system of multi-use marine planning for transparent, sustainable, and evidence-based decision-making, as well as intentions to set up an Ocean Observatory E-platform to centralize data (McAteer et al. 2022).

The Department for Continental Shelf, Maritime Zones Administration and Exploration has been granted national authority for MSP. As current coastal management in Mauritius is narrowed to only include areas within one km from the high tide watermark, MSP is intended to harmonize the scope of coastal management with the whole EEZ. Annex C of this report provides two brief case studies, for South Africa and Australia respectively, illustrating how different states have approached the development and implementation of MSP.


SIO POA

CHAPTER THREE

NECESSITY FOR MARINE SPATIAL PLANNING



In order to undertake MSP it is critical to understand the geographic context within which one is operating. In particular, it is crucial to understand the limits of a State's ocean space and any trans-boundary issues that may arise with neighbouring States. To this end, this Chapter provides an overview of the current national context within which the blue economy and, therefore, MSP, will be developed.

3.1. COUNTRY PROFILE

The United Republic of Tanzania (URT) is situated along the East Coast of Africa, between latitudes 11ºS and 1º S and between longitudes 29ºE and 41ºE (Figure 3.1). It is the largest country in East Africa, extending from Lake Tanganyika in the West to the Indian Ocean in the East, Lake Victoria in the North, Lake Nyasa and River Ruvuma in the South. Tanzania shares its borders with Kenya and Uganda to the North, Rwanda, Burundi, Democratic Republic of Congo and Zambia to the West, and Malawi and Mozambique to the South.

The URT consists of Mainland Tanzania and Zanzibar (comprising the two main islands of Unguja and Pemba), separated from the mainland coast by a channel approximately 22-mile wide. A third populated island, Mafia Island, is an integral part of Mainland Tanzania. There are also a

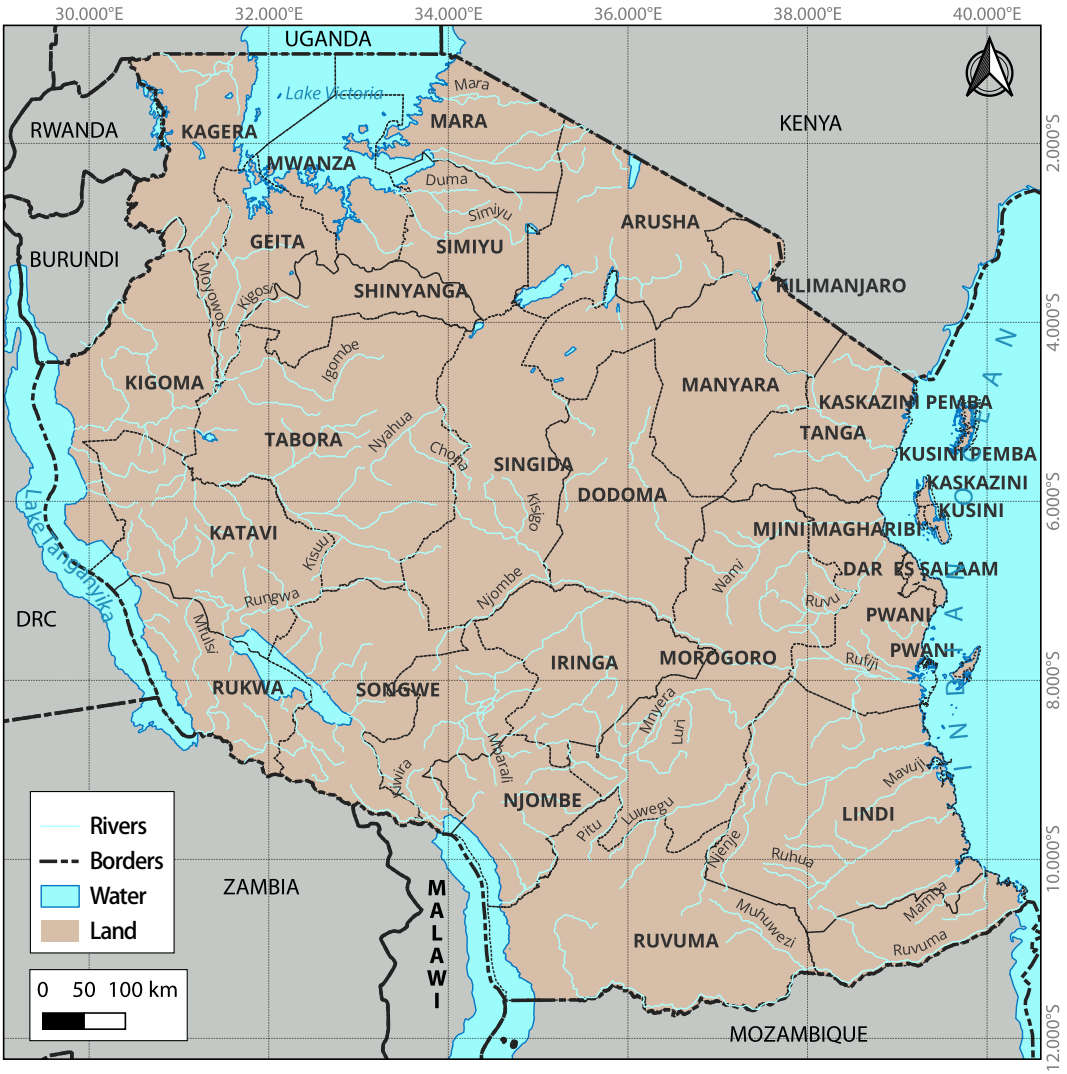


Figure 3.1: The map of the United Republic of Tanzania

large number of smaller islands. While the larger of these are almost all inhabited, most of these islands are uninhabited although they may be used frequently by fishermen for camping and, in populated areas, they are increasingly used for recreation and tourism. The furthest offshore is Latham Island, which supports important biodiversity and fisheries resources.

The coast of the URT, including the numerous islands and islets, stretches across some 1,424 km, from the northern border with Kenya to the southern border with Mozambique. Administratively, the coastal area of Mainland Tanzania comprises five regions: these are, from north to south, Tanga, Dar es Salaam, Pwani, Lindi and Mtwara. Zanzibar has five administrative regions: two on Pemba (Kaskazini Pemba and Kusini Pemba) and three on Unguja (Kaskazini Unguja, Mjini Magharibi and Kusini Unguja). The port city of Dar es Salaam, also the nation's commercial hub and centre of the administrative and service sector, dominates the coastal zone in terms of population size and economic activities.

The coastal area is home to approximately one quarter of the country's population, and supports 75% of the industries. In most of the coastal districts, agriculture, tourism, fisheries and aquaculture (which includes seaweed cultivation) are the primary means of subsistence for the livelihoods of the poor communities. As a result, many coastal communities are highly dependent on coastal and marine resources, and the ecosystem services these provide. These marine ecosystems provide broad support to the URT's national economy, and help to sustain the livelihoods and income of local people through small-scale artisanal fishing and other related marine industries.

3.2. MARINE SPACE OF THE UNITED REPUBLIC OF TANZANIA

Article 2(1) of the 1977 Constitution of the United Republic of Tanzania, provides that,

"The territory of the United Republic consists of the whole of the area of mainland Tanzania and the whole of the area of Tanzania Zanzibar, and includes the territorial waters."

Under the provisions of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), coastal States benefit from the conferral of a range of rights in respect of extensive areas of ocean space that are divided up into zones – commonly referred to as 'maritime zones' – measured by reference to a 'baseline' constructed along the coast (Figure 3.2).

In this regard, the URT has enacted domestic legislation to establish its principal maritime zones under the Territorial Sea and Exclusive Economic Zone Act. The Act consolidates the law relating to the territorial waters; provides for the establishment and delimitation of the EEZ of Tanzania; and provides for the exploration, exploitation, conservation and management of resources in the maritime zones.

3.2.1. Maritime zones

Maritime zones refer to the different areas of the ocean that are subject to the jurisdiction of coastal states and the international community. The United Nations Convention on the Law of the Sea (UNCLOS) defines several types of maritime zones:

Baselines

Under international law, a coastal States' maritime zones are established from its baseline. The establishment of baselines is, therefore, a necessary step for a state to be able to claim zones of maritime jurisdiction, as it is essential to determine the points from which the breadth of such zones are measured. The URT has declared a 'straight baseline', in accordance with geographical coordinates submitted to the United Nations (Figure 5 below), and as reflected in section 5 of the Territorial Sea and Exclusive Economic Zone Act.

Internal waters

As a result of the drawing of a straight baseline, the URT formalised an extensive area of internal waters, defined under the Territorial Sea and Exclusive Economic Zone Act as including any areas of sea that are on the landward side of the baseline. This, therefore, includes all the waters between the mainland coast and the islands of Unguja, Pemba, Latham and Mafia.

Territorial Sea

The territorial sea is the maritime area contained within 12 nautical miles (nm) of the baseline. Other than vessels engaged in innocent passage pursuant to international law, it is prohibited for any vessel to enter the territorial sea except in accordance with domestic law. In accordance with the Territorial Sea and Exclusive Economic Zone Act, the URT has therefore declared a 12 nm territorial sea.

Contiguous Zone

Pursuant to Article 33 of UNCLOS, a State may declare a Contiguous Zone - a maritime area adjacent to the territorial sea, extending from 12 nm to 24 nm. Within the contiguous zone, a State may exercise the control necessary to prevent infringement of its customs, fiscal, immigration, or sanitary laws and regulations within its territory and its territorial sea, and to punish the infringement of such laws and regulations. To date, the URT has not declared a contiguous zone.

Exclusive Economic Zone

The exclusive economic zone (EEZ) is the maritime area located adjacent to and beyond the territorial sea, together with the seabed, extending up to 200 nm from the baseline. The URT has declared its EEZ, within which it exercises sovereign rights for the purpose of exploring, exploiting, conserving, and managing the natural resources there, whether living or non-living, and with regard to "other activities" for purposes of economic exploitation of the EEZ.

In accordance with the Territorial Sea and Exclusive Economic Zone Act, the following activities in the EEZ are subject to authorization from the government: economic exploitation of natural

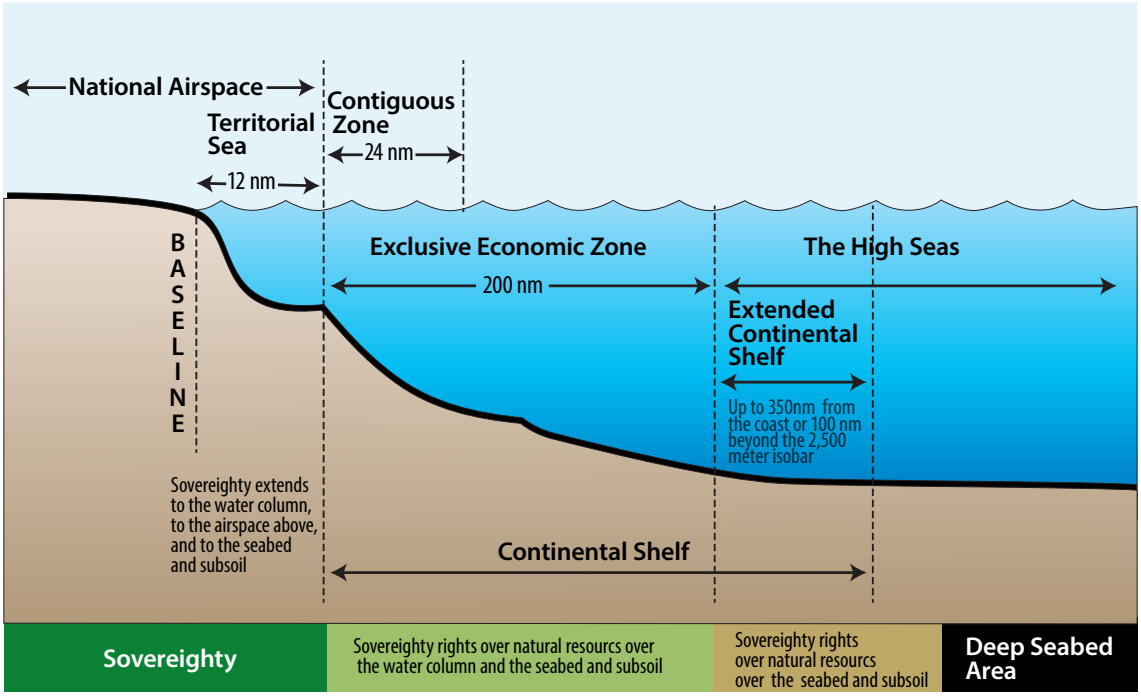


Figure 3.2: Maritime zones under the United Nations Convention on the Law of the Sea (UNCLOS)

resources (other than fishing by Tanzanian citizens); conduct of scientific research; excavations of the seabed; and construction, operation, or maintenance of any structure or device, or the carrying out of any economic activity. All living, non-living, and naturally occurring resources of value within the EEZ and the seabed vest in the State.

The extent of the URT's marine space is expressly declared in Article 2 of the Constitution of the United Republic of Tanzania, 1977, with baselines and the various maritime zones subsequently established under section 5 of the Territorial Sea and Exclusive Economic Zone Act (see Figure 6 below). This includes submission of a straight baseline to the United Nations Division of Ocean Affairs and Law of the Sea (UN-DOALOS) in 2013, establishing internal waters to the west of the baseline. This gives the URT jurisdiction and rights over a maritime area of approximately 241,600 km2, equivalent to 24% of the land area.

The project team notes that, during the preparation of this scoping study, various estimates are provided in different reports and government documents as to the precise extent of the URT's marine space and jurisdiction. The Fisheries Policy (2015), for example, indicates 223,000 km2, whilst the Zanzibar Blue Economy Policy (2022) indicates an area of 241,541 km2. The project team's own estimate (241,600 km2) is derived from a spatial analysis (using ArcGIS) based on the baseline coordinates submitted to the United Nations (Figure 5 below) and the coordinates

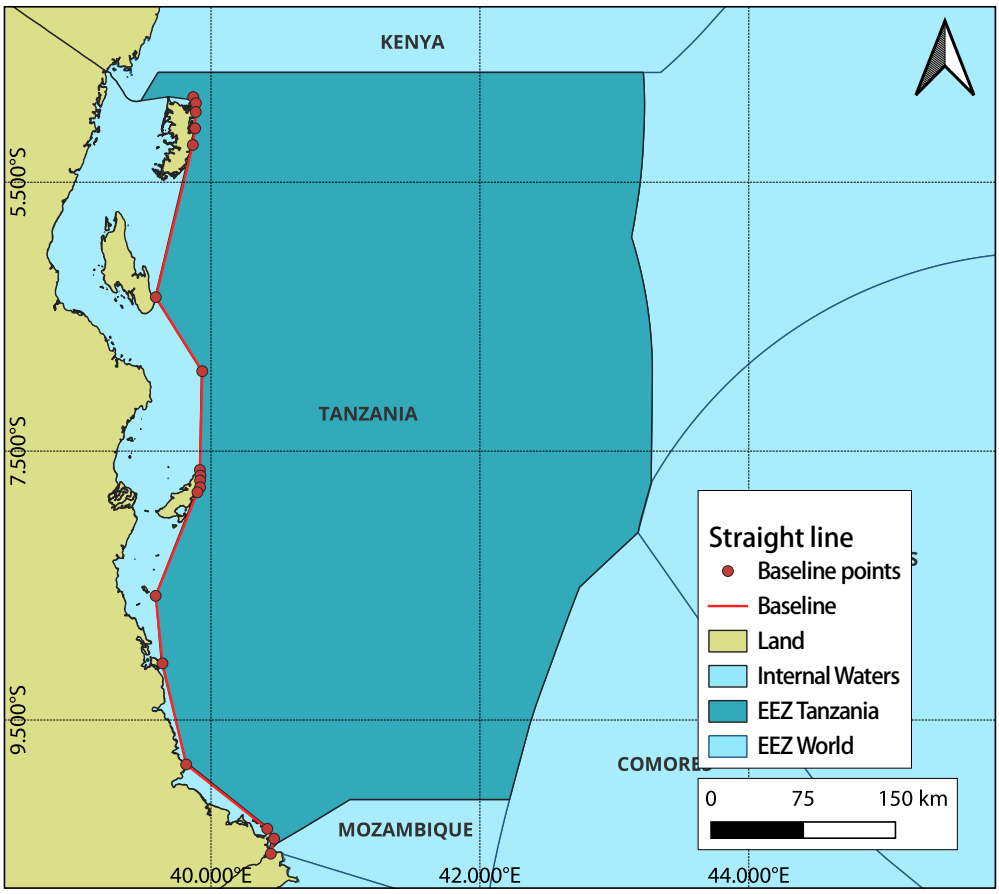


Figure 3.3: Tanzania Straight Baseline deposited with the UN Division for Ocean Affairs and the Law of the Sea. Modified from UN Division of Ocean Affairs and the Law of the Sea (2022).

of the various maritime boundaries that have been agreed through bilateral treaties with relevant neighbouring countries.

While these difference will directly affect the implementation of MSP, it is recommend that a single definitive value be estimated and adopted for the various maritime zones outlined above.

Continental Shelf

Pursuant to Article 76 of UNCLOS, the continental shelf of a state comprises the sea-bed and subsoil of the submarine area that extends beyond the territorial sea to the outer limits of the EEZ or, under certain cases beyond that to the outer edge of the continental margin. In 2012, the URT submitted to the Commission on the Limits of the Continental Shelf (CLCS), information relating to a further 61,000 km² of extended continental shelf (Figure 3.3). This would potentially give the URT jurisdiction over additional potential seabed living and non-living resources.

3.2.2. Maritime boundary delimitation

The Exclusive Economic Zone (EEZ) of the United Republic of Tanzania (URT) extends to the east (Figure 3.4), where it borders the high seas. In other directions , the URT shares its EEZ boundary with Kenya to the north, Mozambique to the south, and Seychelles and Comoros to the southeast (Figure 3.3).

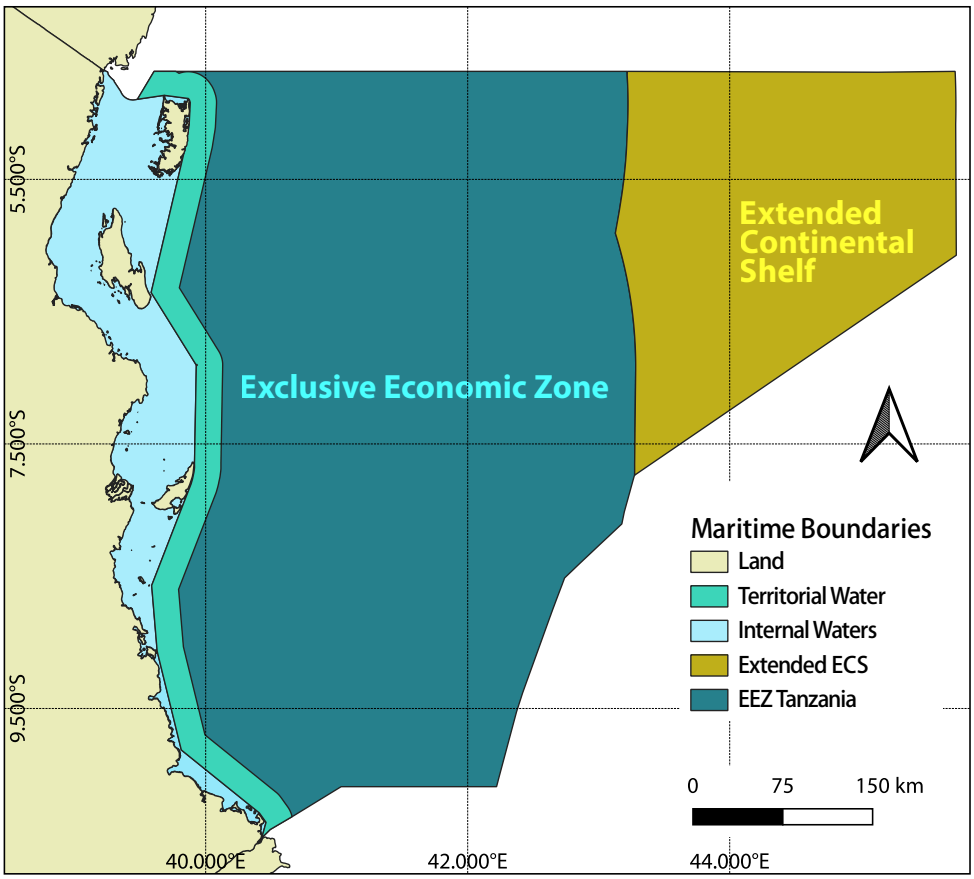


Figure 3.4: The maritime zones and boundaries of the United Republic of Tanzania relative to the straight baseline: Data source: Government of the URT

3.2.3. Coordination of maritime affairs

At the level of the URT, the Territorial Sea and Exclusive Economic Zone Act and the Deep Sea Fisheries Management and Development Act No. 5 of 2020 (DSFA Act), provide the legal basis for governance in the broader EEZ (i.e. beyond the territorial sea of the URT between 12nm and 200 nm from the baseline). Management of marine resources within the territorial sea (from the baseline out to 12 nm) and within internal waters mostly falls under devolved sectoral legislation for Mainland Tanzania and Zanzibar respectively.

Pursuant to section 9 of the Territorial Sea and Exclusive Economic Zone Act, and in accordance with the relevant provisions of UNCLOS, the URT exercises sovereign rights over the living and non-living resources of the EEZ. The wording also gives jurisdiction to ensure "the protection and preservation of the marine environment", in accordance with Article 56(1)(b) of UNCLOS. Section 19 of the Act gives the Minister responsible for Foreign Affairs the powers to make regulations for all or any of the following purposes:

i. Any activity relating to the exploration or exploitation of the Zone;
ii. Any activity relating to the economic exploration or exploitation of the Zone;
iii. The authorization, control and regulation of scientific research in the Zone;
iv. The safety and protection of structures or devices in the Zone;
v. The preservation of the marine environment of the United Republic and the prevention and control of pollution thereto;
vi. The regulation of the conduct of any person in or upon the Zone; and
vii. The conservation measures to protect the living resources of the sea.

However, at the URT level, there is no single institution with an overarching responsibility for ocean affairs for the EEZ and the Adjacent Area. There are key areas of environmental conservation, maritime transport, and oil and gas extraction, where respective sectoral legislations in Tanzania Mainland and Zanzibar apply. In the specific case of fisheries, the Deep Sea Fishing Authority (DSFA) has a mandate to govern fisheries in the EEZ on behalf of the URT as stipulated in the Deep Sea Fisheries Management and Development Act No. 5 of 2020.

Throughout the URT, governance of maritime activities is largely conducted in a sectoral manner. The VPO does have responsibility for Union affairs, cross-cutting environment management and inter-ministerial co-ordination, thus providing a potential platform for cross-sectoral ocean governance. Nonetheless, for the specific case of ocean affairs other than fisheries in the EEZ and adjacent areas, dedicated coordination arrangements do not yet exist to oversee ocean governance in those domains.

In Zanzibar, the recent establishment of a dedicated Ministry of Blue Economy and Fisheries (MoBEF), with responsibility for the blue economy development, fisheries and non-living natural resource management, has clearly strengthened Zanzibar's ability to manage ocean affairs in a more integrated manner. The new MoBEF specifically has a Department for Blue Economy Development and Co-ordination.

Development of a Blue Economy Policy under VPO-URT

The URT is currently in the process of developing a comprehensive Blue Economy Policy. Its completion is tentatively anticipated by June 2023. Amongst other things, a new VPO Blue Economy Policy will be an opportunity to provide for establishment of a URT – level coordination mechanism to support URT – level blue economy development, including MSP, and to prioritise MSP as a key instrument for blue economy development. The VPO Blue Economy Policy will take cognisance of the existing Zanzibar Blue Economy Policy of 2022 to ensure the two are aligned.

The development of a National Blue Economy Policy presents a valuable opportunity to establish the policy and institutional basis for a URT – wide MSP framework specific for the EEZ and the adjacent marine area. Among other aspects, this could accelerate the establishment of such inter-governmental coordination mechanism needed to oversee the development and implementation of MSP at the local level (e.g. environment, maritime transport, energy, oil and gas, tourism, fisheries and aquaculture - mostly concentrated in the near-shore environs); and, create the overarching policy goals and objectives for the development of the URT's marine space and blue economy specific for the EEZ and the adjacent marine area.

3.3. CURRENT ECONOMIC CONDITIONS

3.3.1. Economic situation of the URT

The URT has one of the fastest growing economies in Africa, and is one of the top three growth performers in East Africa. Prior to the outbreak of the COVID-19 pandemic, its average Gross Domestic Product (GDP) was 6.5 % behind Ethiopia (9.5%) and Rwanda (6.7%). This GDP growth translated into substantial increases in average per capita income, from US$1,015 in 2013 to US$1,097 in 2018 (for Tanzania Mainland) and US$859 in 2013 to US$1,026 in 2018 (for Zanzibar) (International Fund for Agricultural Development [IFAD] 2020). According to the National Bureau of Statistics (NBS), at current market prices, Services make up the highest shares of GDP (39.0%) followed by Industry and Construction (32%) and Agriculture, Forestry and Fishing (29%). Notable sectors of the Tanzanian economy are tourism, mining, construction, agriculture, and manufacturing (Ministry of Finance and Planning, 2021). The private sector in the URT is segmented with a small number of large enterprises dominating the formal markets. The majority of Tanzanian firms, however, are small, operate informally, and have very low productivity and value-addition. Access to finance, high transaction costs and inadequate infrastructure are among the main challenges faced by the URT.

According to the most recent World Bank Country Partnership Framework document for the URT (World Bank, 2018a):

> *Tanzania's rich and diverse natural resources, strategic location and socio-political stability provide a solid foundation to achieve its ambition to become a semi-industrialized middle-income country by 2025. The SCD identifies three mutually reinforcing pathways to foster inclusive and sustainable job creating growth and poverty reduction: (i) structural transformation; (ii) spatial transformation; and (iii) institutional transformation. These pathways to growth and poverty reduction can be sustained by building solid foundations of human capital, gender equity, and macroeconomic stability.*

In this regard, the African Development Bank projects a GDP growth at 5.0% and 5.6% in 2022 and 2023, respectively due to improved performance in tourism, the reopening of trade corridors following the COVID-19 pandemic (African Development Bank [ADB], 2022).

3.3.2. Economic situation of Zanzibar

While most of the assessments of economic performance focus on the URT as a whole, the economic drivers for Mainland Tanzania and Zanzibar differ. While Zanzibar shares important commonalities with Mainland Tanzania, it also possesses some of the distinctive characteristics of a small island economy. As such, Zanzibar's economic performance is more closely tied to its marine resources and wider blue economy than the economy of Mainland Tanzania. The latter is able to rely more heavily on agriculture, land-based wildlife tourism, non-living natural resources in the mining sector and, increasingly, construction and manufacturing industries.

The economy of Zanzibar is divided into three main sectors: service (tourism, trade, transportation and storage, and other private and public services); industries (manufacturing, construction, and mining); and agriculture (including forestry, crops, livestock, and fishing). The contributions of these sectors to GDP are 51.7 %, 20.1%, and 18.4%, respectively, for services, agriculture, and industries (UNECA, 2022). According to Zanzibar Blue Economy Policy (RGoZ, 2022), about two-thirds of Zanzibar's Gross Domestic Product (GDP) is directly connected to the Blue Economy (BE). Nearly 99% of its international trade by volume is seaborne. Emerging sectors such as oil and gas, industrial fisheries, deep sea mining and offshore renewable systems are also taking root. Traditional blue activities have included coastal and marine tourism, fishing and maritime trade, but recently aquaculture, dominated by seaweed farming, has enjoyed significant growth. In addition, the tourism sub-sector accounted for about 30% of Zanzibar's GDP whilst fishing accounted for another 4.8%. The latter also employed directly around 63,000 fish workers of whom 17.4% are women. The entire value chain of the fisheries sector employs 78,859 people which is equivalent to 8.5% of total Zanzibar's work force. The seaweed industry accounted for 21% of Zanzibar's exports (and 34% of total crop exports), and directly employed about 113,000 farmers, 80% being women. Further, 98% of the volume of foreign trade in Zanzibar was maritime-based (RGoZ, 2020).

CHAPTER FOUR

ANALYSIS OF THE CURRENT SITUATION

An important early step in any MSP process is to identify and analyse the existing conditions (baseline) against which planning will be undertaken. This provides information on the current physical, biological, social, economic and governance characteristics of the marine plan area. An important task is the identification and mapping of ecologically or biologically significant areas. Not only is this important for understanding those areas that might warrant protection through a planning process, but for planning purposes, the environmental characteristics can also be used to divide the national territory into different planning regions, particularly in countries with extensive maritime territory.

Another important task is compiling information and mapping the spatial and temporal distribution and density of important human activities – tourism, fisheries, aquaculture, marine transportation, renewable and non-renewable energy and sand and gravel mining, among others. This chapter therefore provides an overview of the situation in terms of ecologically significant areas and human uses of the marine environment that can be used to assess the current conditions of the planning area in relation to the different aspects that characterise the socio-ecological system under analysis.

4.1. CLIMATE AND OCEANOGRAPHY

The climate of the coastal region is characterized by tropical humid conditions which is strongly influenced by the seasonal monsoon wind regime. Seasonal climatic patterns along the coast of Tanzania align with regional monsoon wind systems prevailing across the WIO. Accordingly, a south-easterly (SE) monsoon prevails from May to October and a north-easterly (NE) monsoon

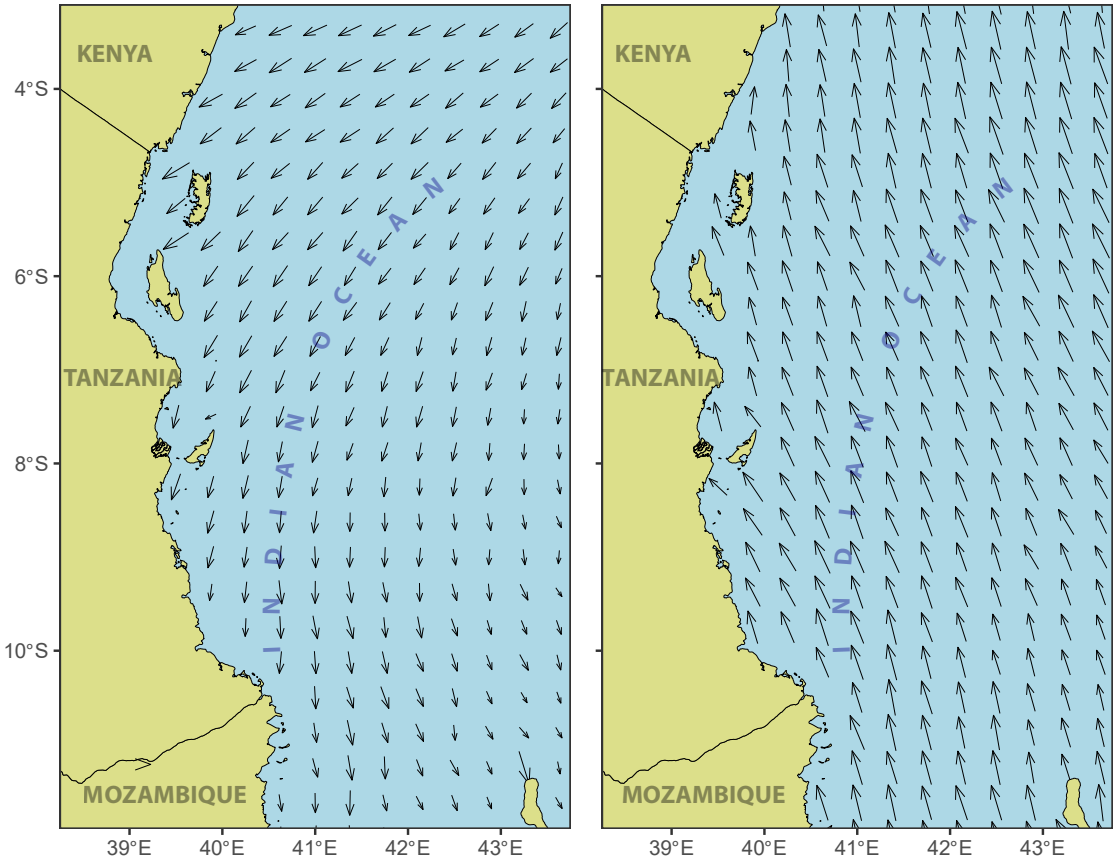


Figure 4.1: Wind speed and direction during the northeast (left panel) and southeast (right panel) monsoon along the coastal and marine waters of Tanzania.

prevails from December to March. The SE monsoon period is cooler, winds are usually stronger and predominantly southerly. The NE monsoon period is warmer and winds are lighter and predominantly northerly (Figure 4.1). Coastal Tanzania has a bimodal rainfall pattern, also driven by the two monsoon seasons. The onset of the SE monsoon drives the main rainy season during March-May and the onset of the NE monsoon drives lighter and less reliable rainfall during November-December. The predominant climate trends observed in recent years include delayed onset and lighter rainfall in November-December, and shorter but more intense rainfall during March-May.

The dominant current prevailing along the Tanzanian coast is the East African Coastal Current (EACC), which flows northwards throughout the year. The EACC originates from the South Equatorial Current (SEC) which flows all year round from east to west across the Indian Ocean, across the northern tip of Madagascar and hitting the Eastern African coast at around 12°S, around the Tanzania-Mozambique. There, the current bifurcates northwards to drive the EACC and southwards to drive the Mozambique Current towards South Africa (Figure 4.2). There are

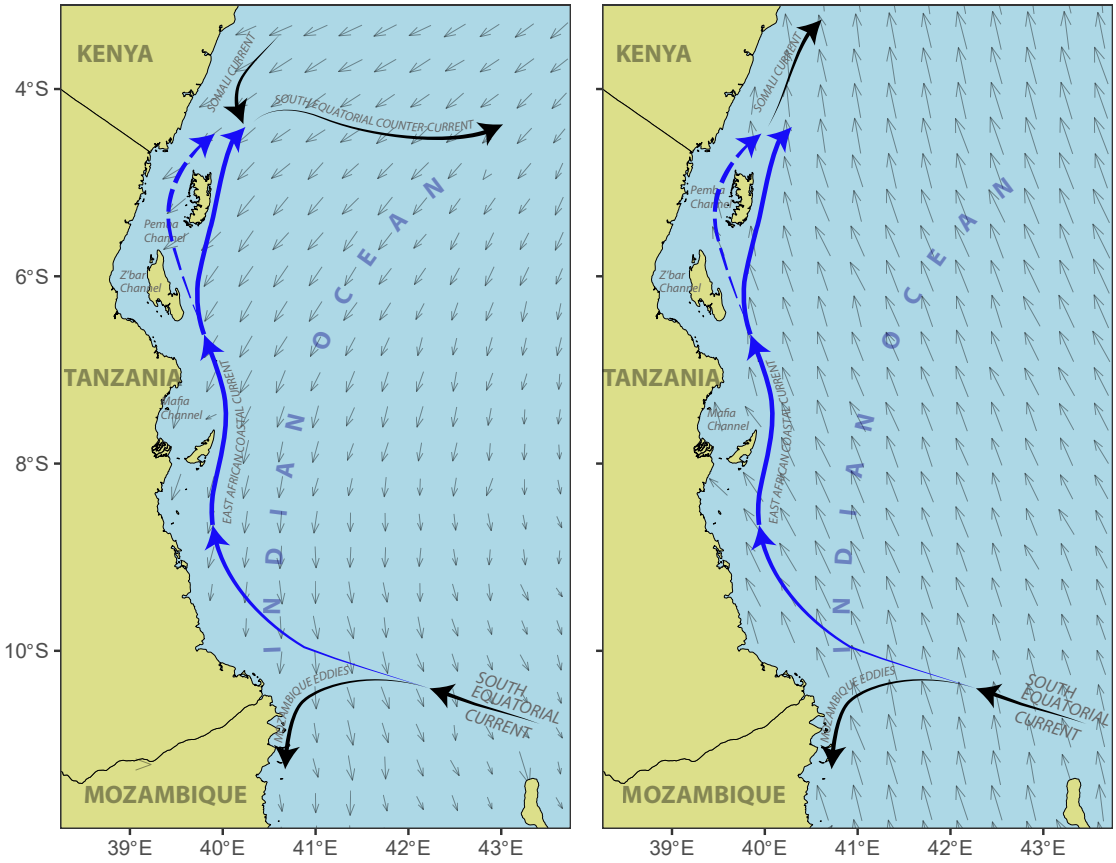


Figure 4.2: The East Africa Coastal Current: pathway along Tanzania's coastal waters during the Northeast and Southeast Monsoons seasons

also diverse counter currents in Tanzania's internal waters driven by a 3-4m tidal range and the interaction of the EACC with near-shore physical features, especially around Unguja and Mafia islands. The EACC is strongest during the period April to October when it is accelerated by the SE monsoon winds. During the period between November and March, the current is weaker, as it is impeded by the northeast (NE) monsoon winds.

The EACC influences a region containing important and highly productive mangrove forests, seagrass beds, coral reef ecosystems and estuaries which collectively sustain high levels of biodiversity. As a result, the URT's coastal waters are endowed with a high diversity of coastal and marine resources.

4.2. MARINE HABITATS AND RESOURCES

The Eastern African coast is broadly a relatively low nutrient environment. This is due to an absence of significant deep-ocean upwelling along its continental shelf – the SEC being a surface current. It is this factor that makes the Tanzanian coast broadly conducive to coral community dominance, except around the major river outflows of Rufiji, Pangani, Ruvuma and Wami, where conversely a higher nutrient environment which allows mangrove and soft-sediment habitats flourish. These factors endow the coastal waters of the URT with a high diversity of coastal and marine habitats including fringing limestone platforms, coral reefs, mangrove forests, seagrass beds, sandy beaches, major estuaries, and muddy tidal flats. These habitats support many species of fish including sharks and rays, cetaceans, turtles, corals, other marine invertebrates, seagrasses and mangroves. These provide a range of ecosystem services such as the provision of food, supporting livelihoods and protection of coastal areas from the worst impacts of climate change. These ecosystems support economic and social development and underpin the livelihoods of coastal communities, who rely heavily on the sea for their food and income. These ecosystems are characterized by high marine biodiversity and rich marine and coastal resources (ASCLME, 2012).

4.2.1. Coastal and shallow reef habitats

Coral reefs

Coral reefs support one of the most productive and diverse marine ecosystems in Tanzanian waters. Mostly comprised of fringing and patch reefs, the coral reefs of URT cover an estimated 3,580 km2, and are found along at least two thirds of the country's coastline - the largest area covered by coral reefs in the entire Eastern Africa (Wagner, 2004). Due to narrowness of the continental shelf, the coral reefs are generally situated near the shoreline within a distance of 1-3 km along the coast (Figure 4.3).

The islands of Unguja, Pemba and Mafia, as well as numerous small islands along the coast, are for the most part surrounded by fringing reefs. The areas of greatest concentration of coral reefs are Tanga, Pemba, Unguja, Mafia, the Songosongo archipelago and Mtwara (Tanzania Coastal Management Partnership [TCMP], 2001a). In areas around river mouths, an absence of suitable rocky substrate and excessive freshwater, sediment and nutrient discharge prevent the development of coral reefs. Coral reefs in the URT are characterized by a broad diversity of both species and formation types, with approximately 150 species of hard, reef-building corals identified. This structural complexity and ecologically diverse habitats are essential to large numbers of both resident and transient marine life - over 500 species of commercially important fish and other invertebrates are commonly found in coral reefs, supporting a significant proportion of artisanal

fish yields. They also serve as a natural barrier that restrain beach erosion and slow down waves reaching the shore; and provide aesthetic attractions for eco-tourism opportunities.

As per the National Environmental Master Plan for Strategic Interventions (Office of the Vice President, 2022), comprehensive data on the status of coral reefs is accessible for Marine Protected Areas (MPAs). However, there is limited information available regarding the condition of coral reefs in other areas. An assessment conducted by Marine Parks and Reserves Unit between 1999 and 2021 observed a gradual increase of coral cover in Mafia Island Marine Park and Tanga Coelacanth Marine Park, but a slight decrease in Dar es Salaam Marine Reserves (Office of the Vice President, 2022). Notwithstanding the lack of data for areas beyond these MPAs, there is evidence that, over the past few decades, the URT's coral reefs have suffered significant degradation, in particular from blast-fishing (largely in Mainland Tanzania), other fishing pressures and climate impacts (Office of the Vice President, 2022).

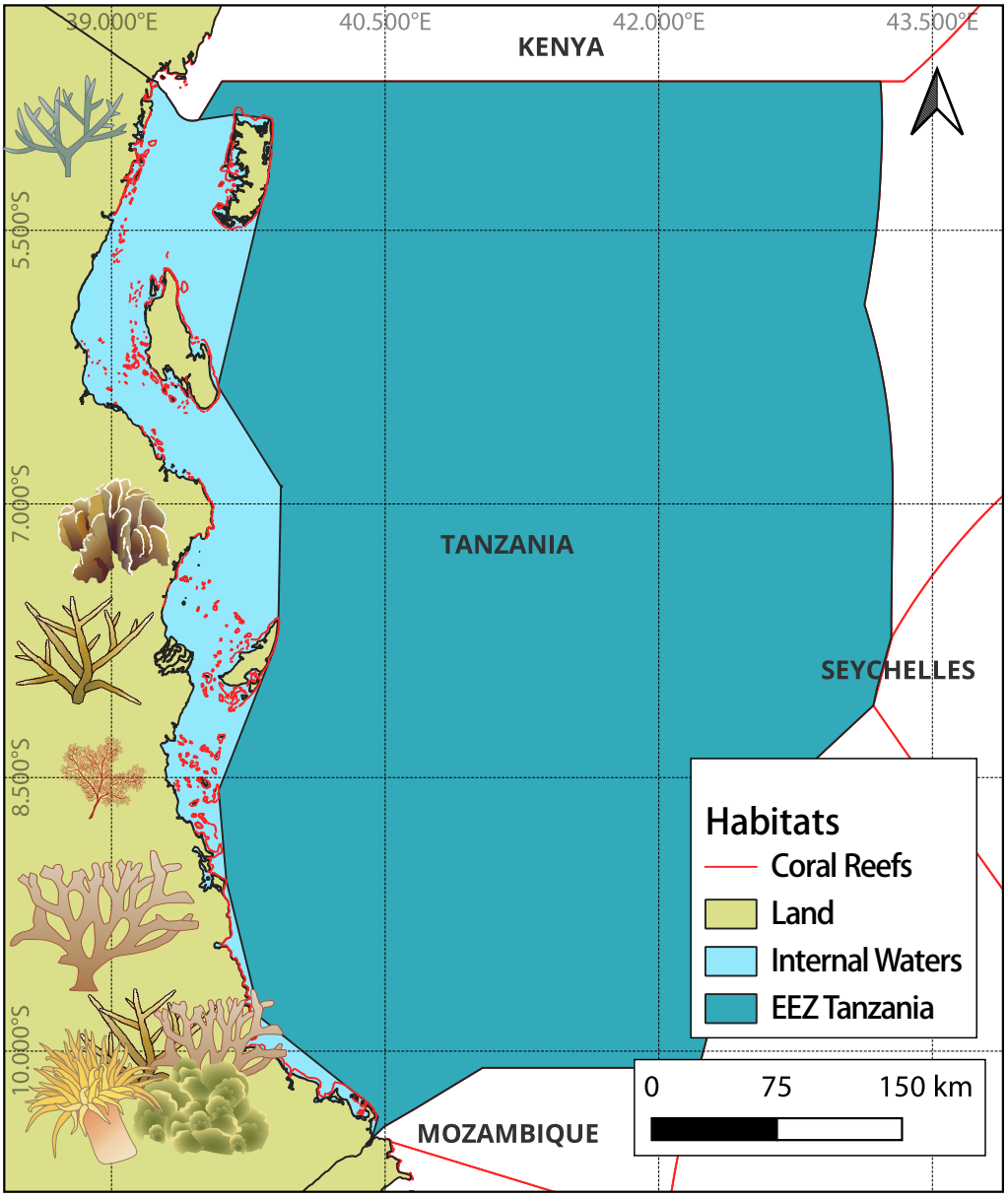


Figure 4.3: Spatial distribution of coral reefs across the United Republic of Tanzania

The most degraded coral reefs are those in shallow depths (less than 10m), especially near urban centres such as Tanga, Dar es Salaam, and Mtwara. More pristine reefs can be found in less accessible stretches of the coast and at greater depths, such as eastern fringing reefs in Kilwa, Mafia, Mtwara and Pemba. Climate impacts have impacted coral reefs in URT, in line with regional and global trends, in particular by post El-Nino high sea surface temperature (SST) events, in 1998, 2007 and 2016. During the first-recorded global coral bleaching event in 1998, some reefs in Tanzania lost up to 80% of hard coral cover at the most impacted sites. The subsequent major bleaching events in 2007 and 2016 also resulted in coral loss, although impacts were less than anticipated. Broadly however, coral cover at long-term reef monitoring sites in Tanga, Mafia and Zanzibar has shown a trajectory of medium-term recovery since 1998, indicating that coral communities are at least partially adapting to heat stress over time.

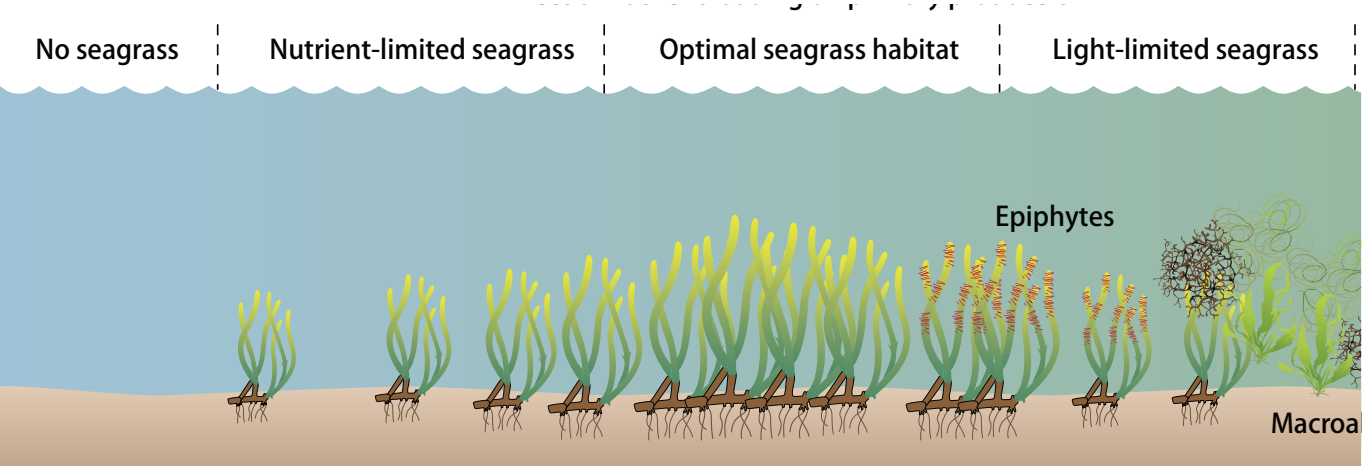
There have also been government initiatives to address the decline of coral habitats. Dedicated efforts by Mainland government enforcement agencies during 2016-18 virtually eliminated blast-fishing in Mainland Tanzania to less than 5% of pre-2016 levels. It currently persists only in some parts of Tanga. If maintained, this will be contribute significantly to coral reef well-being. Equally, the relatively better condition of coral reefs in Mainland marine parks and at sites like Misali and Chumbe Islands in Zanzibar reflects positively on management efforts by MPA authorities and stakeholder partners. Strategy instruments such as the National Environmental Masterplan for Strategic Interventions further contain specific measures to enhance coral reef conservation in future, including strengthening MPA management effectiveness.

Seagrass

Seagrass meadows play a crucial role as indicator species, reflecting the overall health of coastal ecosystems due to their remarkable biodiversity and sensitivity to water quality changes. These meadows typically thrive in the transitional zones between the intertidal and sub-tidal areas, often in close proximity to coral reefs and mangrove forests. Seagrass beds are highly productive and perform numerous ecological functions, including acting as primary producers within the food chain of the reef community. They also play a vital role in fixing nitrogen and storing atmospheric carbon, contributing to the regulation of nutrient cycles and climate change mitigation.

Seagrass meadows provide essential habitats for a diverse range of reef organisms, serving as feeding grounds, breeding sites, recruitment areas, and nursery grounds for both juvenile and adult stages of various species, including commercially important ones. Furthermore, seagrass beds contribute to reducing sediment movement in near-shore waters and effectively remove sediments from the water column, leading to decreased turbidity and improved water clarity. Additionally, these ecosystems play a key role in stabilizing coastlines by minimizing coastal erosion through their root systems and the damping effect of their aboveground structures.

A total of 12 seagrass species are found in the URT, which are thought to be widely distributed in inter-tidal and sub-tidal mud and sand flats coastal lagoons, sandy areas around the bases of shallow, patch and fringing reefs, and mangrove creeks exposed to low tide. They are found in abundance in sheltered areas of the coast in Tanga, the tidal zones fronting the deltas of Ruvu, Wami and Rufiji rivers and around Kilwa (Ruitenbeek et al. 2005). They also occur in Pemba,



Unguja and Mafi a islands (Figure 10). The most extensive seagrass meadows occur in back-reef lagoons, between the beaches or cliffs and the adjacent fringing reefs (Gullström et al. 2021).

It should be noted, however, that the precise areas covered by seagrass beds and the relative species densities in Tanzania are not well mapped, limiting the ability to effectively manage and protect this important coastal ecosystem. However, the project team is aware of a current WIOMSA supported study being undertaken by the University of Dar es Salaam which aims to update mapping of seagrass habitats in the vicinity of Tanga, Bagamoyo, Dar es Salaam, Mafia Island, and Mtwara. Once completed, it will be important that this data is integrated into other existing spatial datasets. Their most notable role is to provide breeding, nursery and feeding grounds for many invertebrates and fish species. Seagrass beds also support complex food webs both through dead and living biomass. The fish and shrimp communities associated with seagrass

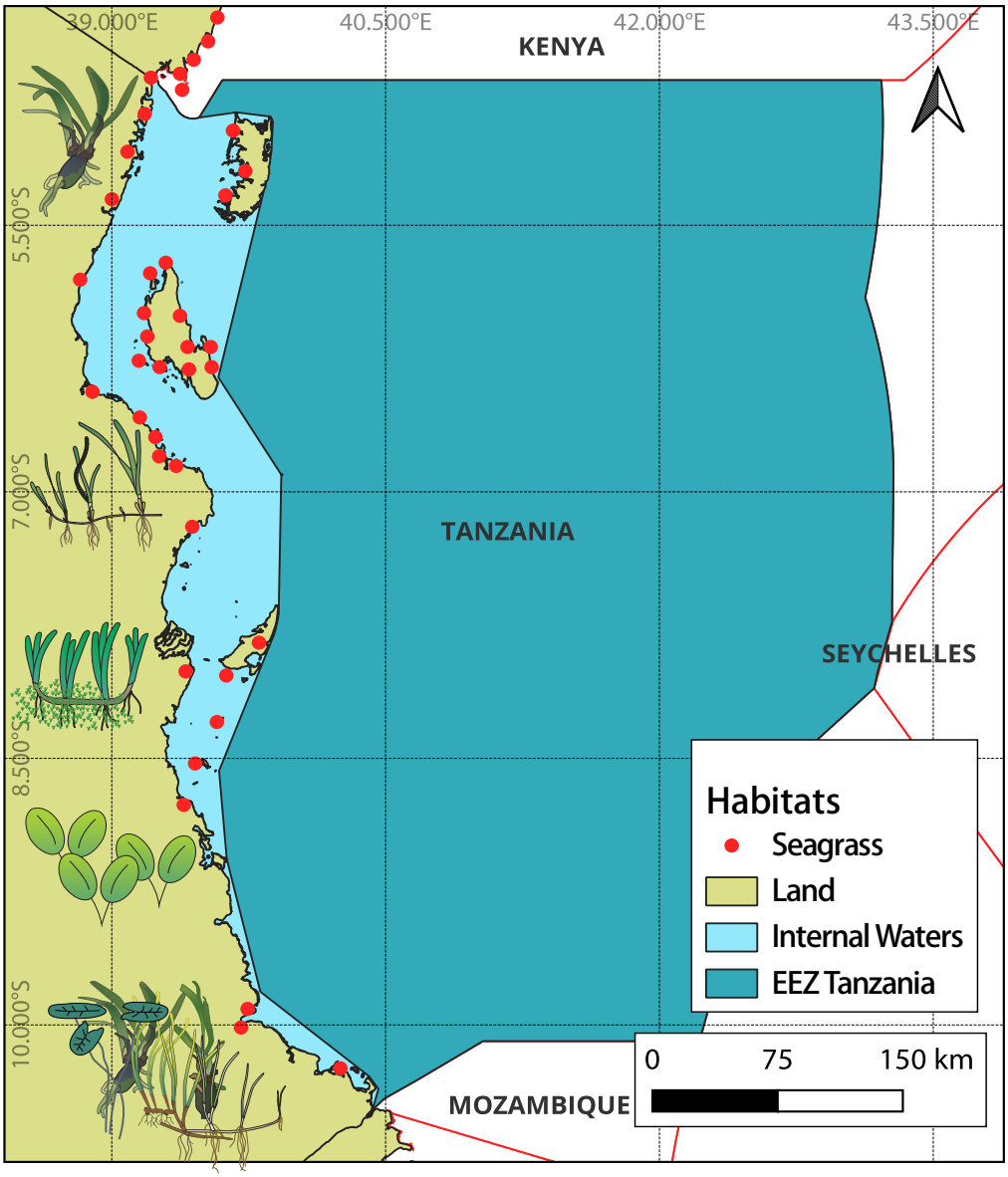


Figure 4.4: Spatial distribution of seagrasses across the United Republic of Tanzania

beds are important to both the artisanal and industrial fishery (TCMP, 2001a). In the URT, seagrass meadows are particularly important feeding grounds for sea turtles. Studies of dugong distribution and migration along the Tanzania coast also show that they are associated with areas of extensive seagrass beds particularly in the Rufiji delta and Mafia-Kilwa area which has a viable dugong population (ASCLME, 2012).

Seagrass beds across the URT are threatened by a range of natural and human activities. Some of the threats include climate change, tourism, mangrove deforestation, expanding seaweed farms, semi-industrial, small-scale commercial and industrial trawling for inshore crustaceans, illegal trawling for fish and crustaceans during the closed season, invertebrate gleaning, waste disposal, unsuitable farming practices and coastal development.

Mangroves

Mangroves, situated at the confluence of land and the marine environment, offer a wide range of ecosystem services that are vital for coastal areas. They act as a natural shield by capturing sedi-

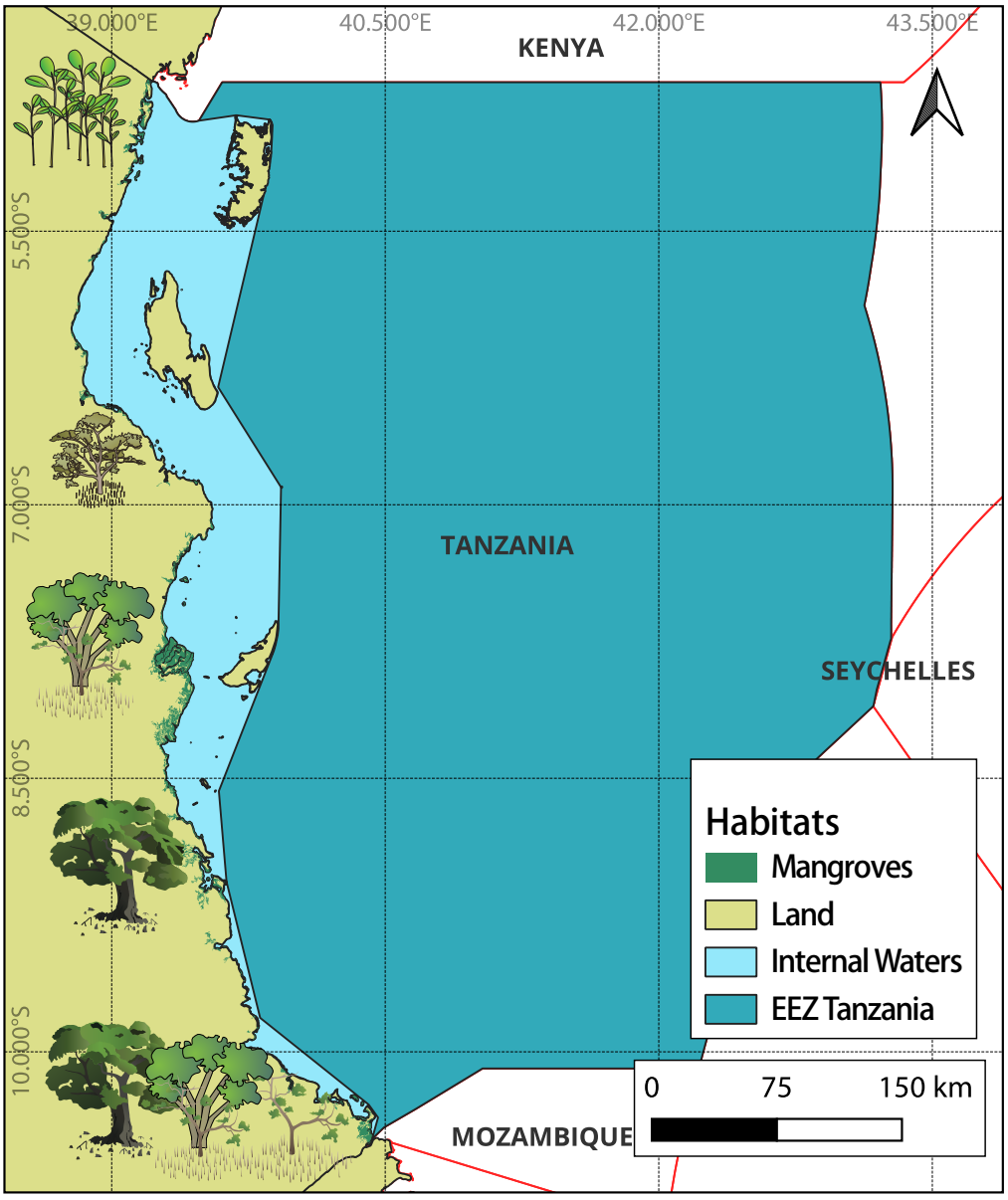


Figure 4.5: Spatial Distribution of Mangrove Forests Across the United Republic of Tanzania

ments eroded from the land and preventing wave erosion along shorelines. Mangroves also serve as a protective barrier for the extensive coral reef system, safeguarding it from potential damage. During severe storm events and tsunamis, they provide a crucial buffer against sea surges and flooding. These ecosystems serve as vital nurseries for juvenile fish and invertebrates, enhancing the biomass of coral reef fish communities. Mangroves support a rich biodiversity, offering a habitat for a diverse range of species including birds, fish, crustaceans, reptiles, and mammals. They are not only ecologically significant but also provide essential resources to human communities, supplying food, timber, fuel, and medicinal plants. Additionally, mangroves play a significant role in mitigating climate change by sequestering atmospheric carbon in marine sediments, contributing to the concept of "Blue Carbon" and helping to reduce the impacts of global carbon emissions.

Nine species of mangrove are found in mainland Tanzania and ten in Zanzibar (Tanzanian Forest Services Agency [TFSA], 2022; MNRT, 2021). Tanzania accounts for roughly 1% of mangrove coverage worldwide. These forests are found in the tidal inlets, estuaries and creeks along the mainland coast, and in Zanzibar. According to Mangora et al. (2016), mangrove forests in Tanzania can be classified into four distinct types. The first type is riverine mangroves found in the Rufiji Delta and estuaries of rivers such as Pangani, Wami, Ruvu, and Ruvuma. The second type is lagoon mangroves, which form in and around partially enclosed water bodies and receive seasonal freshwater input. Examples of lagoon mangroves include those in Mkinga, Tanga, Kipumbwi-Sange, Bagamoyo-Dar es Salaam-Mkurunga, and Kilwa-Lindi-Mtwara. The third type is coastal fringing mangroves, primarily influenced by tidal forces, and located around major islands such as Mafia, Pemba, and Unguja. The fourth type is overwash mangroves, which are distinctive to the small islands surrounding Pemba.

Mangrove forests in the country are divided into three major management zones which are the Northern Zone, comprising mangroves of Tanga Region; Central Zone, comprising mangroves of Dar es Salaam and Pwani region; and the Southern Zone, comprising mangroves of Lindi and Mtwara Region (Office of the Vice President, 2022). According to official MNRT records of 2015, mangrove areas in Tanzania mainland covers 158,000 ha (Table 4.3), although former official records of 1990 indicate an area of 115, 000 ha (Table 4.4). This positions Tanzania as the third country in Eastern Africa in terms of mangrove coverage, trailing behind Madagascar and Mozambique. Based on the most recent government data from 2015, there has been an overall increase in the extent of mangroves in Tanzania. However, it is important to note that in certain regions, there has been a clear decrease in the areal extent of mangroves (Table 4.3). It is essential to conduct an assessment to determine and verify the present spatial extent of mangroves across the mainland Tanzania and Zanzibar.

Table 4.3: Estimated mangrove coverage by zones and regions in the mainland Tanzania. Source: Tanzania Forest Service, 2015.

Zone	Regions	Mangroves (ha)
Northern	Tanga	1,701
Central	Dar es salaam, Pwani	125,418
Southern	Lindi, Mtwara	30,981
		158,100

Table 4.4: Mangrove coverage by region and district in the mainland Tanzania and Zaanzibar for 1989 and 2016. Data sources: Ministry of Natural Resources, and Tourism and UNEP-WCMC

Area	Region	Districts	Mangroves (ha) 1989	2016
Mainland	Tanga	Mkinga ,Tanga City and Muheza	9,403	8,452
		Pangani	1,756	2,060
	Dar es Salaam	Ilala, Kinondoni & Kigamboni	2,253	1,426
	Pwani	Bagamoyo	5,636	3,424
		Mkuranga	3,858	5,107
		Mafia	3,473	2,575
		Kibiti/Rufiji	53,255	41,227
	Lindi	Kilwa	22,429	23,353
		Lindi Town, Mtama	4,547	4,027
	Mtwara	Mtwara	8,942	8,652
			115,512	**100,395**
Zanzibar	**Region**	**Districts**	**1997**	**2016**
	Unguja	Unguja	5,929	3,390
	Pemba	Pemba	13,919	7,615
			19,848	**11,005**

In the country, the largest contiguous area of mangrove forest, covering an area of about 53,000 ha, approximately 50% of all mangroves is found in the Rufiji Delta (Figure 4.5). Other important mangrove sites in the country include deltas and estuaries of the Pangani, Wami, Ruvu and Ruvuma rivers and the coasts of Unguja, Pemba and Mafia islands (TCMP, 2001) . Mangroves make an important contribution to the economy of the URT and the livelihoods of coastal citizens representing up to US$10.3 million per year in the direct use of natural resources for the Rufiji Delta alone (Mangrove Alliance, 2019). The relatively good condition and high species diversity in the mangrove communities provides important ecological and socio-economic services. Commercial fisheries of crabs, prawns and fish are directly dependent on the mangrove ecosystems thus, the two main prawn fishing grounds are areas adjacent to the Rufiji Delta and Bagamoyo. Likewise, the fishing for crab is an important activity in the Pangani river mangroves. It is estimated that over 150,000 people make their living directly from mangrove resources in Tanzania (Mangrove Alliance, 2019).

This notwithstanding, mangroves across the country are under threat due to high demand for mangrove products such as firewood, charcoal, building, and boat making. In addition to commercial cutting and over harvesting, coral burning, lime production, salt making, clear-cutting for building sites, solar salt pans, commercial projects and clearance for agriculture (ASCLME, 2012) as well as clearance for coastal development, coral stone mining and boat making. Natural factors such as flooding and coastal erosion have also contributed to declines in area coverage in key areas. A study on mangrove cover change detection in Rufiji observed a loss of mangroves from 51,941 ha to 45,519 ha from 1989 to 2015 (Monga et al., 2018). The result has been attributed to continued destruction of mangroves due to rice farming and demand for timber in the Rufiji Delta (Office of the Vice President, 2022).

With the recognition of their national importance, mangrove areas in Mainland Tanzania have been designated as forest reserves since 1928. While in Zanzibar mangroves are conserved under the Forest Resources Management and Conservation Act of 1996, Fisheries Act of 2010 with associated Marine Conservation Unit Regulations of 2014, and Environmental Management Act of 2015.

The United Republic of Tanzania (URT) has recognized the crucial role of coastal resources, particularly mangroves, in sustaining both human and natural ecosystems. As part of its updated Nationally Determined Contribution (NDC), the URT has included several adaptation measures for coastal, marine environments, and fisheries (Government of the URT, 2021).These measures include strengthening the management of coastal and marine resources, implementing robust monitoring systems, promoting sustainable livelihood diversification for coastal communities, and enhancing area-based management systems to support the sustainable development of the blue economy. By prioritizing these actions, the URT aims to safeguard and effectively manage its coastal resources, including mangroves, for the benefit of both present and future generations.

4.2.2. Pelagic ecosystems

Beyond the narrow continental shelf areas of the coast, the offshore waters of the URT's EEZ contain extensive deep-water areas, where water depths drop rapidly to more than 1,000 m close to the seaward side of the coast. Of the total area of the EEZ, over 92% is deep sea (>200 m) and 72% is deeper than 2000 m (Gates et al. 2021). The maximum depth within the EEZ is 4,106 m. Some surveys of benthic habitats have been carried out, and recent research has found evidence of a seamount and deep-water canyons that fringe much of the URT's continental shelf, particularly in the south. The importance of such features is that they can be hotspots for biodiversity (for example as a habitat for the coelacanth), they can also be the focus of localised upwelling and pelagic fish aggregation. Such physical features could potentially be a basis for future offshore MPAs, however these features remain under-studied and that more research is needed (Masalu, 2008; Gates et al. 2021).

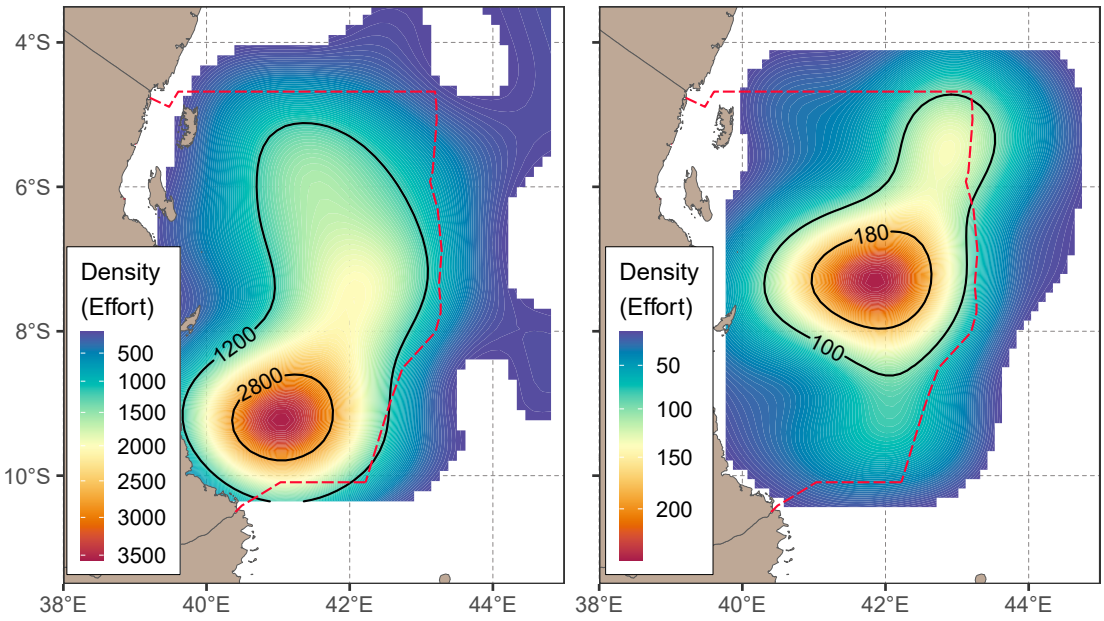


Figure 4.6: Spatial distribution of long-line fishing (a) and purse seine fishing (b) events in the EEZ of Tanzania. Source: Shaghude et al. (2021).

The URT's offshore pelagic ecosystems, both in the EEZ and territorial waters, are of principal economic importance for tuna and tuna-like fisheries. Industrial fishing effort in the EEZ has varied significantly over the past decade, but peaked during 2014-16. During that period, average annual tuna catches reported by industrial vessels were 13,888 MT, 80% from purse-seiners and 20% from long-liners. The predominant species caught were skipjack (43%), yellowfin tuna (37%) and bigeye tuna (16%) (Mbukwa et al., 2019). During the same period, recorded artisanal landings of tuna and tuna-like species, mostly from gill-netting in territorial waters, were 9,748 MT/yr.

Pelagic fisheries productivity varies seasonally as it is mainly dependent on phytoplankton abundance, which flourishes when waters are warm. EEZ tuna catches peak during October to February (Shaghude et al., 2021). There is also spatial variation; there is a hotspot for yellowfin tuna in the southern part of Tanzania's EEZ boundary line with Comoros; for skipjack tuna in the central EEZ; and for Bigeye tuna in the northern EEZ on the border with Kenya (Figure 4.6). These hotspots are driven by multiple factors including primary production, ocean currents and sea surface temperature (Shaghude et al., 2021). Other marine life such as cetaceans and turtles also transit the deep sea on seasonal and multi-annual migrations (Gates et al., 2021).

4.2.3. Marine species and biodiversity

Various important and valued species are found along the coast, including an estimated 150 species of corals in 13 families; 10 mangrove species; 300 species of seaweed and 12 of seagrasses, 8,000 species of invertebrates; 1,000 species of fish; five species of marine turtles; at least 20 species of marine mammals; and many seabird species (ASCLME, 2012). Coral reefs and associated habitats also support species such as marine turtles, dugongs, rays, whale sharks, and others (Shao et al. 2003). However, these are undoubtedly affected by local degradation and degree of fishing intensity and up to date studies appear to be needed.

The URT's offshore waters also support diverse charismatic mega-fauna including as many as 28 species of cetacean and five of the seven species of marine turtles, although few surveys on the occurrence and distribution of cetaceans have been conducted in the coastal waters of Zanzibar (Unguja and Pemba Islands) and Tanzania (Amir et al. 2005). The waters of East Africa are also a major hotspot for sharks and rays, with nearly 200 species recorded (UNEP-Nairobi Convention/WIOMSA, 2015). Several areas, such as the Pemba Channel, are known to be biodiversity hotpots for Cetacea and some species of sharks. Mafia Island also supports globally significant populations of whale shark and manta rays with a number of aggregation sites being around the island (see Figure 13).

In the context of EEZ fisheries, the main value species in the EEZ are tropical tuna and tuna-like species that seasonally migrate into URT waters. Overall catches over the EEZ are dominated by three fish groups: the Yellowfin tuna, Bigeye tuna, and Swordfish. Other less common groups were the Black Marlin and Sharks and minor groups were the Skipjack and Sailfish (Shaghude et al. 2021).

A number of species in the URT are globally threatened or are listed on the CITES appendices and require particular protection and monitoring. Among these species include;

- Perhaps the most iconic species from the area is the coelacanth, of which a genetically distinct population has been found in the waters of the URT. Unlike other areas of the WIO, where the species typically resides in deep water caves, the waters of the URT lacks caves. Instead, the species inhabits rocky terraces in somewhat shallower locations than in other parts of the WIO. This leaves the Tanzanian coelacanth population in the URT with potentially less protection than other populations.

- Prior to the mid-1970s, dugongs were both abundant and widely distributed along the Tanzania coast. Over the past 30 years however, dugong numbers have declined dramatically and, until recently, dugongs were thought to have disappeared from northern Tanzania - their former stronghold. However, even though sightings are rare, there is clear evidence that a small breeding population exists, associated with areas of extensive seagrass beds particularly in the Rufiji delta and Mafia-Kilwa area. Dugong isone of the most endangered species on the African continent and is on the IUCN Red list.
- Among animal groups that are internationally threatened are populations of green and hawksbill turtles; the URT being an important nesting area for both species. The extensive seagrass beds off the southern Rufiji Delta are important feeding grounds for green turtles. On Mafia Island, immature and adult green and hawksbill turtles are found in Chole Bay and along the east coast of Juani Island where seagrass and corals occur (ASCLME, 2012).

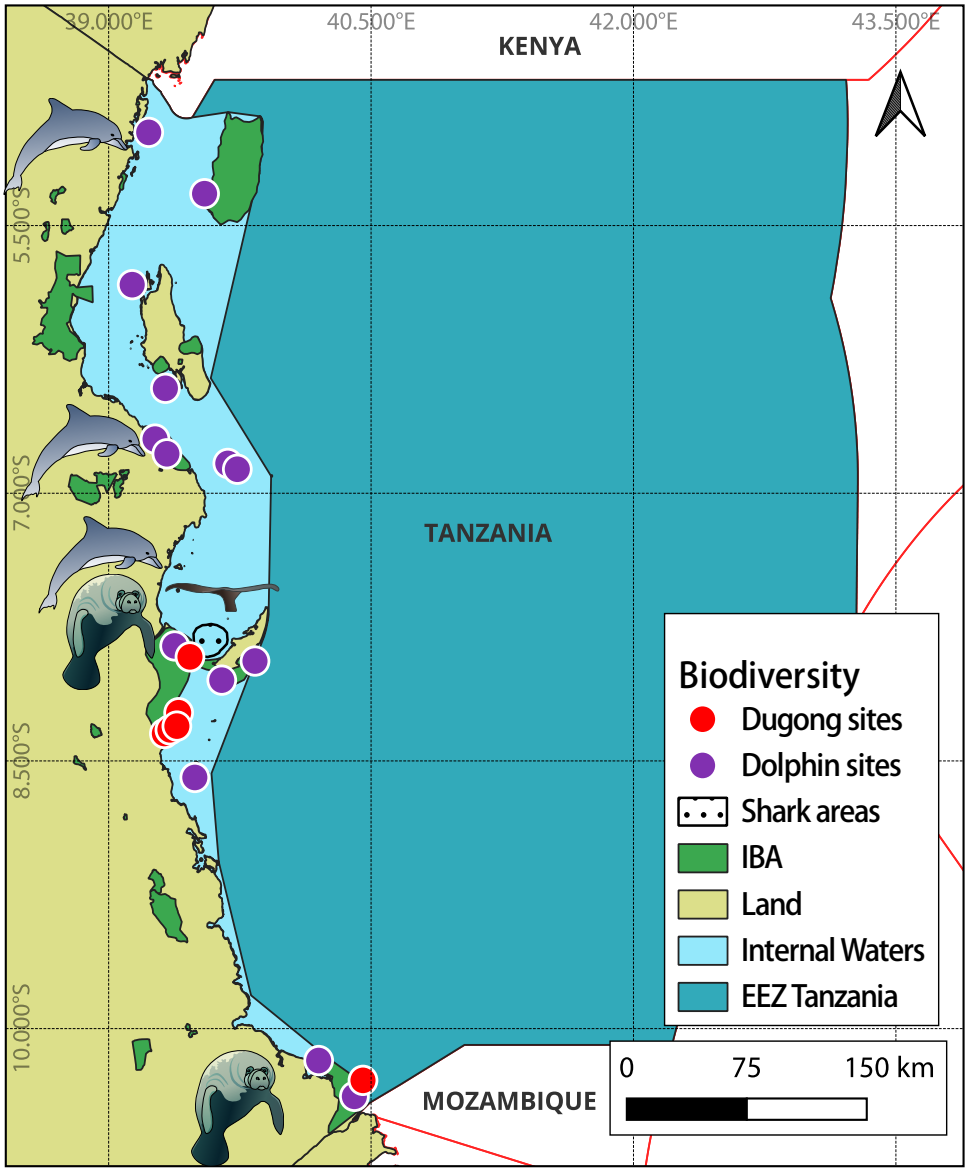


Figure 4.7: Key Biodiversity Sites across the United Republic of Tanzania.

4.3. MULTILATERAL ENVIRONMENTAL AGREEMENTS

4.3.1. International agreements

The URT is signatory to several international conventions and protocols that advocate the establishment of spatial management tools for biodiversity conservation and regulation of fisheries. Annex B lists all relevant international agreements to which the URT is a party. Notable among these are: the United Nations Convention on the Law of the Sea (hereafter 'UNCLOS'); the Convention on Biological Diversity ('the CBD'); the Jakarta Mandate of which outlines the program of action for marine and coastal biodiversity within the CBD; the United Nations Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement adopted under the UNFCC; the Convention on the Conservation of Migratory Species of Wild Animals (CMS); on the and a range of sector-specific instruments adopted by agencies such as the International Maritime Organization (IMO) and the Food and Agriculture Organization (FAO) (such as the 1993 FAO Compliance Agreement).

United Nations Convention on the Law of the Sea, 1982

The principal international legal framework governing the oceans is provided by the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which establishes a comprehensive scheme for the use and development of the oceans. The UNCLOS defines the extent of various jurisdictional zones in offshore areas and sets out the rights and obligations of countries on the basis of those zones. Countries have sovereignty over their internal waters, territorial seas and archipelagic waters, whilst in the EEZ, states have sovereign rights for exploration, exploitation, conservation and management of natural resources and over other economic activities and jurisdiction over the protection and preservation of the marine environment. On the continental shelf, states have sovereign rights for exploration and exploitation of non-living resources and sedentary living resources on the seabed.

The UNCLOS establishes an overall framework of governing principles and general obligations for the future protection and governance of the ocean. These include a general, and unqualified, obligation to protect and preserve the marine environment, including the obligation to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species and other forms of life as well as obligations relating to marine scientific research, conservation of living marine resources, monitoring risks or effects of pollution, and to minimize pollution and accidents to the fullest possible extent.

At a broad level UNCLOS fixes international obligations for States to protect the marine environment in three main ways:

i. Governments are explicitly obligated to protect and preserve the marine environment. Governments have the duty not to pollute the marine environment and must not condone the actions of nationals that do;

ii. Governments are obligated to cooperate on both a global and regional basis. This involves a fundamental commitment to make rules, regulations and standards that underpin the obligation to protect and preserve the marine environment; and

iii. Governments are obligated to adopt, enact and enforce at the national level, internationally agreed-upon standards for protecting the marine environment.

The duty to protect and preserve the marine environment includes the obligation that: "*measures must include measures to protect and preserve rare or fragile ecosystems, as well as the habitats of depleted, threatened or endangered species and other forms of life.*"

Convention on Biological Diversity, 1992

The Convention on Biological Diversity (CBD) is also especially relevant as an international treaty that calls for conservation of all biodiversity. At the tenth meeting of the Conference of the Parties, parties adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period. This Plan provides an overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system and all other partners engaged in biodiversity management and policy development. Parties agreed to translate this overarching international framework into revised and updated national biodiversity strategies and action plans within two years.

Included in the Strategic Plan, the following Targets are of particular importance to spatial management in the marine environment:

> **Target 6:** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits; and
>
> **Target 11:** By 2020, at least 17 percent of terrestrial and inland water, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscape and seascapes.[https://www.cbd.int/sp/targets.]

It is noted that the Secretariat of the CBD is currently undertaking consultations with States party to the Convention on a post-2020 biodiversity framework. As such, it is anticipated that new targets will be adopted in the near future.

Subject to the Convention, each Party is required to take action to protect components of coastal and marine biodiversity within its national jurisdiction. Coastal States can exercise jurisdictional rights over their marine waters as defined by UNCLOS. As such, the CBD's obligations apply within these maritime zones, insofar as they are consistent with rights and obligations under UNCLOS. Thus the creation and management of spatial management tools pursuant to the CBD must be consistent with these rights and obligations, such as the right of innocent passage and the rights of coastal States to establish and enforce measures for the conservation of marine living resources within their zones of jurisdictions.

The CBD places great emphasis on in situ conservation, calling upon Parties to adopt measures ranging from the establishment of a system of protected areas, to the rehabilitation of degraded ecosystems and the protection of natural habitats and species conservation in natural surroundings. It is these obligations – set out in Articles 6-8 of the Convention - that are the most relevant in the context of MSP. Article 6 requires inter alia Parties to develop national strategies, plans and programmes for the conservation and sustainable use of biological diversity. This planning should incorporate a number of sustainable use management tools such as protected areas which are required under Article 8 of the Convention.

United Nations Conference on Environment and Development (Agenda 21)

Agenda 21 is a comprehensive non-binding action of the United Nations with regard to sustainable development. It is an action agenda for the UN, other multilateral organizations, and individual governments around the world that can be executed at local, national, and global

levels. Chapter 17 of Agenda 21 is devoted to the protection of the ocean, seas and coastal areas as well as the protection, rational use and development of their living resources. It proposes a plan of action and how to implement the principle of sustainable development that governments and local authorities can use.

Programme Area A addresses Integrated management and sustainable development of coastal areas, including exclusive economic zones. In this regard, Objective 17.5 of Agenda 21 requires that coastal states commit themselves to integrated management and sustainable development of coastal areas and the marine environment under their national jurisdiction, including, *inter alia*:

i. Providing for an integrated policy and decision-making process, including all involved sectors, to promote compatibility and a balance of uses;

ii. Identifying existing and projected uses of coastal areas and their interactions;

iii. Applying preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects; and

iv. Providing access, as far as possible, for concerned individuals, groups and organizations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate level.

United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) established an international environmental treaty to“ combat “dangerous human interference with the climate” system.” The objective of the Convention is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The convention states that such stabilization should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change; to ensure that food production is not threatened; and to enable economic development to proceed in a sustainable manner.

The convention provides fundamental principles and obligation of various actors at national level and international levels as well as informs preparation of national reports and other climate change related policies. Among the key principles underlined in UNFCCC includes: -

> *The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. In view of this, policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors.*

Paris Agreement

The Paris Agreement was adopted under the auspices of the UNFCC with the goal of limiting global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.

Implementation of the Paris Agreement requires economic and social transformation, based on the best available science. The Agreement requires countries to reassess their carbon reduction commitments every five years, where there will be an issuance of new greenhouse gas (GHG) reduction targets in five-year cycles, beginning in 2020. As such, by 2020, countries were required to submit their plans for climate action known as nationally determined contributions (NDCs). In their NDCs, countries communicate actions they will take to reduce their Greenhouse Gas

emissions in order to reach the goals of the Agreement. Countries also communicate in the NDCs actions they will take to build resilience to adapt to the impacts of rising temperatures.

To better frame the efforts towards the long-term goal, the Paris Agreement invites countries to formulate and submit by 2020 long-term low greenhouse gas emission development strategies (LT-LEDS). LT-LEDS provide the long-term horizon to the NDCs. Unlike NDCs, they are not mandatory. Nevertheless, they place the NDCs into the context of countries' long-term planning and development priorities, providing a vision and direction for future development.

Article 7 of the Paris Agreement establishes a global goal on adaptation – of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in the context of the temperature goal of the Agreement. It aims to significantly strengthen national adaptation efforts, including through support and international cooperation. It recognizes that adaptation is a global challenge faced by all. All Parties should engage in adaptation, including by formulating and implementing National Adaptation Plans, and should submit and periodically update an adaptation communication describing their priorities, needs, plans and actions. The adaptation efforts of developing countries should be recognized

Convention on the Conservation of Migratory Species of Wild Animals

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range. Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each State joining the Convention, CMS promotes concerted action among the Range States of many of these species.

Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention. For this reason, the Convention encourages the Range States to conclude global or regional agreements. Such agreements may range from legally binding treaties (called Agreements) to less formal instruments, such as Memoranda of Understanding, and can be adapted to the requirements of particular regions. The development of models tailored according to the conservation needs throughout the migratory range is a unique capacity to CMS.

In 2014 the 11th meeting of the Conference of Parties adopted Strategic Plan for Migratory Species 2015-2023. The Plan includes the following five strategic Goals which are to guide the implementation activities of States:

Goal 1: Address the underlying causes of decline of migratory species by main-streaming relevant conservation and sustainable use priorities across government and society

Goal 2: Reduce the direct pressures on migratory species and their habitats

Goal 3: Improve the conservation status of migratory species and the ecological connectivity and resilience of their habitats

Goal 4: Enhance the benefits to all from the favourable conservation status of migratory Species

Goal 5: Enhance implementation through participatory planning, knowledge management and capacity building

2030 Agenda for Sustainable Development

The last twenty years have seen tremendous increase in environmental awareness, which culminated with the adoption, in 2015, of the 2030 Agenda for International Development, and its 17 Sustainable Development Goals (SDGs). Of these, Goal 14 (Life Below Water) is particularly relevant to the Blue Economy since it addresses many of the issues that need to be addressed for Tanzania to realise its blue economy ambitions.

Box 1: SDG 14: Life Below Water

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

14.8 Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.

14.9 Provide access for small-scale artisanal fishers to marine resources and markets.

14.10 Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want.

4.3.2. Regional policy framework

East African Action Plan and Nairobi Convention

The WIO's marine space is managed by the countries of the East Africa Region (including the URT) through the Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern Africa region. The Action Plan led to the 1985 adoption of the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention).

The Convention, which covers the combined EEZs of its East Africa region parties, provides a mechanism for regional cooperation, coordination and collaborative actions in the Eastern and Southern African region, that enables the Contracting Parties to harness resources and expertise from a wide range of stakeholders and interest groups towards solving interlinked problems of the coastal and marine environment including critical national and trans – boundary issues. The Convention offers a regional legal framework and coordinates the efforts of the member states to plan and develop programmes that strengthen their capacity to protect, manage and develop their coastal and marine environment sustainably, as well as requiring the adoption of measures aimed at preventing and controlling marine pollution from all sources, the Convention also requires parties to take appropriate measures to protect and preserve fragile ecosystems and to assess the environmental impacts of activities under their jurisdiction. The Convention is supplemented by the following protocols:

i. Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency in the Eastern African Region, adopted in 1985;
ii. Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, adopted in 1985; and
iii. Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities, adopted in 2010.

The importance of MSP to the Western Indian Ocean (WIO) region is also reflected in the priority afforded the activity under the Nairobi Convention. At its 2015 Meeting of the Contracting Parties to the Nairobi Convention, the parties adopted Decision CP8/10: Blue and Ocean Economy, which urges "Contracting Parties to cooperate in improving the governance of areas beyond national jurisdiction, building on existing regional institutions including the Nairobi Convention and developing area based management tools such as marine spatial planning to promote the blue economy pathways in the Western Indian Ocean Region."

To support this aspiration, the Secretariat is currently executing the GEF – funded SAPPHIRE Project. A core component of the project is to support the regional development of MSP, both at the national and regional levels. To this end, the Secretariat of the Nairobi Convention, with support from the Western Indian Ocean Marine Sciences Association (WIOMSA) is preparing both the ICZM Protocol as well as a regional MSP strategy, intended to inform both regional MSP processes as well as to provide a framework to underpin national processes (Metuge et al. 2021).

Indian Ocean Rim Association

The Indian Ocean Rim Association (IORA) is a regionally-focussed inter-governmental organisation, established on 7th March 1997 for the purpose of facilitating and promoting economic cooperation, bringing together *inter-alia* representatives of Member States' governments, businesses and academia. IORA seeks to build and expand understanding and mutually beneficial co-operation through a consensus-based, evolutionary and non-intrusive approach.

The blue economy is a key focus area for IORA, as evidenced in the adoption of the IORA Blue Economy Declaration in 2015. The Declaration seeks to harness oceans and maritime resources to drive economic growth, job creation and innovation, while safeguarding sustainability and environmental protection.

Since 2015, several capacity building programmes have been carried out covering a wide range of areas, including inter alia: fisheries and aquaculture; seafood products safety and quality; seafood handling, post-harvest processing and storage of fisheries and aquaculture products; banking and artisanal fisheries; sustainable management and development of fisheries resources; fish trade; seaport and shipping; maritime connectivity; port management and operations; marine spatial planning; ocean forecasting/ observatory; blue carbon; and renewable energy.[https://www.iora.int/media/8248/iora-charter-min.pdf] The IORA Secretariat has identified the following six priority pillars in the blue economy: Fisheries and Aquaculture; Renewable Ocean Energy; Seaports and Shipping; Offshore Hydrocarbons and Seabed Minerals; Marine Biotechnology Research and Development; and Tourism

Blue economy development in IORA will further be strengthened and is expected to be on the top of IORA's agenda in the coming years, with the establishment of the Blue Economy Working Group (WGBE), emanating from the IORA Action Plan 2017-2021, that reiterates IORA's commitment to promote blue economy development in the region as a key source of inclusive economic growth, job creation and education.

4.4. NATIONAL ECONOMIC DEVELOPMENT FRAMEWORK AND DEVELOPMENT PRIORITIES

Recognising the critical contribution that the ocean makes to national development, the URT is prioritising development of the blue economy as part of its broader national framework for economic development. In this regard, the current national economic development frameworks are important in framing the current context for MSP across the URT. Since the general elections in 2020, the Government, in consultation with relevant stakeholders, has prioritized and formulated key development policies and actions in the major development plans, which are:

i. The Tanzania Development Vision 2025
ii. The URT National Five Year Development Plan 2021/22 – 2025/26
iii. Zanzibar Development Vision 2050
iv. Zanzibar Development Plan (2021-2026)
v. Zanzibar Blue Economy Policy 2022

In addition, the URT Government is now in the process of developing a comprehensive Blue Economy Policy and Strategy, which will support a more wider implementation of the Blue Economy agenda across the URT. Both Governments have also released several sectoral development strategic or plans (SDPs) for tourism, environment, fisheries, aquaculture, maritime transport, oil and gas, education, health, energy, waste management, water and sanitation. All these have been integrated in Agenda 2030 towards achievement the Sustainable Development Goals (SDGs).

4.4.1. Mainland Tanzania

Tanzania Development Vision 2025

Tanzania's Vision 2025 (URT, 1995) aims at attaining high quality livelihood for its people and develops a strong and competitive economy, among other things. Some of the strategies toward attaining these objectives are: ensuring food security and self-sufficiency; universal access to safe water; absence of abject poverty; reduction in infant and maternal mortality rates; economic growth rate of 8% per annum or more; attainment of macroeconomic stability; and an adequate level of physical infrastructure. These objectives may not be attained if climate change adaptations concerns are not factored in the development process and mitigation opportunities in the context of sustainable development are not fully exploited.

The URT National Five Year Development Plan, 2021/22-2025/26

The National Five Year Development Plan 2021/22 – 2025/26 (FYDP III) was adopted by the current Government in June 2021. According to the Keynote section, delivered by the President, "*The Plan is a continuation of Government's efforts in achieving the goals we set in the National Development Vision 2025 of our enduring exertion to further improve the standard of living for all Tanzanians*."

The Tanzania Development Vision 2025 (TDV 2025) was adopted in 1999 and has been implemented through various Programs and The Long-Term Perspective Plan–2011/12 - 2025/26 whose implementation was divided into three phases of the Five-Year National Development Plans. The First Five Year National Development Plan–2011/12 - 2015/16 had a theme of unleashing growth potentials by de-bottlenecking binding constraints to growth. The Second Five Year National Development Plan–2016/17 - 2020/21 focused on nurturing industrialisation for economic transformation and human development.

The current plan represents the third and final Five-Year National Development Plan, and has a core theme of realising competitiveness and industrialization for human development that aims to increase efficiency and productivity in manufacturing using the resources available in abundance within the Mainland Tanzania. The FYDP III aims to guide the national effort towards the attainment of TDV 2025, making Tanzania a middle-income, competitive and semi-industrialised economy with shared growth and high-quality human development. The FYDR III is premised on three key pillars, namely:

Good governance: Governance entails a bundle of national priceless values which include: national unity and social cohesion of the people of the United Republic of Tanzania; peace and security; a just and equitable society, upholding human dignity; rule of law; and political stability.

Economic growth: This pillar aims to enable increased productivity and innovation in all sectors of the economy. Both productivity and innovation entail competitiveness at individual, firm and national level, with the expected result export performance. As a key component of this pillar, the FYDP III implicitly recognises the value addition opportunity of a number of blue economy sectors including tourism, fisheries and mineral extraction.

Social development: Socially inclusive development is seen as a core condition for social stability and mobility of any economic system. To this end, the FYDP III recognises the importance of policies dedicated to:

i. Spending on social development (health and education, human settlements, clean & safe water, environment – paying attention to equitable access, gender and people with disabilities and

ii. Expanding networks of economic infrastructure, such as roads, power and communication, to potential but hard-to-reach areas of the country and disadvantaged sections of the population. Access to financial services for most poor households in urban and rural areas has been made possible with rapid increase in mobile telephony.

The main detail of the FYDP III is contained within chapter 5 which presents a series of strategic interventions for competitiveness, industrialisation and human development. With regard to the blue economy and MSP, these include interventions relating to *inter alia*: transport infrastructure, the energy sector, agriculture (including fisheries and aquaculture), environmental and natural resources management, tourism and, specifically, the blue economy.

The FYDP III recognises that implementation of the plan will involve the formulation of numerous policies, guidelines and strategies. Moreover, it is recognised that implementation will require a coordination structure that reflects the broad range of stakeholder interests and the need for a "whole of government" response to many of the challenges identified. This is a particularly relevant issue for the blue economy, which as a subject cuts across numerous different sector agencies and involves multiple stakeholders. The lack of a single coordinating agency for the blue economy in Mainland Tanzania has already been highlighted as a critical issue for implementation of MSP.

4.4.2. Zanzibar

Zanzibar Development Vision 2050

The Zanzibar Development Vision 2050 (ZDV 2050) was adopted in 2020. The ZDV 2050 is a continuation and successor of the Zanzibar Development Vision (2020), the State's first long-term development planning vision for the period 2000-2020, which, among other things, assisted Zanzibar to achieve lower-middle income status during the term of the plan.

The overall Vision set out under the ZDV (2050) is "*To attain Upper Middle-Income Status by the year 2050 through sustainable and inclusive human development.*" The Vision is shaped by the following four key pillars, each divided into different priority areas.

i. Economic transformation

ii. Infrastructure linkages

iii. Human capital and social services

iv. Governance and resilience

Zanzibar Development Plan (2021-2026)

The Zanzibar Development Plan 2021-2026 (ZADEP) is the first plan to be developed for the implementation of the ZDV 2050. ZADEP's overarching theme 'Blue Economy for Inclusive Growth and Sustainable Development', reflecting prioritisation of blue economy development by the current government of the President of Zanzibar and Chairman of the Revolutionary Council, Dr. Hussein Ali Mwinyi. The ZADEP presents a five-year development pathway built around the following five thematic areas:

i. Exploring blue economy potentials;

ii. Enabling environment and infrastructure development;

iii. Boosting economic diversification;

iv. Human capital and social development; and

v. Governance and resilience.

For each of these five thematic areas the ZADEP sets out a series of Strategic Interventions and key actions to realise these interventions. The most relevant to the blue economy and MSP are highlighted in Table 4.5

Table 4.5: Key strategic interventions from the Zanzibar Development Plan (2021-2026)

EXPLORING BLUE ECONOMY POTENTIALS	
Priority Sectors	**Strategic Interventions**
Overarching	• Enhance coordination of blue economy activities
Fisheries, Aquaculture & Marine Resources	• Enhance development of fishing sector • Enhance rational management of Marine resources • Enhance Research & Development for marine resources • Strengthen international and regional co-operation
Tourism	• Enhance blue tourism in Unguja & Pemba towards a sustainable coastal and maritime tourism • Diversify tourism products (sea sports, heritage tourism). • Enhance visibility of Zanzibar as an up-market tourist destination in traditional, emerging and new markets • Strengthen capacity building to address shortage of skilled labour • Enhance excellence in service delivery in tourism sector
Seaports & Marine Transportation	• Strengthening port productivity • Expand passenger handling capacity and clearance
Oil & Gas	• Strengthen the Oil and Gas upstream • Strengthen the Oil and Gas downstream
ENABLING ENVIRONMENT AND INFRASTRUCTURE DEVELOPMENT	
Priority Sectors	**Strategic Interventions**
Energy	• Ensure security of energy supply
Water,Sanitation & Hygiene	• Improve water infrastructure • Strengthen sanitation, sewerage systems and infrastructure
Information & Communication	• Strengthen the businesses using emerging ICT infrastructure
BOOSTING ECONOMIC DIVERSIFICATION	
Priority Sectors	**Strategic Interventions**
Overarching	• Improve the livelihood of the extremely poor people
Agricultural Production & Productivity	• Strengthen climate resilience and sustainable natural resources management

HUMAN CAPITAL AND SOCIAL DEVELOPMENT	
Priority Sectors	**Strategic Interventions**
Research & Innovation	• Enhance Research and Development (R&D). • Enhance Innovation
Social Protection & Employment	• Strengthen employment opportunities and adherence of labour laws • Establish friendly environment for economic empowerment • Create employable skills for woman, youth and vulnerable groups
GOVERNANCE AND RESILIENCE	
Priority Sectors	**Strategic Interventions**
Land Utilization & Management	• Ensure equitable and sustainable land use plan and management
The Environment & Climate Change	• Ensure a sustainable waste management system • Strengthen conservation of Marine and terrestrial biodiversity and its ecosystem • Strengthening mineral sector
Governing Institutions & Public Services	• Strengthening public participation in decision making process

Given that Zanzibar is essentially a small island state, the ZADEP highlights the clear inter-linkages between the various priority sectors, particularly with regard to the blue economy. In the context of the blue economy thematic areas, MSP is identified as a critical tool for achieving better coordination of blue economy activities. In this context, the Plan highlights, as one of its key visions:

> *"Sustainable exploitation of marine-related resources and products within an operational blue economy framework guided by marine spatial planning, environmental preservation and clear investment procedures".*

Achievement of the various strategic interventions relating to the blue economy needs to be considered in the context of the recently adopted Zanzibar Blue Economy Policy.

Zanzibar Blue Economy Policy 2022

The recently adopted Zanzibar Blue Economy Policy (2022) reflects a shift in focus away from the traditional sector-specific approach to managing marine resources and activities to a more integrated manner, that reflects the overall importance that the ocean plays in the socio-economic development of coastal and island nations. It is one of very few such policies adopted globally to date and is, therefore, quite ground-breaking in both its approach and aspiration. This is reflected in the following statement in the Foreword to the policy:

> *"The realignment of the Blue Economy Policy of Zanzibar comes against the backdrop of the global COVID19 pandemic which has disrupted our economy and livelihoods, affecting local, regional and global supply chains. The Revolutionary Government of Zanzibar... .....has been aggressively pursuing our economic recovery plan by enhancing the potential of our Ocean to transform our country to a better future. For us, the Ocean will always be part of our lives and that Blue Economy is about sustainable development based on our ability to sustain our livelihoods from the Ocean." (MoBEF, 2022)*

The overall goal of the policy is to promote sustainable economic growth, environmental stewardship and improved livelihoods through the sustainable utilisation of the sea and other blue resources.

Specifically, the policy seeks to:

i. Strengthen coordination between multiple sectors within the Blue Economy framework;
ii. Promote and improve social inclusion through local community empowerment, with a focus on women, youth, and those with special needs involved in Blue Economy activities;
iii. Ensure safety and security of the maritime domain in coordination with relevant national maritime security agencies;
iv. Improve food and nutritional security through sustainable management of blue resources; and
v. Mobilize resources to harness the potential of ocean and its components to optimize GDP through sustainable Blue Economy initiatives.

The policy focusses on the development of five priority areas within the BE framework, namely:

a. Sustainable tourism
b. Fisheries and aquaculture;
c. Maritime trade and infrastructure;
d. Renewable energy and oil & gas development; and
e. Blue economy governance.

Table 4.6: Key strategic interventions from the Zanzibar Blue Economy Policy 2022

PRIORITY AREA	STRATEGIC INTERVENTION RELEVANT TO MSP
Fisheries & Aquaculture	• Enhancing sustainable fisheries • Fisheries and aquaculture resources management • Ecosystem changes due to climate change • Research in fisheries and aquaculture
Maritime Trade & Infrastructure	• Port infrastructure and related facilities
Renewable Energy & Oil and Gas Development	• Adoption of offshore renewable energy • Awareness in oil & gas sector
Sustainable Tourism	• Environmental protection of marine hotspots
Blue Economy Governance	• Blue economy coordination • Maritime safety, security and environmental challenges • Marine spatial planning • Blue economy and empowerment of women, youth and people with special needs

For each of these five priority areas, the policy identifies a number of strategic interventions that are needed to operate successful implementation of the blue economy. From the perspective of MSP, the most relevant of these are highlighted in Table 4.5 above. The policy aligns with existing sector-specific policies relating to management of marine resources. Importantly, the policy anticipates and provides for the establishment of an institution to execute and coordinate blue economy-related activities. This will be an important element in the development of any future MSP framework. Overall, it can be seen the development frameworks for both Mainland Tanzania and Zanzibar, in particular, strongly reflect the importance of the blue economy. MSP should therefore be seen, not only as an enabler for the blue economy, but also for the wider national development goals for both territories.

4.5. GENDER AND THE BLUE ECONOMY

The role of women in the blue economy is particularly important, since women make a significant contribution to employment in the fishery value chain. In the URT women are increasingly involved in fisheries and aquaculture, including in fish trade and octopus fishing among others. Seaweed farming along coastal areas is also an important income generation activity dominated by women, although it is labour intensive and the prices are very low because of the value-chain inequities. Women fishers contribute significantly to household income and food security, and their economic contributions are often the mainstay of family and community sustenance. However, fisheries, remains a traditionally male-dominated sector where women's contributions are greatly devalued. Furthermore, women's work in fisheries and aquaculture often lacks formal recognition, and women are vastly under-represented in policy and decision-making. Across the URT women face barriers compared to men in accessing credit, agriculture inputs, land ownership, and labour.

Empowering women to increase their participation in the blue economy value chain is particularly critical in the URT, where the industry provides livelihoods and contributes to food security and nutrition to a vast majority of the population. The negative impact of COVID-19 on business

operations has raised the need to support women who depend on the blue economy to keep their businesses afloat. A recent UN study on Women's Economic Empowerment in Fisheries in the Blue Economy of the Indian Ocean Rim (UN Women, 2020), reinforces the need for the formal recognition of women's contributions to the growth and sustainability of this industry.

The Government has been making efforts in main-streaming of gender issues into national policies, plans and strategies. The promotion of gender equality in the country is guided mainly by the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), The AU Charter on Human and Peoples Rights, which is reinforced by the Protocol of the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, the AU Gender and Climate Change Policy (2009); and the Southern African Development Community (SADC) Declaration on Gender and Development (1998).

The URT is committed to addressing gender inequality in all aspects of women's lives. Gender is integrated into the National Five-Year Development Plan (2021/22- 2025/26) and Zanzibar Development Plan (2021 – 2026), and both the Tanzania Development Vision 2025 and Zanzibar Vision 2050 emphasize the country's commitment to promoting gender equality in all social, economic, and political contexts. In line with this goal, the government has passed and implemented several policy reforms which have supported greater gender equality and women's empowerment in terms of blue economy, education, health, employment, access to assets, and protection from violence.

A number of current initiatives are also worth mentioning:

i. The URT has developed a National Plan of Action for Implementation of the Small Scale Fisheries Guideline -SSF Guidelines (NPOA-SSF Guidelines) which was officially launched in March 2021. The NPOA advocates for the formulation of gender-sensitive policies and regulatory frameworks, designed through consultations and data across the value chain, and promotes gender equality in small-scale fisheries through the formation of a national platform of women organizations for small-scale fisheries (Tanzania Women Fisherfolk Association) which is supported by the establishment of Gender desk at the Ministry of Livestock and Fisheries.

ii. The URT is participating in a WIOMSA-led initiative to establish the Women in Marine Science (WiMS) network to coordinate and oversee issue of gender inclusion in the WIO region.

iii. A Coastal Women Fisheries Organization Network (COWOFONET) has been established in the URT which includes a number of women organizations with the representation from all regions and Districts of Indian Ocean in Tanzania Mainland with the aim of empowering coastal communities to take more responsibility for management of local fisheries resources.

iv. Since 2020, UN Women has supported the Government of Zanzibar to ensure gender perspectives are integrated into Zanzibar's blue economy policies, strategies and plans. This has resulted in the development of the first Blue Economy Gender Strategy and Action Plan in 2022. UN Women has also supported the Zanzibar Government to integrate gender perspectives in the Fisheries Policy of 2022, and is implementing various initiatives geared towards enhancing the participation of women in blue economy sectors through a joint programme undertaken with FAO, IFAD and WFP.

v. Moreover, UN Women has recently launched a 4-year project on strengthening women's and girls' meaningful participation, leadership, and economic rights

(WLER) at local levels. Although not specifically focussed on the blue economy, this $9 million project, supported by the Government of Finland, will be implemented in 18 districts in six regions of Tanzania, including Arusha, Dar es Salaam, Coast (Pwani), Lindi, Mtwara and Singida.

This progress notwithstanding, in order to reach the full potential of the blue economy, more support will be needed to support the expansion of business and employment opportunities for women. In this regard, MSP offers a unique opportunity to mainstream gender into the development of future planning and decision-making for the development and utilisation of marine and coastal resources throughout the URT.

4.6. OVERVIEW, POLICY & LEGAL FRAMEWORKS OF KEY BLUE ECONOMY SECTORS

4.6.1. Marine Protected Areas

4.6.2. The URT has a long history of conservation planning, both terrestrial and marine. As a result, an extensive network of protected areas already exists throughout the country. To support these, a broad range of spatial management measures are available, for controlling the different marine uses and activities, under different legal instruments and that could be included in a MSP initiative (Annex E). According to the most recent MPA assessments undertaken by the Secretariat of the Nairobi Convention in collaboration with WIOMSA a total of 25 MPAs have been established across the URT (19 in Mainland Tanzania and 6 in Zanzibar).

Mainland Tanzania MPAs

In Mainland Tanzania, two types of marine protected area exist – Marine Parks and Marine Reserves (Table 4.7). There is also a Saadani National Park, which has a gazetted marine area. In the context of the URT's international obligations to conserve marine biodiversity, the current network of MPAs in Mainland Tanzania covers a total area of 2,209 km², constituting 7.66% of Tanzania's marine internal waters or 0.9% of all maritime waters. 149 out of the 2,209 km² is designated as no-take reserves. Also within the marine realm, all mangrove forests in Tanzania Mainland are gazetted as forest reserves.

Table 4.7: Marine protected areas in Mainland Tanzania. Source: UNEP-Nairobi Convention/ WIOMSA (2021a).

Area	Objectives	Year	Area (km²)
Mafia Island Marine Park	Marine biodiversity conservation & fisheries management	1995	822.0
Mnazi Bay/Ruvuma Estuary Marine Park	Co-existence of biodiversity conservation & gas extraction	2000	650.0
Tanga Coelacanth Marine Park	Conservation of coelacanth	2009	522.0
Bongoyo Island Marine Reserve	Small island preservation and conservation of corals	1975	9.2
Mbudya Island Marine Reserve	Conservation of locally endangered coconut crab	1975	14.2

Area	Objectives	Year	Area (km²)
Pangavini Island Marine Reserve	Conservation of corals and seagrass	1975	2.1
Fungu-Yasini Marine Reserve	Sandbank preservation and conservation of corals	1975	22.9
Makatumbe Island Marine Reserve	Conservation of corals and seagrass	2007	7.78
Sinda Island Marine Reserve	Conservation of breeding ground of the endangered Hawksbill and Green turtles	2007	1.8
Kendwa Island Marine Reserve	Small island preservation and conservation of corals	2007	5.3
Ulenge Island Marine Reserve	Conservation of indigenous and migratory birds	2010	3.16
Mwewe Island Marine Reserve	Conservation of mangroves and corals	2010	0.4
Kirui Island Marine Reserve	Conservation and corals and seagrasses	2010	36.1
Kwale Island Marine Reserve	Conservation of indigenous and migratory birds	2010	12.13
Maziwe Island Marine Reserve	Conservation of breeding ground of endangered Hawksbill and Green turtles	1981	4.5
Shungumbili Island Marine Reserve	Small island preservation and conservation of corals	2007	4.2
Nyororo Island Marine Reserve	Small island preservation and conservation of corals	2007	21
Mbarakuni Island Marine Reserve	Small island preservation and conservation of corals	2007	3.8
Saadani National Park (marine)	Protection of marine turtles	2005	66
	Total protected area		**2,209**

Zanzibar MPAs

To date, Zanzibar has designated a total of five Marine Conservation Areas (MCAs) (UNEP-Nairobi Convention/WIOMSA, 2021b). Revised general management plans (GMPs) were prepared in 2020 for the five MCAs; they reflect a co-management approach. The GMPs provide for further zoning of MCAs into community management groups (CMGs), areas within which neighbouring communities largely share the same fishing grounds. Establishment of CMG areas is an ongoing process. In addition, three areas of coastal mangrove have been designated as a forestry reserve, either individually or as part of a broader conservation area designation (Table 4.8). The current network of MPAs in Zanzibar covers a total area of 2,262 km².

Table 4.8: Marine conservation areas in Zanzibar.

Conservation areas	Management	Year	Area (km²)
Pemba Channel Conservation Area	Government	2005	825.8
Menai Bay Conservation Area	Government	1997	717.5
Mnemba Island Marine Conservation Area	Government and Private	2002	337.3
Tumbatu Marine Conservation Area	Government	2014	118.2
Changuu-Bawe Marine Conservation Area	Government	2014	162.9
Chumbe Island Coral Park	Private	1994	0.55
		Total Area	**2,162.25**

In the context of the URT's territorial sea, this represents a total MPA coverage of 6,608 km², approximately 15% of the area of internal waters and territorial sea combined, compared with the global target of 30%. It should be noted that there are no MPAs covering areas within the EEZ at this stage.

4.6.3. Policy & legal framework for marine biodiversity conservation

4.6.3.1. Mainland Tanzania

Article 27(1) of the Constitution of Tanzania provides that "*Every person has the duty to protect the natural resources of the United Republic…*"[Constitution of Tanzania]. Within the United Republic of Tanzania (URT), various policies and laws are in place to govern the conservation and management of marine and coastal ecosystems and resources.

National Environmental Policy (2021)

The National Environmental Policy (NEP) of 2021, is the principle policy guiding the protection and management of Mainland Tanzania's environmental resources. The NEP serves as a national framework for planning and sustainable management of the environment in a coordinated, holistic and adaptive approach taking into consideration the prevailing and emerging environmental challenges as well as national and international development issues. The NEP promotes the main-streaming of environmental issues at all levels, strengthening institutional governance and public participation in environmental management regime. The long-term vision of this policy is geared towards realization of environmental integrity, assurance of food security, poverty alleviation and increased contribution of the environmental resources to the national economy.

The NEP addresses eight major environmental threats, namely: Land degradation; deterioration of water sources; loss of wildlife habitats and biodiversity; deterioration of aquatic systems; deforestation; environmental pollution; climate change; and, safe use of modern biotechnology. In addition, the NEP addresses the following three cross-cutting themes: inadequate environmental governance at all levels; inadequate financial resources for environmental management; and inadequate gender consideration in environmental management.

A number of policy objectives are directly relevant to MSP and their achievement would be assisted with a comprehensive MSP framework. These include *inter alia:*

i. To strengthen coordination of environmental management in sectors at all levels;
ii. To strengthen conservation of wildlife habitats and biodiversity;

iii. To enhance conservation of aquatic ecosystem for sustained ecological services and socioeconomic well-being; and

iv. To promote good governance in environmental management at all levels.

National Environmental Master Plan for Strategic Intervention (2022-2032)

The overarching objective of the Master Plan is to guide strategic and coordinated environmental interventions at all levels, based on spatial variation of environmental challenges and intervention options. The plan is strongly aligned with the national development framework. The Master Plan will also be an instrumental tool in executing and operationalising the National Determined Contributions (NDC), and will therefore contribute to achievement of the National Climate Change Strategy (2021).

The Master Plan provides the status of environmental challenges and the interventions required to address these challenges effectively. In the context of MSP, chapter 8 deals exclusively with coastal and marine ecosystems and identifies the following two priority areas for action:

i. Mangrove areas of Northern zone, Central Zone and Southern Zone.

ii. Corals located in Marine Parks of Mafia, Mnazi Bay and Ruvuma Estuary, Tanga Coelacanth and Dar es Salaam and Corals reefs areas located out of the Marine parks in Bagamoyo, Songosongo, Kilwa and Mtwara.

To address these priority areas, the Master Plan identifies a number of strategic interventions, including:

i. Promotion of alternative livelihood activities in coastal communities;

ii. Promote Marine Spatial plans (MSP) (including a target of developing and implementing localized Marine Spatial plans by 2032;

iii. Enhance conservation and management of coral reefs; and

iv. Reduce all forms of destructive fishing in a multifaceted approach.

National Integrated Coastal Environment Management Strategy (2003)

The National Integrated Coastal Environment Management Strategy (NICEMS) was established to support development of a national integrated coastal zone management (ICZM) program in Mainland Tanzania (TCMP, 1999). The goal of the strategy is to "*implement the National Environment Policy and other related policies in conserving, protecting and developing the resources of Tanzania's coast for use by present and future generations, to ensure food security and to support economic growth.*" The NICEMS is a cross-sectoral strategy, enacted in 2003, that seeks to give substance to the national vision for sustainable and integrated coastal management, by prescribing institutional arrangements needed for management of the coastal ecosystem, and identifies relevant stakeholders to support the process for implementing management and development activities. The stated objective and strategies contained in the NICEMS are highly relevant for MSP, which could provide a comprehensive tool for implementation of this strategy.

National Biodiversity Strategy and Action Plan (2015)

The National Biodiversity Strategy and Action Plan (NBSAP) is a requirement by the Convention on Biological Diversity (CBD) for the whole of the United Republic of Tanzania (including Zanzibar). It focuses on the protection of aquatic biodiversity, agro-biodiversity and terrestrial

biodiversity. The overall vision which guides the NBSAP is to build a society that values all the biodiversity richness, using it sustainably and equitably, while taking the responsibility for actions that meet both the competing requirements of the present and the legitimate claims of the future generations. The NBSAP is designed to guide the development of sound management policies and help enable legal, regulatory, and institutional frameworks for rural communities and private sector to participate in biological resources utilization and combat illegal use of biological resources.

Wildlife Policy of Tanzania (2007)

The main policy dealing with wildlife conservation is the Wildlife Policy of Tanzania (2007). The key objectives of the policy are protection and conservation of wildlife and wetlands, sustainable utilization of wildlife and wetlands, management and development of wildlife and wetlands resources, strengthening resource monitoring and research and enhancing communication, education and public awareness. The policy defines the government's priorities in wildlife conservation through regulation of utilization of wildlife and wetland resources, monitoring of wildlife and wetland resources, strengthening human resource base and capacity building, developing infrastructure and modernizing equipment and enhancing international cooperation. The policy advances protected areas as the most reliable approach to wildlife conservation and aims at increasing the number of protected areas. Moreover, the policy encourages community participation in wildlife conservation and also defines the roles of central and local government institutions in managing wildlife resources, as well as the roles of other stakeholders including the private sector and NGO's.

National Parks Policy (1994)

The National Policies for National Parks in Tanzania (1994) focuses on the establishment and management of national parks. The purpose of this policy is to preserve national parks and to ensure that national parks retain a high degree of integrity in wildlife conservation. The policy covers a wide range of issues related to national parks including park planning, natural resource management, cultural resource management, wilderness preservation and management, public information and education and benefit sharing. The policy spells out the government's policy direction on use of parks, developments within national parks, tourism and concessions and law enforcement.

National Climate Change Response Strategy 2021-2026

The National Climate Change Response Strategy (NCCRS) 2021-2026 was prepared in response to growing concerns of the negative impacts of climate change and climate variability on the country's social, economic and physical environment. Preparation of this Strategy coincided well with the Tanzania Third Five Years National Development Plan, providing an opportunity of giving higher priority on climate change challenges and concerns in the national development agenda. It also sets precedence for the climate change agenda in the future five-year development plans.

The overall objective of this Strategy is to enhance overall national resilience to the potential adverse impacts of climate change and enable the country to pursue low emission development pathways to achieve sustainable development. The strategy includes a total of 11 specific objectives covering adaptation, mitigation and cross-cutting strategies, that will enable the URT to benefit from the opportunities available to developing countries in their efforts to tackle climate change. The Strategy recognises the impact of climate change of the URT's blue economy and related sectors with evidence of major climate change related impacts in Tanzania include destruction of coral reefs, coastal erosion, submergence of small islands, destruction of coastal infrastructures

and human settlement, intrusion of sea water into freshwater wells, and degradation of mangrove and coral reefs. Rising of temperature and rainfall anomalies will accelerate these impacts.

National Forest Policy (1998)

The aim of the Policy is to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of natural resources for the benefit of the present and future generations. The policy provides the foundation for Participatory Forest Management (PFM) and encourages the involvement of the communities and private sector in forest management through village land forest reserves, individual, group and community forests. The objectives of the Policy provide the opportunities for climate change adaptation and mitigation and how to address the challenges related to climate change and variability.

Environmental Management Act No. 2 of 2004

The Act provides the legal and institutional framework for the sustainable management of the environment in Mainland Tanzania. The stated objectives of the Act is to provide for and promote the enhancement, protection, conservation and management of the environment. The Act applies to Mainland Tanzania. This Act also outlines principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement. It goes on to establish a basis for the implementation of international instruments on environment, as well as providing for the implementation of the NEP. The Act provides for the establishment of environmental units in all sectors and ministries as conduits of linkage and collaboration in spearheading rational utilization of environmental and natural resources and advocates for the continued existence of the National Environment Management Council. Therefore the Act is highly relevant for MSP since it provides one of several legal bases for the designation, protection and management of ecologically sensitive areas (both onshore and offshore).

The Marine Parks and Reserves Act No. 2 of 1994

This Act provides for the establishment, management and monitoring of marine parks and reserves that will serve to protect, conserve and restore the species and genetic diversity of living and non-living marine resources as well as the ecosystem processes of marine coastal areas. The Act aims at protecting, conserving, and restoring species and genetic diversity of living and non-living marine resources and ecosystem processes of marine and coastal areas through management of marine and coastal areas so as to promote sustainable use of existing resources, and the recovery of areas and resources that have been overexploited or damaged.

Both the Act and the subsidiary Marine Parks and Reserves (Declaration) Regulations, 1999 operate within the context of national environmental and fisheries policies for the protection of natural resources and the fisheries sector. This Act and subsidiary regulations are considered to be highly relevant for the establishment of an MSP framework, since they provide for the establishment of protected areas and zoning plans. These are likely to be one of the critical spatial management tools in any future MSP framework.

National Parks Act No. 11 of 2003

This Act focusses on the management and protection of wildlife in national parks. The aim of the Act is to provide for the establishment, control and management of national parks. The relevance of the Act is that it allows for the designation of marine parks and reserves (designated under the MPRA) as National Parks. To date, only one park has been established that includes

a marine component, namely the Saadani National Park, established in 2005 north of Dar es Salaam. Saadani is especially important for protecting rapidly diminishing coastal forests, the Wami River estuary and mangrove environments, along with a marine component of offshore coral reefs and turtle nesting areas.

Wildlife Conservation Act No. 5 of 2009

This Act is the main wildlife conservation law in Tanzania. The objectives of the Act are, *inter alia*, to protect and administer wildlife rich areas, protect and conserve wildlife resources and their habitats, promote the contribution of the wildlife sector to the sustainable development of Tanzania, enlarge the wildlife protected areas system and encourage community participation in wildlife conservation. The scope of application of the Act is limited to Mainland Tanzania.

The Forest Act No. 14 of 2002

This Act provides for the management of forests, undertaking environmental impact assessments for certain development projects; establishment of forest management plan for all types of forests for the purpose of its best endeavours to achieve sustainable management of the forest reserves over the periods of time; and designates Community Forest Reserves, Mangrove Forest Reserves and encourages community-based management. The Act governs protection, conservation, management and utilization of forests and forest products in Tanzania. The Act also defines restrictions and prohibitions relevant for forest reserves and reserved (threatened) trees. From the perspective of MPAs that include areas of mangrove habitats, the tools under this Act may provide additional opportunities for protection and management of coastal habitats.

Local Government (Urban Authorities) Act, No. 8 of 1982

This Act provides for the establishment, composition and legislative powers of urban based government authorities in Tanzania. Section 55 (1) of the Act provides for the general duties of the urban authorities which include: to take and acquire the taking of measures for conservation of natural resources, prevention of soil erosion and prohibition or control of cultivation; collection of wastes, etc. Section 80 (1) of the Act provides that *the urban authorities may, subject to the consent of the proper officers, make by-laws to be applicable in their areas.* Some of the by-laws may be on environmental and natural resources management. In some areas this provision has been used to promulgate by-laws to manage marine resources.

The Local Government (District) Authorities Act, No. 7 of 1982

Local government at district, ward and village levels are being governed by the 1982 Local Government (District Authorities) Act. The Act contains extensive provisions relating to the establishment, composition, basic functions and legislative powers of district, township councils and village authorities. There are limited provision relating to fisheries management and protection in the Act.

The Local governments are also responsible for licensing artisanal fishing activities and enforcing fisheries by-laws. They are responsible for revenue collection and proposing biodiversity conservation areas for gazettement as protected areas. In addition, they are in charge of managing village and/or local government forest reserves. They are also involved in overall management of marine parks/reserves, mostly through the advisory committee set up by the Marine Parks and Reserves Unit (MPRU).

The Urban Planning (Planning Space Standards) Regulations, 2018

In many countries, setback areas or setback buffer zones are used as one of the coastal zone planning instruments. They are generally defined as areas or buffer zones along coastal zone where permanent development activities are not allowed or are restricted. In Tanzania, the setback area for different water bodies is specified in the Urban Planning Regulations of 2018. These regulations apply to all planning areas and have specified a setback line of 60 m from both sides of a river and from high water mark in a lake, sea and ocean.

4.6.3.2. Zanzibar

Zanzibar Environmental Policy (2013)

The main goal of the Policy is to bring together all sectors responsible for environmental protection, conservation, management in the islands for a long-term integrated approach in tackling environmental pollution and degradation of natural resources. It recognizes the essential links between sustainable development and sound environmental management and takes account of the special limitations of island ecosystems. In particular, the policy aims to guide economic activities in ways that will be sustainable and will not harm the environment in the long term.

Concern for marine and coastal biodiversity features strongly in the policy. Section 4.4.6 of Chapter 4 promotes an integrated approach to ecosystem management, highlighting the need for integrating environmental concerns into development policies and plans, and the establishment and management of conservation and protected areas in both marine and terrestrial environments. In this regard, the Policy identifies, as one of its key Strategies, the need to *"institute mechanism of integration to effectively mitigate natural resource use conflicts."*

Zanzibar Forest Conservation and Management Policy (1996)

The overall environmental goal of The Forest Policy for Zanzibar (1996) is to protect and conserve forest resources including wildlife, flora and fauna and enhances the role of forest resources in maintaining soil and water conservation. Since conservation of mangrove forests is included within the provisions of this policy, it is therefore important to consider in the development of MSP as a mechanism for establishing, managing and linking spatial management tools. The policy also puts emphasis on the conservation and development of the forest resources for present and future generations, and on the need for comprehensive and perpetual tree planting as well as public education.

Zanzibar Blue Economy Policy (2022)

The Policy reflects a shift in focus away from the traditional sector-specific approach to manage marine resources and activities to a more integrated manner that reflects the overall importance the ocean plays in the socio-economic development. The policy highlights that the islands of Zanzibar are blessed with a unique coastal and marine biodiversity and cultural richness and that Zanzibar's Blue Economy development. Notwithstanding the five priority development areas at its centre, Zanzibar aims to exploit new ocean- based opportunities *"while safeguarding and restoring marine ecosystems with reduced biodiversity loss, increased climate change adaptation, and low social risks"*. The Policy further identifies Sustainable Marine Ecosystems as one of its 13 guiding principles, towards which end "the biodiversity, productivity and integrity of sensitive coastal ecosystems will be promoted" as a key approach to blue economy development in Zanzibar.

Zanzibar Fisheries Policy (2022)

The policy stresses upon supporting artisanal fisheries, seaweed farming and other aquaculture businesses; value addition and strengthening value chains, community empowerment and micro-credit entrepreneurship, private sector investments and infrastructure e.g., fish ports, fish processing facilities, fish markets, etc. The policy also highlights on issues related to environmental conservation of the marine ecosystems such as coral reefs; and calls for an increased education and awareness programmes on marine conservation and implementation of the goals of the Integrated Coastal Zone Management (ICZM).

Zanzibar Fisheries Masterplan (2022)

The goal of the Fisheries Masterplan is to bring together public and private institutions that are directly or indirectly concerned with the management of sustainable fisheries, aquaculture, coral reefs, marine conservation areas, etc. such as MoBEF, Zanzibar Planning Commission, academic research institutions, Zanzibar Maritime Authority, local government authority, tourism commission, environment, education, NGOs, and implement an integrated action plan on sustainable fisheries and aquaculture management and its implementation under environmental and sustainability safeguards.

Zanzibar Maritime Strategy for IMO Instrument (2019)

The objective of the Strategy is to accelerate adoption, incorporation, mainstreaming, implementation and enforcement of IMO instruments into the local maritime regulations (ZMS, 2019). The Strategy also enhances the level and capacity of maritime safety and security for the local shipping activities; and ensure compliance in the protection of marine environment and coastal zones.

Zanzibar Land Policy (2018)

The policy framework integrates environment into social and economic development policy framework while providing transparent and easy access to land for all under sustainable land use plans and Zanzibar Spatial Development Strategy. Coastal Setback Buffer Zones are set up and regulated under the Policy. The Policy stresses upon the protection of environment, cultural heritage and use of natural resources. Nevertheless, the Policy addresses the challenges of climate change and related consequences of natural disasters, food shortage, and recognize the trend of rapid urbanization as a major challenge to sustain future living and livelihoods (ZLUP, 2018).

Zanzibar Water Policy (2004)

The policy on water emphasizes the protection of catchment and watershed areas all over Zanzibar. The policy advocates that development planning must take proper account on the management of water resources and the challenges of increasing salt water intrusion because of Sea Level Rise (ZWP, 2004).

Zanzibar Local Government Policy (2012)

The objective of the policy is to ensure that an establishment of an accountable local government that has a capacity to provide better and efficient basic services to the people and safeguard their livelihoods and ecosystem services (land, water, waste management, ocean,). The Policy promotes grounds for local good governance framework, provisions of local socio-economic programmes of the Government, security and protection, conflict resolution and ensuring the welfare of the local communities and sustainable development (ZLGAP, 2012).

Zanzibar Tourism Policy (1998).

The policy objectives are to develop, plan, manage and promote sustainable beach and marine oriented tourism industry that emphasizes on sustainability of exploitation of coastal and marine resources. Wastes risk damaging the pristine land and marine environment of the islands. The Tourism Policy addresses such challenges and promotes sustainability of tourism industry in Zanzibar (ZTP, 1998).

Zanzibar Investment Promotion Policy (1998).

The policy objectives are to mobilize investments that are socially and economically beneficial as well as environmentally sound in order to protect Zanzibar's natural and cultural heritage. The Policy promotes and advocates for high quality tourism and ensures that investment in tourism attracts the type of tourism markets that are compatible with Zanzibar culture, tradition, coastal and marine environment and resource limitations (ZIPP, 1998).

Zanzibar Disaster Management Policy (2011).

The focus of this policy is to have safe and sound livelihoods with minimum disaster disruption to social and economic development issues. Thus, this policy aims to develop necessary capacity for coordination and collaboration for comprehensive disaster management programmes at all levels: Marine environment, coastal zone management, waste issues; or fire hazards, marine accidents, or weather storm could degrade the surrounding marine zones and affect livelihoods while harming coastal and marine biodiversity (ZDMP, 2011).

Zanzibar Climate Change Strategy (2014).

The objectives of the Zanzibar Climate Change Strategy are to address economic, social and environmental risks and vulnerabilities caused by the impacts of climate change and formulate an action plan to adapt to those climate impacts. The Strategy is supported by the Climate Action Plan which addresses disaster reduction, tourism, low carbon development, waste management and marine environment. (ZCCS, 2014).

Zanzibar Energy Policy (2019)

The rationale of the Energy Policy pertaining to ocean governance is related to ensuring reliable and guaranteed energy supplies; develop and utilize existing and potential energy resources; to incentive energy conservation and increase energy efficiency; placing high priority on development and use of indigenous energy sources such as renewable energy and fossil fuel resources which is currently under exploration; and paying close attention to ecological and environmental issues during the development of energy projects (ZEP, 2019).

Zanzibar Integrated Solid Waste Management Strategy (2018).

The Strategy addresses the existing Solid Waste Management (SWM) situation, challenges and priorities in the Zanzibar archipelago that would lead to a cleaner and environmentally safer environment, for its inhabitants and the tourists visiting the islands. At present the SWM situation in the Zanzibar archipelago, in both Unguja and Pemba Island is unsatisfactory. Solid waste is not being adequately collected and is littered or dumped in illegal/wild dump sites in the surrounding areas, including the tourist zone in prime coastal and marine domains. The strategy focuses also on integration of measures to prevent land based sources of pollution.

Zanzibar Oil and Gas Policy (2016)

The Policy vision is to ensure a sustainable, transparent, and an inclusive oil and gas industry contributing to strong socio-economic growth while preserving the pristine environment of Zanzibar. The policy mission is to provide guidance and enabling conditions for and effective, efficient, transparent, inclusive, sustainable and safe exploration, extraction and utilization of the petroleum resources towards the socio-economic development of the people of Zanzibar. The principal objective of the policy is to manage the upstream oil and gas subsector for sustainable development through broad participation and maximum value benefits with minimum negative impact on environment, safety and health. One of the guiding principles is the protection of the environment and conservation of the coastal and marine biodiversity (ZOGP, 2016).

The Zanzibar Environmental Management Act No. 3 of 2015

Part XII of the Environmental Management Act (ZEMA, 2015) on Conservation of Biodiversity and Water Resources, contains provisions for joint declaration and management of coastal and marine protected areas between environment, fisheries and forestry for the protection of biodiversity and wildlife in Zanzibar. The Act also has provisions for preparing guidelines, strategies, programmes and measures for the conservation of marine and terrestrial biodiversity. The Act establishes a mechanism for a Biodiversity inventory, determines species of conservation significance and prescribes measures for a sustainable utilization of the Biodiversity resources. Integrated Coastal Zone Management is also defined with Zanzibar archipelago being declared as the coastal zone. Provisions specific to combat marine dumping are included.

The Zanzibar Environmental Management Act defines "Coastal Setback Buffer zone" as *'coastal area whose width range from thirty meters to one hundred meters towards the land, measured from the high water mark depending on the nature of the respective coastal zones.'* The 30m applies for coastal areas with a sea cliff and 100 m for gently sloping sandy beaches. This Act stipulates that no activities will be allowed in the coastal zone without the permission from the Zanzibar Environment Management Authority (ZEMA).

Fisheries Act No. 7 of 2010.

The Fisheries Act (ZFA, 2010) provides powers to prohibit, close, or limit marine activities affecting fishermen and fisheries. The provisions address marine pollution prevention and establish marine protected areas. In addition, the Act protects the established fish-landing sites across the isles and empowers the institution responsible for fisheries to maintain the preservation of those landing sites against encroachment or any attempt to forcefully resettle those sites. The Act empowers the responsible Minister to declare a conservation area in relation to all fish products or aquatic flora. In practice, this provision has been employed to establish five Marine Conservation Areas (MCAs) covering approximately 65-70% of near-shore waters around Unguja and Pemba Islands.

In practice of the general management plans (GMPs) for the 5 MCAs established to date, all revised in 2022, explicitly define conservation-related goals and objectives, alongside sustainable use and management objectives. The respective GMPs also propose establishment of no-take zones within each MCA to support, *inter alia*, biodiversity conservation, protection of endangered species and fisheries replenishment.

Zanzibar Marine Conservation Unit Regulations (2014)

The MCU (2014) Regulations' main functions include to manage all marine controlled/conservation areas established under the Fisheries Act so as to conserve marine ecosystems and benefit local communities. The Regulations also promote, develop and monitor the proper management

of marine controlled areas; build the capacity of the unit staff to carry out effective management of fishing, tourism and other related activities; educate, coordinate and guide the proper utilization and sustainable use of marine resources to different stakeholders; and promote public awareness on fisheries and management of tourism in the Marine Protected Areas.

The Marine Conservation Unit Regulations (2014) operationalise the Marine Conservation Unit established under the parent Act, and is the principal legal instrument for the establishment of marine conservation areas (MCA) under the Act.

Proposed new Marine Resources Conservation and Management Act, 2022

At the time of preparing this report, a draft new Act was under preparation by the MoBEF to develop a dedicated act for marine protected areas. This Act will focus on conservation of protection of marine flora and fauna, critical habitats, mangroves, inducing private sector blue economy financing in marine conservation areas, integrating conservation initiatives with the public and private sectors, and implementing multilateral environmental agreements on marine environment and biodiversity conservation.

Key draft provisions include:

i. Establishment of a new Department for Marine Resources Conservation and Management within MoBEF, responsible for managing Marine Conservation Areas (MCAs), effectively upgrading the former Marine Conservation Unit (MCU) previously under the Department of Fisheries.

ii. Minister has powers to declare MCAs in internal or territorial waters, in place of provision for establishment of 'controlled areas' in Fisheries Act, 2010 (see above). MCAs should be areas of importance for scenic nature, biodiversity, scientific or historical value, public enjoyment.

iii. Minister has powers to declare part of a MCA as a marine park, sanctuary or no-take zone within which fishing is entirely prohibited.

Forest Resources Management and Conservation Act No. 10 of 1996

The purpose of this Acts is to promote the protection, conservation and development of forest resources for the social, economic and environmental benefit of present and future generations of the people of Zanzibar. The Act defines forest resources to include: "(i) trees and other forest produce; (ii) the environmental benefits associated with trees and their living or *in situ* state; and (iii) all wild animals, wild plants, components of biodiversity and other living and non-living natural resources for which trees provide habitat, shelter or food or which are associated with forest ecosystems." The Act consists of 101 sections divided into 13 Parts.

Certain provisions of the Act are applicable to the protection and community co-management of coastal mangrove ecosystems and are, therefore, included in this analysis. From the perspective of coastal MCAs that include areas of mangrove habitats the tools under this Act may provide additional opportunities for protection and management of coastal habitats.

Sustainable Utilization of Non-Renewable Natural Resources Regulations, 2011

These regulations provide additional legal controls for activities in the coastal zone. According to the regulations, no person may "*excavate, mine, extract, dredge, collect, harvest, transform, transport, lease and/or sell any non-renewable natural resource*" without *inter alia* authorisation from the ZEMA. In addition, pursuant to regulation 6, the Regulations define a number of specific buffer

zones from within which it is prohibited to "*excavate, mine, extract, and/or dredge non-renewable natural resource*", including:

i. Within, and 1 km buffer zone from, any recognized forest protected area, and mangrove habitat; and

ii. Within, and one km buffer zone from the beach.

Zanzibar Maritime Authority Act (2009)

The Zanzibar Maritime Authority Act (ZMAA, 2009) Act regulates the powers of the Zanzibar Maritime Authority to regulate maritime activities and to ensure the prevention of marine sources of pollution and protection of the marine environment in alignment with the Maritime Transport Act.

Zanzibar Maritime Transport Act (2006)

The Zanzibar Maritime Transport Act (ZMTA, 2006) deals with, among many functions, safety of life at sea, maritime security, prevention of marine pollution, liability and compensation, and other matters of relevance to all the conventions, guidelines and codes and standards of the International Maritime Organization ratified by the United Republic of Tanzania.

Zanzibar Tourism Act (2009)

The Zanzibar Tourism Act (ZTA, 2009) implements sustainable beach tourism policy and its master-plan. The Act also regulates sustainable use of the coastal and marine environment from tourism activities and promote cultural eco-tourism; preserve heritage and coordinate public-private partnership in Zanzibar tourism industry.

Local Government Authority Act (2014)

The Local Government Authority Act (ZLGA, 2014) regulates utilization of environmental services in a community. Section 26 (1) of the Act specifies general functions of the local council which include maintenance of environmental sanitation, control of environmental pollution and preventing private nuisance, supervise and ensure measures to combat epidemic diseases; controlling extraction of stone, sand, wood, and other forms of natural resources, undertake afforestation and urban forestry initiatives, implement the land use plan, coastal zone management, climate change, disaster management, and population issues.

Town and Country Planning Decree (1955)

The Town and Country Planning Decree (TCPD, 1955) establishes a process for provision of orderly and progressive development of land in urban and rural areas including giving permission to develop such land, matters of land acquisition for development, planning, development control, preservation of historic buildings of special architectural or historic interests, land utilization, road planning, coastal zone planning, etc.

Occupational Safety and Health Act (2005)

The Act empowers the Occupational Safety Authority (OSHA-Z, 2005) to enter, inspect and examine any workplace for safety and health of workers related to any process in that workplace from physical environment, handling and storage, application of appliances and tools, use of explosive or highly inflammable materials, chemicals, or machinery, plant, or appliance and make sure that those facilities, equipment or materials are safety-compliant.

Zanzibar Standards Act (2011)

The objective of the Zanzibar Standards Act (ZSTD, 2011) is to protect the consumer or the user from the risks and dangers of using a product that may endanger health and safety of such consumers. The Act also ensures upholding of the quality of specifications of products, services and equipment. The Act is also meant to develop environmental standards for air, water and noise quality.

Zanzibar Public and Environmental Health Act No. 11 (2012)

The objective of the Public Health Act (ZPHEA, 2012) is to protect the public from health risks and hazards of unregulated housing and low sanitation standards. The Act also addresses prevention of public nuisance, prevention and control of infectious diseases, prevention and control of disease carrying vectors and vermin borne diseases, port health services, etc.

Zanzibar Disaster Management Act (2015)

Disaster Management Act (ZDMA, 2015) establishes the Disaster Management Commission which promotes and coordinates the implementation of the Disaster Management Policy. The Commission also implements all disaster management plans in Zanzibar including declaration of disaster situations, response measures and contingency matters including marine oil spill response plans, coastal and marine emergency, natural hazards such as floods, and climate impacts.

Development Control Unit Regulations (2015)

Section 9 of the DCU Regulations supervises the implementation of the Land Use Plan, and Local Planning Systems or any approved planning guidelines issued by the Town Planning Department or any other planning authority. It also supervises development in all designated areas, and any other key areas in Zanzibar including issuing a building permit. The Regulations also ensure that all building standards, building guidelines and procedures are properly adhered to as required by law or regulations. Also, the Regulations ensure that open spaces and public ways are administered as determined by the local Planning Sector or the Planning Guidelines issued by the Urban Planning Department or any other Planning Authority. Among other functions, the DCU facilitates the protection, preservation and management of historical, heritage and cultural sites, making the City of Zanzibar a hub of cultural development and an important centre of cultural expression in East Africa.

4.6.4. Institutional arrangements for marine biodiversity conservation

Several government ministries and technical agencies have mandates touching on the environmental management and conservation of coastal and marine ecosystems and resources, as outlined in .

Table 4.9: Agencies involved in conservation and environmental management

Ministry	Institution	Roles and responsibilities
Office of the Vice President	Environment Division	To coordinate issues relating to articulation and implementation of the National environmental policy and the EMA; To develop, coordinate and assess the implementation of strategies and plans to address the crossing cutting challenges related to environmental management and promote the integration of environment in other sector development frameworks; To advise the government on legislative and other measures for the management of the environment and/or the implementation of the relevant international agreements in the field of environment To oversee operations of the NEMC; To develop and issue reports on the State of Environment; and To coordinate the implementation of the green growth and climate resilient development agenda.
	National Environment Management Council	To undertake environmental enforcement, compliance, review and monitor environmental impact statements, research and awareness raising.
Ministry of Natural Resources and Tourism	Wildlife Division	Responsible for the management of Game Reserves, Game Controlled Areas and all wildlife outside protected area boundaries and Wetlands. Facilitates the establishment of Wildlife Management Areas. Creates awareness and disseminates information about wildlife management to the village communities in their village lands.

Ministry	Institution	Roles and responsibilities
	Forestry and Beekeeping Division (FBD)	Policy development and law enforcement. Human resources development. Management of forestry and bee-keeping training institutions. Monitoring and evaluation of policy implementation. Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations.
	Tanzania Forest Service (TFS)	Management of national forest reserves including forest plantations, bee-keeping reserves and apiaries. Includes management of all mangrove forests in Mainland Tanzania. Law enforcement. Rehabilitation of degraded areas. Provision of forest and bee-keeping extension services. Management of forest and bee-keeping resources in general lands.
Tanzania National Parks Authority (TANAPA)		The primary role of TANAPA is conservation and to advise the minister on the establishment of reserves and parks, including marine parks. In addition, TANAPA is particularly charged with functions of: Protection of natural resources, park facilities and tourists visiting the parks. Park management and development. Ecological and wildlife health monitoring. Community involvement in conservation efforts.
Ministry of Livestock and Fisheries	Marine Parks and Reserves Unit	To oversee management of marine parks and reserves operating under the auspices of MPRU. Policy development and implementation relating to MPAs and related facilities. Advise the responsible Minister on approval, revision and amendment of general management plans for any Marine Parks including other legislative matters pertaining to the conservation and management of coastal and marine resources.

Ministry	Institution	Roles and responsibilities
First Vice President's Office, Zanzibar	Department of Environment	To develop National Strategies and Guidelines of management of Environment. To coordinate the implementation of National strategies and Guidelines of management of environment. To prepare and manage implementation of strategic environmental assessment. To recommend environmental standards. To prepare and issue a report on the state of the environment for Zanzibar in every five years to be submitted to Minister. To coordinate implementation of the Environmental Policy. To coordinate all matters related to climate change adaptation, and mitigation measures. To coordinate and promote environmental research.

Ministry	Institution	Roles and responsibilities
	Zanzibar Environmental Management Authority	Enforcement and Compliance: Coordinates the implementation of the Zanzibar Environmental Management Act, manages the implementation of the regulations and ensures compliance with the standards, guidelines and orders relating to environmental conservation, prosecute and handles the cases related to environmental degradation and pollution, including those related to violation of the Zanzibar Environmental Management Act, 2015. Environmental Planning and Monitoring: Conducts environmental monitoring that will help to develop better management and protection of environment, monitoring of biodiversity, marine and terrestrial ecosystem, coastal zone management, natural resources and disposal of waste and wastewater, monitors and analyses the proposed areas for storage and disposal of waste and wastewater in partnership with other stakeholders, prepares guidelines and proposes the locations for destruction of unfit product. Environmental Impact Assessment (EIA): Coordinates EIA procedures, issues environmental assessment certificates, building capacity to community, public and private institution on EIA, conduct monitoring to ensure compliance of conditions attached with EIA certificates are implemented, and keeping the records of registered EIA/Audit experts/ firm eligible for conducting EIA in Zanzibar. Environmental Information and Communication: Provides information to the community and other stakeholders regarding the implementation of roles and responsibilities of the ZEMA, receives and responds to environmental complaints, operates the Zanzibar Environmental Information Management system.

Ministry	Institution	Roles and responsibilities
Second Vice President's Office	Disaster Management Commission	To coordinate all matters related to implementation of disaster risk preparedness, management, inventorization, modelling, recovery and resilience both on land and at sea. Implementation of the provisions of the Disaster Risk Reduction and Management Act No. 1 of 2015 on disaster risk planning, reduction, response, rescue, recovery and management. Establishing appropriate Disaster Management policies, regulations, plans, strategies, and guidelines for ensuring timely and effective response to disaster. Overseeing application of disaster management plans during any period of natural disaster or emergencies and give orders or directives necessary for the plan to be implemented. Coordinating all disaster relief operations and preparedness measures. Ensuring mobilization and accountability in DRR and response measures. Ensuring compliance of the Act by all other Government institutions including the chain command from the national level to the Shehia level.
President's Office (Finance & Planning) Zanzibar.	President's Office (Finance & Planning) Zanzibar.	Ensures macroeconomics stability for promotion of sustainable economic growth and development of Zanzibar through engagement of the Zanzibar Development Vision 2050, Zanzibar Development Strategy (ZADEP). ZPC is the highest economic development planning authority, supervising the implementation of such economic plans and provision of social services in Zanzibar. It is in charge of the Zanzibar's development planning hierarchy, Chief Government's Statistics.
President's Office (Labour, Economy and Investments)	Zanzibar Investment Promotion Authority (ZIPA)	Promotes and regulate foreign direct investments including ocean-related investments such as beach resorts, export zones industries, and the small islets investment programs.
	Labour Commission	Regulates occupational safety and especially in relation to Projects HSE aspects.

Ministry	Institution	Roles and responsibilities
President's Office (Regional Administration, Local Government and Special Departments)	Local Governments	Promoting health, safety and environment, public health and environmental sanitation, maintenance of local health, construction, transportation, public markets, fish landing sites, schools, community centres, business centres, etc services and infrastructure. Protection of local forests and biodiversity spots, water resources, heritage and cultural sites, disaster management and climate adaptation.
	KMKM	Enforcing maritime security and prevention of criminal and illegal activities offshore, management of marine resources and the protection and preservation of the marine environment. Marine rescue support operations, disaster and humanitarian and aid to civil authorities.
Ministry of Works, Communications and Transportation	Zanzibar Maritime Authority	Monitoring, regulating and coordinating activities in the maritime industry. ZMA discharges flag state and port state responsibilities in line with IMO conventions, instruments and codes. Regulates activities on shipping in the archipelago's sea waterways to ensure safety of navigation. As part of its safety and environmental responsibilities, it is tasked with investigating maritime casualties such as loss of lives resulting from overloading on boats, collision etc and take the appropriate actions. In partnership with other public agencies and institutions, ZMA ensures the prevention of marine source of pollution and protection of the marine environment. It pursues the local implementation of Tanzania's implementation of international maritime conventions such as IMO and ILO Conventions in collaboration with other stakeholders.

Ministry	Institution	Roles and responsibilities
	Zanzibar Ports Corporation	Planning, managing, building and operating Zanzibar seaports. Regulating the use of ports and of the port facilities. Providing, maintaining, extending and enlarging port facilities as required for the efficient and proper operation of the ports. Maintaining and deepening the approaches to, and the navigable waters within and outside the limits of any port. Maintaining lighthouses and beacons and other navigational service and aids as necessary. Providing facilities for the transport, storage, warehousing, loading, unloading and sorting of goods passing through any port, and operate or provide access to road haulage service providers.
Ministry of Health	Department of Preventive Services and Health Education	Regulates Public Health issues including promotion of occupational health and sanitation matters in blue economy sectors.
Ministry of Agriculture,Irrigation, Natural Resources & Livestock.	Department of Forestry and Natural Resources	Protects, conserve and develop forest and natural resources for the social, economic and environmental benefit of present and future generations in Zanzibar. To regulate conservation and management of Zanzibar's national parks (e.g. Jozani & Chwaka Bay and Ngezi-Vumawimbi), forest reserves, community forest management areas (COFMA) and the special forest areas. Conservation of flora and fauna and inventory of key species of ecological importance.
Ministry of Water, Energy and Minerals	Zanzibar Utility and Regulatory Authority (ZURA)	Provision of regulatory and utility services for downstream energy supply and distribution.
	Department of Minerals	Regulation of non-renewable natural resources including sand, fossil and coral stones, and marine dredge.

Ministry	Institution	Roles and responsibilities
Ministry of Lands and Housing Settlements	Zanzibar Commission of Lands	Implementation of all the provisions of the Land Tenure Act and its constituent amendments in Zanzibar. Implementation of the land policy, land use planning and land ownership process of registration throughout the country. Implementation of the integrated land use development and spatial planning with other Government policies. Developing an effective land information management system. Regulating all surveys and mapping in Zanzibar including marine spatial planning. Disseminating education and awareness on land use/ land administration system in Zanzibar.
Ministry of Tourism and Heritage	Zanzibar Commission of Tourism	Promote Zanzibar as a favourite beach and marine tourist destination while advocating for a sustainable tourism practices that addresses social and environmental aspects of the coastal and marine conservation. Ensures the provision of quality services, better infrastructure criteria, safety and security of tourists and visitors in Zanzibar.
Ministry of Blue Economy and Fisheries, Zanzibar	Department of Blue Economy Development and Coordination.	Responsible for coordination of the implementation of the Blue Economy Policy and Strategy of Zanzibar including marine spatial planning, blue economy investment and empowerment opportunities; multilateral environmental agreements related to maritime domain, regional and international fisheries agreements, maritime safety and security matters of Blue Economy.
	Department of Fisheries and Aquaculture Development	The DoFD is responsible for ensuring the sustainability of fisheries and to increase economics of the community as well as the nation. Regulates and manage the utilization of the fishery and aquaculture resources in Zanzibar. To ensure the prevention of overfishing. Fish landing sites are also regulated by the DoFD.

Ministry	Institution	Roles and responsibilities
	Department of Marine Conservation	Co-ordinates the management of marine conservation areas (MCAs). Key marine ecosystems such as the coral reefs and marine fauna such as the marine mammals (whales, dolphins and dugongs), sea turtles, and other key species fall under the supervision of the DoFD. Some of the Marine Conservation Areas (MCAs) include Mnemba Island Marine Conservation Area (MIMCA), Menai Bay Marine Conservation Area (MBCA), Tumbatu Islet Marine Conservation Area (TUMCA) and the Pemba Channel Conservation Area (PECCA). Chumbe Island Marine Park is a privately managed MPA that is co-managed along with the DoFD.
	Zanzibar Fisheries and Marine Resources Research Institute	Established to carry out fisheries and marine scientific research for policy guidance towards sustainable fisheries, climate adaptation, and marine conservation. Also responsible for blue bioproducts quality assurance and certification for exports.
	Zanzibar Fisheries Company	Engages commercial and industrial fishing activities in the internal, territorial and exclusive economic zone waters and development and operations of fisheries infrastructure in Zanzibar.
	Zanzibar Petroleum Regulatory Authority (ZPRA)	ZPRA was established in 2016 under Section 7(1) of the Zanzibar Oil and Gas Act No. 6 of 2016. It is empowered to regulate upstream oil and gas exploration and development operations in the Zanzibar archipelago.
	Zanzibar Petroleum Development Company	It is empowered to conduct oil and gas exploration and development operations in the Zanzibar archipelago.
Ministry of Trade and Industrial Development	Zanzibar State Seaweed Company	Engages commercial and industrial seaweed trade and processing activities and development and operations of seaweed processing industries in Zanzibar.

A number of protected areas are administered by multiple agencies (for example those protected areas designated under the respective Fisheries Acts that also contain significant areas of mangrove). The overlap of jurisdiction and conservation functions between different agencies managing broadly the same areas has implications for the appropriate management of these areas which may either not be afforded appropriate protection or may be subject to conflicting protection regimes. In practice, such situations are generally addressed well enough through inter-agency collaboration but there might be some instances that call for legislative clarity.

4.6.5. Role of local authorities in conservation of marine resources in Mainland Tanzania

Of particular interest in Mainland Tanzania's institutional framework for conservation and protection of coastal and marine resources is the role of lower levels of government, which are recognised by the NEP as having an indispensable role in achieving its policy objectives. Institutions falling under the umbrella of LGAs include: district councils, township (municipal) authorities and village councils, the latter also including subsidiary village natural resources committees (VNRCs) and beach management units (BMUs).

Formally, under both the Local Government (District Authorities) Act No. 7 of 1982 and the Local Government (Urban Authorities) Act No. 8 of 1982, whilst LGAs are explicitly mandated to regulate the use of forest resources and animals and birds within their areas of jurisdiction,[Local Government (District Authorities) Act (1982), Section 118 (2)n and (2)] there is no explicit mandate for protection of marine resources or fisheries. This is compounded by the fact that areas of jurisdiction of district councils on the coast generally extend to the mean low water mark and therefore most marine fisheries and other near-shore marine resources lie outside formal areas of jurisdiction of LGAs. This potentially constitutes a legislative gap to be remedied under future revisions to the respective Local Government Acts of 1982, especially in view of the fisheries management functions delegated to LGAs in practice.

4.6.6. Spatial management tools for marine biodiversity conservation

The legal framework outlined above provides for the establishment of numerous types of spatial management tools, not all of which have been given effect to. These are summarised in Table 4.10.

Table 4.10: Summary of legal mechanisms to support spatial management and marine conservation

Act	Management Tool	Purpose
Mainland Tanzania/URT		
Environmental Management Act No. 2 of 2004	Environmental Protected Area	For the designation and protection of any area of land which is ecologically fragile or sensitive.
Wildlife Conservation Act No. 5 of 2009	Wetland Reserve and Wetland Areas	Protection of areas of designated wetland
	Species Management Area	For the protection of any animal or class of animal or their habitat.
Marine Parks and Reserves Act No. 2 of 1994	Marine Parks	Relatively large marine areas that are zoned and managed for multiple-uses.
	Marine Reserves	Smaller areas within which extraction of marine resource is prohibited.
Forest Act No. 14 of 2002	Forest Reserves	Areas of forest that are designated, zoned and managed according to the uses allowed.
National Parks Act No. 11 of 2003	National Parks	The protection and management of relatively large areas of land for non-extractive purposes.

Act	Management Tool	Purpose
Deep Sea Fishing Authority Act No. 5 of 2020	Designation of defined zones for of conservation and management measures in the Exclusive Economic Zone waters.	To specify specific management measures to be applied to the fishery in any given area of the Exclusive Economic Zone which is jointly managed by Mainland and Zanzibar.
Zanzibar		
Zanzibar Environmental Management Act No. 3 of 2015	Biodiversity Hotspots, Integrated Coastal Zone Management, Climate Change Adaptation, Protected Areas.	For the designation and protection of any area of land, coastal and marine domain which is ecologically fragile or sensitive.
Fisheries Act No. 7 of 2010		
Marine Conservation Unit Regulations, 2010	Controlled Areas (Marine Conservation Areas)	Relatively large marine areas zoned and managed for multiple uses and to enable integration of communities in their decision making structures.
Forest Resources Management and Conservation Act No. 10 of 1996	Forest Reserves	Areas of forest that are designated, zoned and managed according to the uses allowed.
Oil and Gas (Upstream) Act No. 6 of 2016	Marine Conservation Areas and the Exclusive Economic Zone	For regulation of the strategic environmental assessment recommendations of the exploration and development activities pertaining to upstream oil and gas areas within Marine Conservation Areas and Exclusive Economic Zones.
Disaster Risk Reduction and Management Act No. 1 of 2015	Natural Disasters and Human-induced marine accidents and oil spills	For regulation of the preparedness, readiness, rescue and recovery management pertaining to land and marine domain.
Zanzibar Maritime Authority Act No. 3 of 2009	Protection against maritime pollution.	For regulation of the implementation, mainstreaming and adoption of IMO related marine pollution prevention agreements and protocols.
Zanzibar Maritime Transport Act No. 5 of 2006	Protection against maritime pollution	For regulation of the implementation, mainstreaming and adoption of IMO related marine pollution prevention agreements and protocols.
Zanzibar Ports Corporation Act	Protection against maritime pollution and development of ports and la ding infrastructure	For regulation of ports reception services, ports infrastructure and ports masterplan.

Act	Management Tool	Purpose
Zanzibar Shipping Corporation Act No. 3 of 2013	Shipping and ancillary services	For regulation of shipping and ancillary services including cruise ships tourism.
Local Government Authority Act No. 7 of 2014	Integrated Coastal Zone Management and Environmental Services	Coordinating implementation of Integrated Coastal Zone Management, social and Environmental Services for coastal communities
Regional Administration Act No .8 of 2014	Integrated Coastal Zone Management and Environmental Services	Coordinating implementation of Integrated Coastal Zone Management, social and Environmental Services for coastal communities.
Zanzibar Tourism Act No. 6 of 2019	Marine Tourism Hotspots	Coordination in sustainable tourism in marine conservation areas and undersea heritage zones.
Draft Marine Conservation Act	Marine Conservation Areas, Reserves and Critical Habitats	For the protection of flora and fauna inside marine conservation areas and in the maritime domain.
Draft Zanzibar Fisheries and Marine Resources Research Act	Scientific Data for Marine Spatial Planning	Coordination of technical and Scientific studies for Marine Spatial Planning.
Zanzibar Investment Promotion Authority Act No. 14 of 2018	Investment in small islets eco-resort development.	Facilitating environmental protection in the proposed eco-resort development in the small islets.

4.6.7. Marine capture fisheries and aquaculture (Key BE Sector #2)

4.6.7.1. Deep Sea fisheries

The fisheries within the Exclusive Economic Zone (EEZ) of the United Republic of Tanzania (URT) are subject to collective management by a single government entity, representing both Mainland Tanzania and Zanzibar. Section 1.5 of the National Fisheries Policy identifies "underexploited deep sea and EEZ fisheries resources" as one of several opportunities for the future development of the fisheries sector and states as one of 15 broad policy objectives *"Promote investment in the deep sea waters."*

The URT's EEZ is highly productive, but remains unreachable by local fishers. Instead, the majority of fishing in the EEZ is undertaken by foreign flagged vessels under licences from the Deep Sea Fishing Authority (DSFA). These vessels operate through a 'private access agreement' licensing system. The main value species in the EEZ are tropical tuna and tuna-like species that seasonally migrate into URT waters. Overall catches over the EEZ are dominated by three tuna groups – yellowfin tuna, bigeye tuna, and swordfish. Other less common groups were the black marlin and sharks and minor groups were the skipjack and sailfish (Shaghude et al. 2021).

The industrial fishery for tuna and other large pelagic species comprises purse seiners and longliners, licensed by the DSFA. The number of licenses issued varies from year to year and season to season owing to the highly dynamic nature of the fishery and depends on variable migratory patterns. The number of licenses has been declining in recent years with 77 vessels being licensed in 2016, 53 in 2017 and 23 to date in 2018 (all of which are longlines).

Tuna catches in the URT EEZ are not fully reported, however total marine fisheries production has been reported to have remained fairly stable between 43 000 and 55 000 MT between 2000 and 2014. Owing to the lack of suitable port facilities to accommodate industrial fishing vessels within the URT, little fish is landed by the DWFN fleet in the URT (DSFA, 2019). As a result, and despite the high productivity of the area, the contribution of fishing in the EEZ to the GDP remains low, at about 2%. For example, the catch rates for yellowfin and bigeye tuna in the EEZ vary in time and space (Figure 4.8). These factors exert a significant influence on the distribution and behaviour of tuna species, resulting in discernible differences in their catch rates.

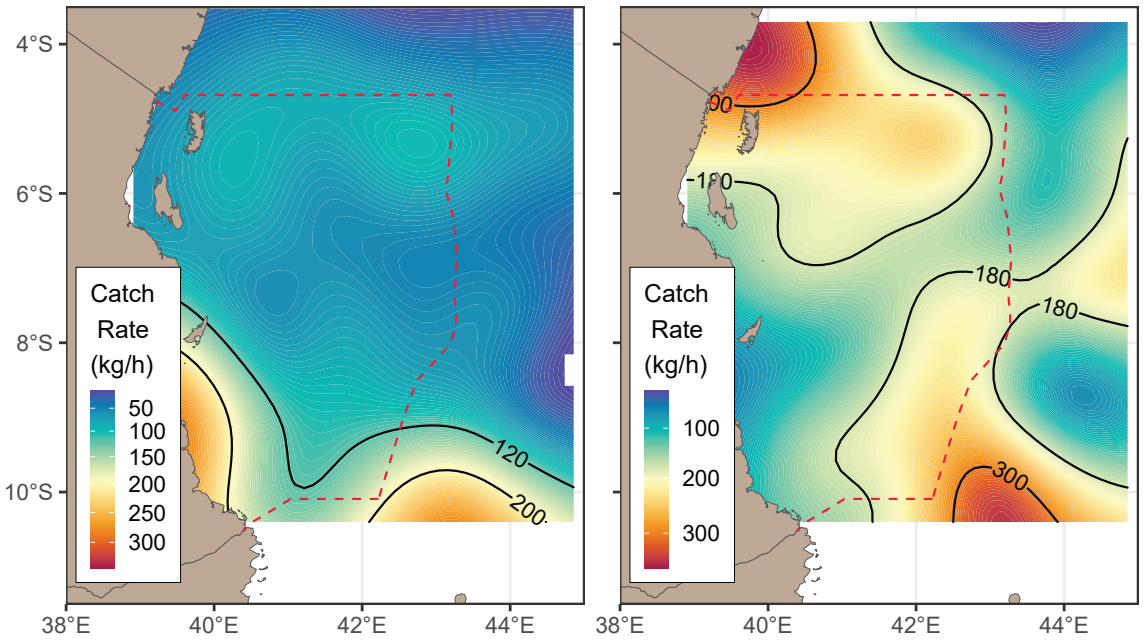
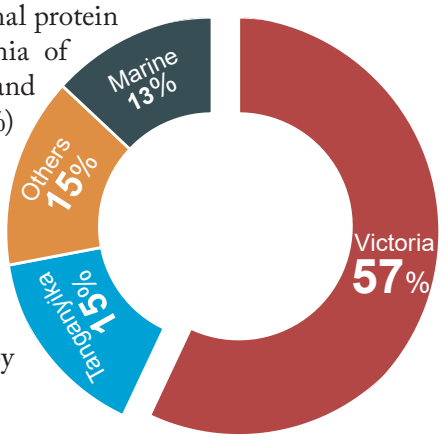


Figure 4.8: Catch rate spatial density of yellowfin (left) and bigeye (right) tuna in the EEZ of Tanzania. Source: Semba et al. (Unpublished).

As a result, yellowfin tuna are mostly caught in areas with warm water temperature and strong wind speed. Bigeye tuna catch rates are found in areas with warm water and weak water current speed while swordfish are caught in areas with warm water and weak wind speed that are associated with low productivity of the ocean (DSFA/IMS, 2021).

4.6.7.2. Coastal marine capture fisheries in Mainland Tanzania

Fisheries are important to Mainland Tanzania's economy, providing income, export revenues and direct employment to more than 200,000 fishers and traders. More broadly, the livelihoods of over 4 million people (about 35% of rural employment) depend on fisheries sector value chains. Fish are also important to nutrition, providing about 30% of animal protein in the diet. Capture fisheries production in Mainland Tanzania of around 470,000 MT/year is mostly from Lake Victoria (57%) and Lake Tanganyika (15%) followed by coastal marine fisheries (13%) (Ministry of Livestock & Fisheries, 2019).



Coastal fishing activity in Mainland Tanzania is concentrated in near-shore waters along the coast and around the islands of Mafia and Songosongo, with some artisanal fishers venturing further into territorial waters during Sept-March to target pelagic species. The principal small pelagic fishing grounds are fished at night by

semi-industrial purse-seine vessels. This activity is concentrated over sheltered, moderately deep waters, mostly along the shores of Tanga region, off Dar es Salaam, in the Songosongo Archipelago and around Mtwara. Medium and large pelagic species are fished within 10 km of the coast by a local fleet mostly using large-mesh gill-nets.

A small number of industrial prawn trawlers are also licensed in near-shore waters, in fishing grounds associated with shallow, brackish and mangrove ecosystems, adjacent to major rivers and estuaries (namely Rufiji delta, Wami, Ruvu, Pangani and Ruvuma estuaries). The prawn fishery is predominately for export, trawling in less than 20m, with catches of the white shrimp comprising almost 66% of landings, the bulk of white originates from the Rufiji Delta area. Notwithstanding the overall growth in catches, recent reports suggest that the marine capture fishery is relatively static or even declining (Jeppesen and Richmond, 2016). Harmful fishing techniques have

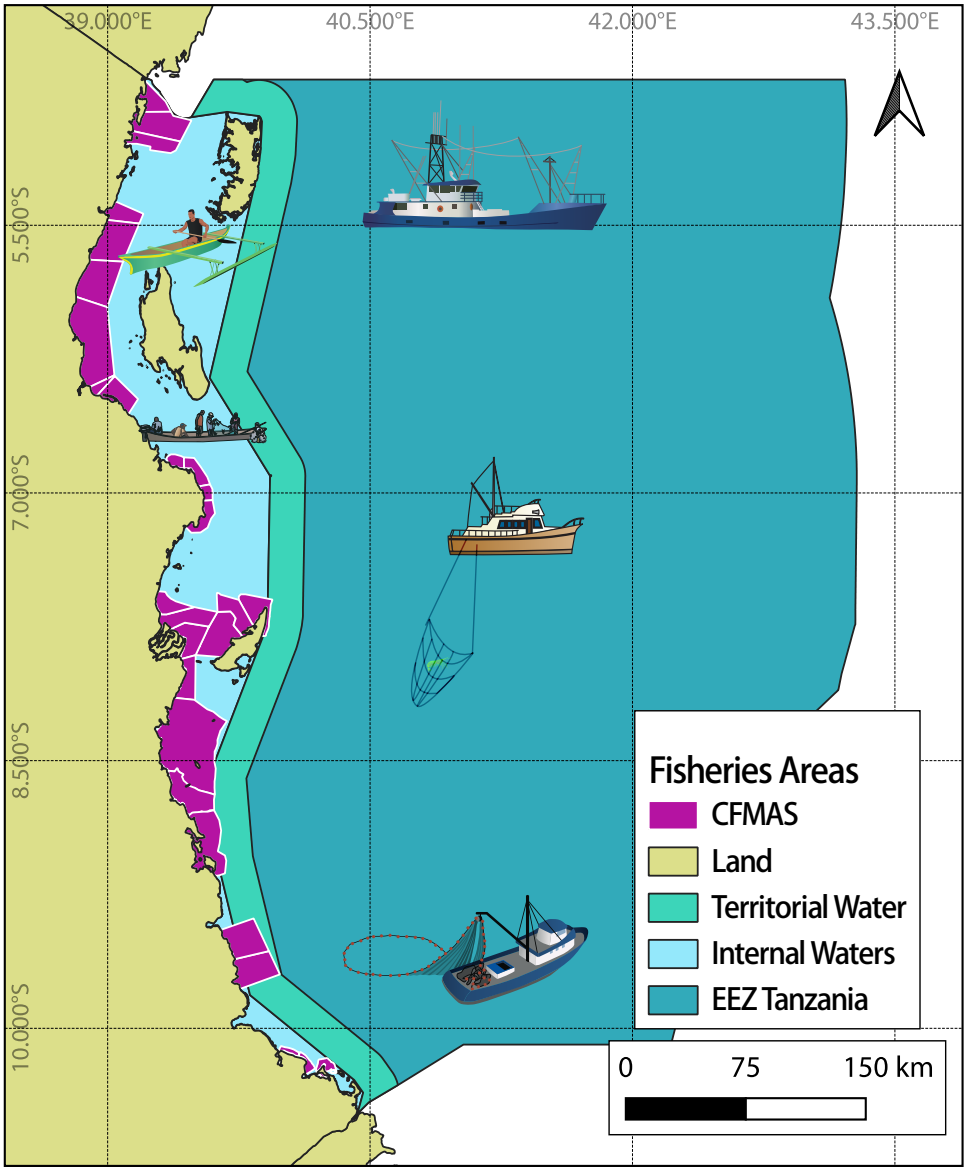


Figure 4.9: Collaborative Fisheries Management Areas in the Mainland Tanzania. Source: Ministry of Livestock & Fisheries

contributed to a general decline in the productivity of the fishery. The institutional infrastructure required to monitor and regulate such activities has also been weakened.

These challenges notwithstanding, reforms have been made to decentralized planning and management to the community level through Beach Management Units (BMUs) and Collaborative Fisheries Management Areas (CFMAs *See* Figure 4.9), which empower local fishers to monitor and become responsible for the resources and habitats they depend on (ASCLME, 2012a). Since 2007, CFMAs have been adopted and operationalised along most of the Mainland coast by the Ministry of Livestock & Fisheries (MLF) and local government authorities in coastal areas. Twenty nine CFMAs have been, or are in process of being, established, covering 13 of 18 coastal Mainland districts and municipalities, while 15 of these 29 CFMAs already have management agreements approved by their respective district councils and the Director of Fisheries. The main gaps are in Mkuranga District and southern Kilwa District (initiatives under way) and in Kinondoni, Ilala, Lindi and Mtwara Municipalities, which have relatively small near-shore areas.

Defining the status of marine fisheries in Mainland Tanzania is hampered by a relative scarcity of reliable data, notwithstanding recent improvements to catch data systems. Nevertheless, indications are that artisanal marine landings already exceed maximum sustainable yields (MSY). Near-shore fisheries are characterised by increasing fishing effort, declining catch-per-unit-effort (CPUE) and unsustainable use of certain fishing nets, though significant efforts have been made to control illegal practices such as blast-fishing.

In EEZ fisheries, there remains a mismatch between reported empirical catch data (5-6,000 MT/yr) and estimates of potential production (100,000 MT/yr) that are driving national fleet development. All in all, there remains an urgent need for management strategies that enhance the sustainable use and natural productivity of Mainland Tanzania's marine fisheries.

4.6.7.3. Coastal marine capture fisheries in Zanzibar - Overview

The marine capture fishery in Zanzibar is largely artisanal and is reserved for citizens only, although foreign investment is permitted to support the establishment of largescale and deep-sea fishing businesses. Fishers generally use traditional fishing vessels and gear such as canoes with outriggers, sailing boats, with few planked outboard-engine boats. In 2020, Zanzibar's fisheries sector contributed 4.9% to the GDP, based on direct fish value generation as well as exports (MoBEF, 2022). A total of 38,107 tons of fish worth approximately TZS 200 billion (US$ 89 million) were harvested in 2020. The artisanal and small-scale fishery sector in Zanzibar is estimated to support around 63,000 individuals directly, while the entire value chain of the fisheries sector employs 78,859 people (equivalent to 8.5% of Zanzibar's total work force) (MoBEF, 2022).

There are two principal focus areas in the finfish fishery of Zanzibar: the inshore demersal fishery and the pelagic fishery (both inshore and offshore). Almost 95% of fishing takes place near the islands within internal and territorial water. The main shallow demersal fishing grounds lie within the 10m contour, calculated at about 6,720km² of which 4,000km² (59.5%) area around Unguja and 2,720km² (40.5%) are around Pemba. The principal small pelagic fishing grounds are fished by large semi-industrial scale purse seine netting vessels, involving light attraction at night. This activity is concentrated over sheltered, moderately deep waters, mostly on the western shores of Pemba and Unguja.

Aquaculture - Overview

Mariculture is a growing sub-sector of the fisheries sector, with finfish (primarily milkfish), seaweed, sea cucumbers, mudcrab, prawns and pearl oysters being farmed at artisanal level in various places all along the Mainland coast. Industrial-scale mariculture is currently limited to

a prawn farm in Mafia Island. In Zanzibar, the cultivation of seaweed, milkfish, sea cucumbers, crabs, and oysters is practiced at artisanal scale and a national marine hatchery has been developed just outside Zanzibar town.

The industry is dominated by small-scale farmers, especially women, producing fish for household consumption and domestic markets. With the support of the Mainland and Zanzibar governments, the industry has developed well in the last 20 years. The private-sector has also been established in the seaweed and prawn industries, while NGO's and international organizations with expertise in mariculture continue to provide support. Many mariculture projects are, however, largely dependent on the knowledge and finance provided by international donor organizations, which has magnified the need for greater private-sector involvement and local capacity building in the sector (IFAD, 2020).

By far the most widespread and high volume product farmed continues to be red algae seaweed for carrageenan production, with *Eucheuma denticulatum* (previously *E. spinosum*) accounting for more than 95% of production, supplemented with smaller volumes of higher value *Kappaphycus alvarezii* (previously *E. cottonii*). Both species are native to south-east Asia and were introduced to Tanzania in the mid 1980s (IFAD, 2020) (Figure 10). With a workforce of mostly women, the seaweed farming industry makes a significant contribution to the local economy and livelihoods, especially in some of the poorer coastal communities in Unguja, Pemba, Tanga, Kilwa and Lindi.

Marine aquaculture production in Tanzania in 2019/2020 included 11,407 MT of seaweed (8,967 MT Zanzibar; 2,440 MT Mainland); 97 MT of prawns (Mainland) and ~0.5 MT of sea cucumber (Zanzibar/Mainland)[Sources: Office of Chief Statistician, Zanzibar; Ministry of Blue Economy & Fisheries; Ministry of Livestock & Fisheries.].

4.6.7.4. Policy & legal framework for marine capture fisheries and aquaculture - EEZ fisheries

Draft National Fisheries Policy for the EEZ, 2022

A new draft National Fisheries Policy for the Exclusive Economic Zone, together with an implementation strategy, was prepared during 2019-20. It underwent strategic environmental assessment in 2019 and the draft Policy currently with the respective ministries responsible for fisheries in Mainland and Zanzibar, and the Cabinet Secretariat, for final approval. Policy objectives include investment in new fishing port facilities in Tanzania to accommodate industrial offshore fishing vessels, with the aim of promoting value addition, processing, marketing and export of EEZ fisheries resources.

Deep Sea Fisheries Management and Development Act No. 5 of 2020

This Act establishes and provides for the constitution and administration of the Deep Sea Fishing Authority (DSFA) as a corporate body which has exclusive authority for the exploration, exploitation, conservation and management of fisheries. The Act applies to Mainland Tanzania as well as Tanzania Zanzibar for fishing activities in the Exclusive Economic Zone and other areas which the United Republic exercises jurisdiction rights or sovereign rights.

The Act is complementary to, and to be read in conjunction with, the Territorial Sea and Exclusive Economic Zone Act (1989) for fishing purposes in the Exclusive Economic Zone and other areas which the United Republic exercises jurisdiction rights or sovereign rights, and shall for all fishing intents and purposes complement that Act.

The Act applies to:

i. all fishing and related activities and any other activity or matter, and all persons, vessels and vehicles falling within the scope of this Act or any applicable international conservation and management measure;

ii. all persons and all vessels in, and in relation to areas beyond national jurisdiction:

a. following hot pursuit initiated in waters under the jurisdiction of the United Republic and conducted in accordance with international law; or

b. as required pursuant to this Act or international conservation and management measures or permitted by international law or any international agreement; and

iii. all Tanzanian fishing vessels and persons on Tanzanian fishing vessels or dealing with or having any relevant relationship to them or persons associated with them, in and in relation to any areas within or beyond national jurisdiction in so far as this is not in conflict with the jurisdiction of another state.

Tuna Fisheries Management Plan (2022)

With support from the World Bank South West Indian Ocean Fisheries Governance and Shared Governance Programme (SWIOFish) the DSFA has adopted the 10-year Tuna Fisheries Management Plan (TFMP).The objective of this TFMP is to help achieve greater community and national economic benefit, while maintaining and/or restoring fish stocks at optimal productive levels as well as preserving related marine biological diversity. This management plan forms an adaptive framework that should be regularly reviewed and updated to incorporate findings from latest research and other sources in a timely manner to inform decision making.

This TFMP focuses on the main tuna and tuna-like species found in United Republic of Tanzania's waters, the main by-catch species associated with these fisheries and other large migratory pelagic species commonly caught in Tanzanian waters. The management plan covers the artisanal fleet (net and line), the semi-industrial fleet (long-line) and the industrial fisheries (variety of commercial gears, long-line, pole and line or purse seine as the most common). The key management bodies responsible for implementation of the plan are the Deep Sea Fishing Authority, the Ministry of Blue Economy and Fisheries (Zanzibar) and the Ministry of Livestock and Fisheries (Mainland).

4.6.7.5. Policy & legal framework for marine capture fisheries and aquaculture – Mainland Tanzania

National Fisheries Policy (2015)

The overall objective of this policy is to develop a robust, competitive and efficient fisheries sector that contributes to food security and nutrition, growth of the national economy and improvement of the well-being of fisheries stakeholders while conserving environment. The policy recognises the significant opportunities that exist for investment in the industry, that can increase the contribution of the fisheries sector to the national economy and households' food security, but also the challenges facing the industry. In this regard, the policy recognises that sustainable fisheries resources require effective resource management and control mechanisms, including spatial management tools, such as marine protected areas.

The Fisheries Sector Master Plan (2021/22 to 2036/37) guides implementation of the National Fisheries Policy, 2015 and provides a strategic framework for the long-term management and sustainable development of the sector. The FSMP outlines operational objectives and strategic

interventions across eight thematic areas for capture fisheries (alongside nine others for aquaculture).

Fisheries Act No. 22 of 2003 and subsidiary regulations, and draft revised Fisheries Act

The Act provides for development and sustainable use of aquatic resources. It also ensures there is protection and conservation of aquatic genetic diversity, ecosystem integrity and endangered species. In addition, the Act advocates for the use of best available scientific information in fisheries development and sound utilization of the ecological capacity of aquatic areas; minimization of pollution; assessment of adverse environmental impacts; and restoration and recovery of depleted stocks.

The Act regulates fishing activities in both fresh and marine and restricts the issuance of fishing licenses in any conserved areas. Furthermore, the Act requires formation of community-based management units for the purpose of protecting and conserving fishery resources. Sound management and sustainable utilization of aquatic resources will ensure resilience of these resources to climate change. The Act also provides for the creation of Beach management Units - groups of devoted stakeholders in a fishing community whose main function is management conservation and protection of fisheries resources in their locality in collaboration with the local government authority. One of the key functions of BMUs is to collaborate with other BMUs and village and district authorities on the joint management of collaborative fisheries management areas, conceived as a spatial tool for the co-management of fisheries resources.

The Act also provides for the development of the aquaculture sector and clearly recognises the potential spatial conflict between aquaculture and other marine activities. A draft revised Fisheries Act has been under preparation by MLF in recent years. The draft revised Act is currently pending a final round of public stakeholder review and final review and approval by the government, its proposed provisions were not available for review under this study.

Subsidiary Regulations currently active under the Fisheries Act include:

i. Fisheries (Amendment) Regulations, 2009
ii. Fisheries (Amendment) Regulations, 2020

Of relevance to MSP, the Fisheries (Amendment) Regulations, 2009 contain provisions for, *inter alia:* (i) spatial restriction of certain fishing activities, including prawn trawling and foreign vessels, in near-shore and territorial waters; (ii) establishment of BMUs to support near-shore fisheries management; (iii) gaining approval for location of seaweed farms and large-scale aquaculture initiatives including cage culture in territorial waters.

Although the Fisheries Act does not explicitly provide for spatial management tools (since these are provided for under the Marine Parks and Reserves Act discussed above) the Act is nonetheless highly relevant to MSP due to the provisions relating to the establishment of BMUs and the highly devolved relationship between fisheries management and local authorities. In addition, the development of mariculture is a highly spatially defined activity which can result in conflicts with other marine users. Thus provisions within the Act for the control and management of aquaculture will be important in the implementation of MSP.

A draft revised Fisheries Act is under preparation by the Ministry of Livestock & Fisheries. At the time of preparation of this study the draft revised Act was pending a final round of public stakeholder review and government approvals. One legislative gaps to be addressed under the new Act is formalisation of collaborative fisheries management areas (CFMAs) as a key tool for spatial management of artisanal fisheries resources.

Fisheries Management Plans (Mainland)

The Ministry of Livestock and Fisheries has prepared a number of fishery-specific general management plans (GMP) as follows:

i. Prawn Fishery Management Plan (2012)
ii. Management Plan for the Tanzanian Artisanal Fishery for Small and Medium Pelagic Fish Species (2013)
iii. Octopus Fishery Management Plan (2012)

Each of these GMPs strategies relating to sustainable management of the fishery resource are identified thereby establishing a management framework for each of the fisheries.

4.6.7.6. Policy & legal framework for marine capture fisheries and aquaculture – Zanzibar

Zanzibar Blue Economy Policy (2022)

The Zanzibar Blue Economy Policy (2022) provides a clear and dedicated policy statement for the management and sustainable utilisation of Zanzibar's marine resources. Priority 1 of the policy places a specific focus on the fisheries sector (both capture fisheries and aquaculture) and identifies seven key areas for strategic intervention:

i. Enhancing sustainable fisheries
ii. Transforming investments and capacity in deep-sea fishing
iii. Value addition and post-harvest loss management
iv. Fisheries and aquaculture resources management
v. Fisheries and aquaculture inputs and equipment
vi. Ecosystem changes due to climate change
vii. Research in fisheries and aquaculture

Zanzibar Fisheries Policy, 2022

During 2022, a new Zanzibar Fisheries Policy was prepared by the MoBEF and is in line with the Zanzibar Development Vision 2050, which aims to transform the Fisheries sector from a subsistence-based to a competitive, commercially oriented production system. It stimulates industrial, technological and scientific development aspiration towards "industrial value addition, including the commercialization of fisheries and aquaculture in line with domestic and export market demand."

The Policy also provides guidance to all actors in the Fisheries sector to increase fisheries incomes, reduce poverty, improve household food and nutrition security, create employment and stimulate overall economic growth, through appropriate investments across the entire commodity value chain from production, through processing to marketing, with the aim of easing constraints faced by the private sector.

Zanzibar Fisheries Act No. 7 of 2010 & draft new Fisheries Act

This Act replaced the previous (1988) Act in order to establish better provisions related to the management and development of fisheries in the internal and territorial waters of Zanzibar. This Act applies to Zanzibar and applies specifically to capture fisheries. The Act provides the basis for the establishment of the Department of Fisheries, which has overall responsibility for the management of fishery resources in Zanzibar. The Act also established the Marine Conserva-

tion Unit (MCU) with responsibility for the coordination towards sustainable management of controlled areas established under the Act. The new Draft Fisheries Act is aimed at transforming the sector by focusing on both sustainable fisheries and aquaculture development, value addition, private sector participation, and attracting more foreign direct investments in the fisheries and aquaculture sectors in Zanzibar.

Fisheries Management Plans (Zanzibar)

The Ministry of Blue Economy and Fisheries has prepared a number of fishery-specific fisheries management plans (FMP) as follows:

i. Octopus Fisheries Management Plan (2019)
ii. Reef Fisheries Management Plan (2019)
iii. Small Pelagic Fisheries Management Plan (2019)

Each of these three FMPs were prepared under the World Bank SWIOFish project. Each plan has the same overarching goal, i.e. to ensure biological, ecological and socio-economic development of the small pelagic fisheries sector as part of an adaptive framework that should be reviewed regularly to incorporate findings from latest research and other sources, and updated in a timely manner to inform decision-making. Key objectives underpinning each FMP have been identified through stakeholder consultation within the respective fisheries.

Proposed new Fisheries Act, 2022

At the time of writing, a draft new Act was under preparation by the MoBEF and that the Act is aimed at transforming the fisheries and aquaculture sector by focusing on both sustainable and structural transformation of fisheries and aquaculture development, value addition, private sector participation, and attracting more foreign direct investments in the fisheries and aquaculture sectors in Zanzibar.

Proposed new Zanzibar Fisheries and Marine Resources Research Institute Act, 2022

At the time of writing, a draft new Act was under preparation by the MoBEF. Key draft provisions of the Act relevant to MSP include the urge to address science-to-policy research on fisheries and marine resources research including the need to enhance national capacity to conserve, study and inventory of marine species and their critical habitats; developing national blue by-products quality and certification systems; establishing a sustained system of aquaculture breeding and production, etc. The Act also provides a window for ZAFIRI to enter into MSP development process through a detailed scientific assessment and data analysis.

4.6.7.7. Institutional arrangements for marine capture fisheries and aquaculture

A number of Government ministries and technical agencies in both Mainland and Zanzibar have mandates touching on the fisheries sector as outlined in Table 4.11 .In Mainland Tanzania, with respect to MSP, the MPRU and the DSFA are particularly relevant as agencies with statutory responsibility for the designation of spatial management tools that can be used to determine the spatial management of certain activities. The Aquaculture Division is relevant from the perspective as stakeholder that may inform those aspects of MSP that are deemed relevant to the development of the mariculture sector in Mainland Tanzania. In terms of the provision and collection of marine spatial (environmental) data, both TAFIRI and the MPRU should be considered as

critical stakeholders with capacity to undertake marine scientific research and monitoring that could inform the development of a future MSP framework.

In Zanzibar, the Ministry of Blue Economy and Fisheries has been mandated to carry out MSP process. Key institutions in terms of collection of marine spatial data include the Department of Blue Economy Development and Coordination, Department of Fisheries and Aquaculture, Department of Marine Conservation, Zanzibar Fisheries and Marine Resources Research Institute and Department of Policy Planning and Research, ZAFICO, Zanzibar Petroleum Regulatory Authority and Zanzibar Petroleum Development Company. Entities outside of the MoBEF include the Department of Environment, Disaster Management Commission, Zanzibar Maritime Authority, Zanzibar Ports Corporation, Zanzibar Shipping Corporation, Tanzania Meteorological Agency (Zanzibar Office); Zanzibar Environmental Management Authority; Zanzibar Tourism Commission, Zanzibar Investment Promotion Authority, Department of Forestry and Natural Resources, Office of the Chief Government's Statistician, Zanzibar Planning Commission, and the Ministry of Energy and Minerals, etc.

Role of local authorities in conservation of marine resources in Mainland Tanzania

Notwithstanding the above, district and municipal authorities are legally mandated to execute key functions related to coastal and marine resources protection under other primary legislation. Most importantly, the Fisheries Act 2003 allows the Director of Fisheries to delegate fisheries licensing, inspection and enforcement functions to LGAs or to specific authorised officers at local authority level. In the context of conservation of marine resources, this delegation of fisheries management functions means that LGAs play a central role in overseeing the establishment and management of CFMAs, which can serve a conservation as well as a sustainable management function, in particular through inclusion of fisheries no-take areas in CFMA management plans (see section 5.3.3 below for more elaboration regarding CFMAs). In another example, the MPRA provides for LGAs to be represented on marine park advisory committees, giving them a formal, though limited, role in the management of marine parks and reserves.

Again notwithstanding the above, an important provision in the respective Local Government Acts of 1982 is the empowerment of district, township/municipal and village councils to make by-laws in their areas of jurisdiction. This is a key instrument in the conservation and protection of local environmental resources, widely employed in practice to advance conservation of local forest, wildlife, fisheries and other marine natural resources. Although near-shore marine resources mostly occur beyond LGA's formal areas of jurisdiction, as defined under their respective gazettement notices,, the Fisheries (Amendment) Regulations (2009) do allow village councils and BMUs jointly to develop by-laws to control illegal fishing and environmental degradation within agreed areas of jurisdiction of a given BMU. Ideally this provision would also extend to LGAs to provide a legal basis for district-level bylaws supporting conservation of fisheries-related marine resources.

Role of local authorities in conservation of marine resources in Zanzibar

Sustainable management of coastal and marine natural resources is included both in the the Regional Administration Act No.7 of 2014 and Local Government Act No.8 of 2014. The role of LGAs is to ensure sustainable utilization of the local natural resources – terrestrial, coastal and marine – including integrated coastal zone management, climate change adaptation, environmental pollution prevention, waste management and biodiversity conservation, as well as safeguarding maritime safety and security (Zanzibar Coast Guard – the KMKM). The President's Office - (Regional Administration, Local Governments and Special Departments) or PO-RALG SD have a critical role to play in the MSP process.

Spatial management tools for marine capture fisheries and aquaculture – Mainland

Spatial management tools are not explicitly addressed in the Fisheries Act (2003). Instead, provisions for the establishment of fishery focussed spatial management tools are contained within the Marine Parks and Reserves Act. An important provision in the Act, however, is the formal recognition of Beach Management Units. To promote local fisheries, the Act gives powers to the Director of Fisheries to enter into management agreements with BMUs. The minimum contents of the agreements are provided under the Act. Although not strictly spatial management tools, pursuant to section 18(10) of the Act, a BMU may be defined in respect of specific area/body of water. Thus, it appears that management activities that are the subject of a management agreement, may be spatially defined.

Spatial management tools for marine capture fisheries and aquaculture – Zanzibar

The relevant spatial management tools in Zanzibar are highlighted in Table 9 and are designed to enable the comprehensive integration of communities in their decision making structures (McLean et al. 2012). Moreover, the Revolutionary Government of Zanzibar has sought to promote the development of MCAs to ensure appropriate use of fisheries resources to preserve the integrity of sensitive coastal ecosystems and conserve marine biodiversity as well as to contribute to management efforts for inshore fisheries. Thus most MCAs in Zanzibar are partially protected areas that are managed with a focus on both fisheries and environmental management

The establishment of these MCAs and their General Management Plans should form the fundamental basis for zoning under any future MSP framework. The fact that existing GMPs and institutional arrangements exist for each of the MCAs will provide a strong basis for expanding the concepts of stakeholder engagement, multi-use planning and zoning more broadly to the whole of Zanzibar's maritime waters.

4.6.8. Ports and shipping (Key BE sector #3)

The URT, like most coastal States, relies heavily on ports and maritime transport to support economic activity. In addition to domestic use, coastal States such as URT provide an important exit and entry point for goods being transported from landlocked countries such as Burundi, Democratic Republic of the Congo, Malawi, Rwanda and Zambia.

Maritime transport is under pressure to cope with current trade levels, requiring coastal States to accommodate a growing number of increasingly large vessels. According to the World Bank, favourable economic growth prospects for the East and Southern Africa region are likely to result in increased trade flows through coastal ports (World Bank, 2018b). This puts significant pressure on Tanzania's port and transport infrastructure. Shipping also represents a significant pressure on the marine environment and other marine users and, as such, requires careful planning and coordination with other activities.

Shipping – Overview

International maritime traffic in the WIO region is relatively light compared with the most heavily trafficked regions of the world. Different vessel types follow dedicated routes and these are largely offshore from the coast. The major routes that are relevant to the URT transit from south Asia and the Persian Gulf, south/south-west around the Cape of Good Hope.

There are important coastal routes, mainly between the ports of Mombasa and Dar es Salaam that pass both inside (through the Pemba Channel) and outside the islands of Zanzibar.

The URT does not appear to hold comprehensive data with which to map the precise movement of shipping that transit through the territorial sea and internal waters. Such data will be critical to understand the spatial extent and possible conflicts of shipping with other key sectors.

Ports - Overview

Mainland Tanzania

Tanzania mainland has three major seaports, namely: a large international port of Dar es Salaam, and the two medium-sized coastal ports of Tanga and Mtwara. In 2020 a total of 1,457 port calls were made by ships to ports of Dar es Salaam, Tanga and Mtwara.

Dar es Salaam port is by far the largest, handling the main majority of the country's international maritime trade and serving all major economic centres in the country as well as the transit countries. All major existing infrastructure corridors in Tanzania lead to Dar es Salaam, and it is the only place where both railway systems (TAZARA and TRC) join. The port currently handles over 13 million tons of cargo per year, equivalent to more than 90% of the total country's import and export volumes. In addition to domestic use, coastal States such as URT provide an important exit and entry point for goods being transported from landlocked countries such as Burundi, Democratic Republic of the Congo, Malawi, Rwanda and Zambia.

Mtwara port handles 0.2 million tons a year. It is an important port for the offshore oil and gas sector, as well as being well position to take advantage of growing trade activities in Mtwara, as a result of the new industry (AfDB, 2014).

The port of Dar Es Salam has shown a strong growth over the past years, especially in the container sector, but due to the resulting congestion in the port area, plans have been developed for a redevelopment and upgrading of the existing port facilities (Tanzania Ports Authority [TPA], 2022). As a result the TPA is implementing the Dar es Salaam Maritime Gateway Project (DMGP), aimed at increasing the capacity of the port of Dar es Salaam based on the currently experienced congestion in the port. The project involves among other things, dredging of the entrance channel and harbour basin; deepening of a number of the existing berths; land reclamation and construction of a new berths and hardstand areas; and, relocating the existing oil jetty.

In addition, the East Africa Crude Oil Pipeline (EACOP) project is currently constructing an oil pipeline to transport crude oil from Uganda's Lake Albert oilfields to the port of Tanga. This will necessitate the construction of a new marine oil terminal and jetty at Chongoleani in Tanga bay. Oil will be exported via a 2 km long jetty to a tanker mooring facility.

Zanzibar

The islands of Zanzibar are served by three commercial ports: the Malindi Port on Unguja Island, and the Mkoani and Wete Ports on Pemba Island, plus a minor port located in Mkokotoni (Unguja) (Figure 14). Given the island's strategic location, the port at Malindi is one of the principal ports in East Africa and handles around 90% of Zanzibar's trade. The port also services passenger ferries commuting between Dar es Salaam, Pemba and at times, Tanga, handling over 10,000 ferry passengers daily, including a large proportion of the tourism visits. From the ports to the consumers, road transportation infrastructure is responsible for delivery and movement on land. Harbours are thus integrally dependent on roads to move goods and people.

As the largest port in Zanzibar, the existing Malindi multi-purpose port currently handles around 95% of Zanzibar's cargo throughput. In terms of volume, the majority of the goods processed through the port are imports (approximately 90%). However, export cargo has experienced steady growth over the last several years which is expected to continue. With approximately 3

million passengers per year (MoBEF, 2022), Malindi also has one of the busiest passenger terminals in the East African region. The port also supports an increasing number of international cruise ships. The port at Pemba is significantly smaller, handling less than 100,000 tons of general cargo per year.

Current traffic volumes at the Port of Malindi in terms of cargo and passengers are fairly significant considering the population it serves. The port handles a range of cargos including liquid fuels, general and bulk cargos and containers. As a result, the port is severely congested, and cannot meet the growing trading target, which hinders the development of the Zanzibar economy. Due to congestion, ships must currently anchor at sea and wait for sometimes 5-6 days to offload cargo, leading to a loss of productivity and raising freight costs (Zanzibar Planning Commission, 2020).

As a result of the congestion, the Government of Zanzibar has determined that development of a new port is necessary in order to accommodate future growth of cargo and passenger traffic. Current plans envision construction of a new multipurpose port on Unguja Island constructed in a phased approach. The government's vision also includes potential construction of a separate port to service oil and gas exploration activities in Zanzibar, as well as upgrading and/or construction of new port facilities on Pemba Island, and re-development of the current port/harbour area to service ferries, cruise liners and other passenger traffic.

In 2022, a Masterplan for Mangapwani Multipurpose Port and Related Facilities was launched. In addition to the existing studies cited from previous major reports on ports development, the Revised and Updated Master-plan contains information on topographic and bathymetric surveys, shipping traffic forecasts, structural and vessels design, terminal facilities and infrastructure, port equipment feasibility, and geological and geotechnical assessment.

Marine dredging - Overview

Capital and maintenance dredging is a core activity for ports, to ensure safety of navigation and that operational depths are maintained for access. Dredging is undertaken under a permit issued by the National Environment Management Council (NEMC) in Mainland and the Zanzibar Environment Management Authority (ZEMA) in Zanzibar respectively. There are no designated offshore spoil-dumping sites in either Mainland or Zanzibar marine waters. Rather sites are identified and permitted on a case-by-case basis through ESIA and ESMP approval processes.

Given the port-related development projects variously proposed in Tanga (EACOP crude oil load-out facility), Bagamoyo (proposed fishing port), Dar es Salaam (proposed port expansion), Kilwa (proposed fishing port), Lindi (proposed LNG plant and export terminal) and Zanzibar (proposed relocation of port to Mwangapwani), it can be anticipated that large scale capital dredging programmes will be undertaken in the coming years. As such, it will be important to define a specific offshore area whereby material derived from port dredging can be disposed of and contained within.

- **Policy & legal framework for ports & shipping - Mainland Tanzania**

A number of policy and legal instruments support the ports and shipping sectors in Mainland Tanzania.

National Transport Policy (2003)

The Mainland Tanzania lacks an inclusive and principal maritime transport policy framework within which to manage its extensive maritime area and the associated resources and activities it supports. Maritime transport is given very brief attention in the National Transport Policy

(2003), which recognises "the need for further restructuring of ports for increased infrastructure, safety, and Security and operations efficiency."

The Tanzania Shipping Agencies Act No. 14 of 2017

The purpose of this Act is to provide for the establishment of a national maritime administration to regulate ports, shipping services, maritime environment, safety and security and related matters. The Act applies to matters of maritime administration, maritime environment, safety and security and maritime transport services at sea ports and inland waterways ports in Mainland Tanzania. The Act establishes the statutory body known as the Tanzania Shipping Agencies Corporation (TASAC). In effect, this Act creates the statutory authority for a National Maritime Administration. Pursuant to section 30 of the Act, a Director General of the TASAC shall be appointed by the President of the URT.

Merchant Shipping Act No. 21 of 2003

This Act primarily relates to the establishment of a national registry of ships and training standards for and welfare of seafarers. Part IV of the Act deals with the procedures for ship registration. The Act applies to all Tanzanian ships and foreign flagged ships operating within, *inter alia*, the territorial sea under the jurisdiction of the URT. Broadly speaking, the Act gives effect to a range of international agreements established by the International Maritime Organization (IMO), to which URT is a State Party.

Though not specifically dealing with the spatial management of maritime transport, from the perspective of MSP, Parts VIII and IX are the most relevant since they deal with the safety of navigation/collision prevention and safety of life at sea respectively. Spatial management tools for the regulation of shipping are generally adopted internationally by the IMO. The Act provides the domestic legal basis for the implementation of ships routeing measures and the designation of 'prohibited zones'. As a legal instrument for the establishment of spatial management tools for shipping, the Act is considered to be highly relevant for MSP.

Tanzania Ports Authority Act No. 17 of 2004

This Act establishes the Tanzania Ports Authority (TPA) and applies to all ports throughout Mainland Tanzania and Zanzibar. Given the fact that regulation of ports within port limits is a statutory function of the TPA, this Act is highly relevant to MSP since any conflicts arising within port limits must be addressed, at least in part, under this Act. The ability of the Minister to regulate activities within the port is also highly relevant for MSP.

- **Policy & legal framework for ports & shipping - Zanzibar**

Zanzibar has no dedicated maritime policy. Instead, maritime transport has been seen as part of the broader transport system and is addressed in the Zanzibar Transport Policy (2008). More recently, the issue of maritime transport and ports (in particular) has been included in the Zanzibar Blue Economy Policy (2020).

Zanzibar Blue Economy Policy (2022)

The recently released Zanzibar Blue Economy Policy (2022) now addresses maritime trade and infrastructure as one of the five key thematic areas. The Blue Economy Strategy specifies issues pertaining to enhancement of maritime trade, services, and infrastructure, including maritime safety and security while reducing negative impacts on social, economic and ecological processes necessary for human equity, diversity, and integrity of natural resources. Priorities are on enhancement of operational performance, shipping index, operational capacity, strategic investments and incentivization of ocean-based industrial sectors. These priorities run in conjunction with other

policy priorities related to sustainable fisheries, aquaculture, climate change adaptation, conservation of marine biodiversity and the need to carry out marine spatial planning process.

Zanzibar Maritime Authority Act No. 3 of 2009

This Act provides the legal basis for the establishment of the Zanzibar Maritime Authority (ZMA), the legally and internationally recognised maritime authority for Zanzibar. The Authority is responsible for: *(i) vessels registered and licensed in Zanzibar; (ii) ferry boats including pontoons; (iii) safety of fishing vessels; (iv) ships calling at any ports in Zanzibar; (v) ships transiting within Zanzibar; (vi) pleasure craft; (vii) offshore exploration rigs, production platforms and associated structures and crafts; and (viii) native vessels and small crafts.*

The Authority has the responsibility for the designation and regulation of sea lanes within Zanzibar, for proposing particularly sensitive sea areas (PSSA) within Zanzibar, and to promote and ensure the safe use of ports and approaches thereto. These provisions provide the Authority with the statutory authority to designate some useful spatial management tools that could be useful in any future MSP framework.

Maritime Transport Act No. 5 of 2006

This Act provides for the registration of ships, safety and security of shipping and the protection of marine environment and matters related thereto. Pursuant to section 3(1) the Act applies to:

a. Tanzania Zanzibar Registered ships wherever they may be;
b. All other ships while in any port in Zanzibar or a place within Zanzibar.

Where the term 'ship' includes every description of vessel used in navigation.

The Act consists of 26 parts together with one schedule. The overarching purpose of the Act is to give effect to the various international legal instruments that have been adopted by the IMO, and that have been ratified by the URT. Therefore the Act addresses aspects such as: registration of ships; safety of life at sea; safety of navigation and collision prevention; protection of the marine environment; seafarer welfare; carriage of harmful and hazardous substances, and port and maritime security.

As noted above, the Act is administered by the Zanzibar Maritime Authority. Given that the Act provides opportunities for the adoption of spatial management tools, to ensure the safety of navigation, this Act has potential relevance for future MSP activities.

Zanzibar Ports Corporation Act No. 1 of 1997

This Act provides the statutory basis for the establishment of the Zanzibar Ports Corporation (ZPC), a Body Corporate with overall responsibility for managing, operating and developing Zanzibar's port facilities. It is in charge of five major ports in Unguja and Pemba Islands and all other major recognized landings.

The functions, powers and duties of the ZPC largely relate to the commercial development and operation of ports, which is relevant for MSP especially on the implementation of the Zanzibar Ports Masterplan. The ZPC also has authority for the designation of 'harbours' and the regulation of navigation safety within those designated harbours.

Given the critical importance of ports to maintaining trade flows, ensuring that conflicts do not arise that impact on the safe navigation routes in and out of the ports is essential for Zanzibar's future development. As such, those provisions relating to the management of harbours are highly relevant for MSP.

- **Institutional arrangements for ports & shipping**

Primary responsibility for the regulation of shipping rests with the Tanzania Shipping Agencies Corporation (TASAC) and the Zanzibar Maritime Authority (ZMA) respectively. The primary role of both agencies is the regulation of maritime administration, maritime environment, safety and security (Table 4.11). Both TASAC and ZMA are responsible for navigational safety within the port limits in Mainland Tanzania and Zanzibar respectively. The operational aspects of shipping in the port limits (such as regulation of anchoring, regulating ships movements, pilotage etc.) are all undertaken by the relevant port authorities.

Table 4.11: Agencies involved in the regulation of the maritime sector and roles relevant to MSP

MINISTRY	INSTITUTION	ROLES AND RESPONSIBILITIES
Ministry of Works and Transport	Tanzania Shipping Agencies Corporation	• Administer the Merchant Shipping Act (2003). • Exercise port state control of all foreign ships and flag state control of ships registered in Mainland Tanzania. • Regulate and approve marine services safety equipment's and marine services providers. • Regulate ferries. • Coordinate maritime search and rescue operations. • Regulate and coordinate the protection and preservation of marine environment.
	Tanzania Ports Authority	• To establish and coordinate system of harbours. • To provide facilities relating to harbours and provide harbour services. • With the approval of the Minister, to construct and operate new harbours. • To construct, operate and maintain beacons and other aids to navigation.
Ministry of Infrastructure, Communications and Transportation	Zanzibar Maritime Authority	• Administer the Maritime Transport Act (2006). • Exercise port state control of all foreign ships and flag state control of ships registered in Zanzibar. • Regulate and approve marine services safety equipment's and marine services providers. • Regulate ferries. • Coordinate maritime search and rescue operations. • Regulate and coordinate the protection and preservation of marine environment.

MINISTRY	INSTITUTION	ROLES AND RESPONSIBILITIES
	Zanzibar Ports Corporation	• To establish and coordinate system of harbours. • To provide facilities relating to harbours and provide harbour services. • With the approval of the Minister, to construct and operate new harbours. • To construct, operate and maintain beacons and other aids to navigation.

- **Spatial management tools for ports & shipping**

Table 4.12 provides a list of the main spatial management tools that are available under international law for the control and regulation of shipping.

Table 4.12: Spatial management tools available for the regulation of shipping

SPATIAL MANAGEMENT TOOL	DESIGNATION TYPE
Anchoring Areas	• Domestic – Gazette Order
Prohibited Zones	• Domestic – Gazette Order
Particularly Sensitive Sea Areas	• IMO
Vessel Routeing Measures (See Annex D)	• MO under the SOLAS Convention
Safety Zones Around Vessels and Terminals	• Domestic – Temporary through Notice to Mariners Permanent through Gazette Order
No-Anchoring Grounds or Areas	• IMO under the SOLAS Convention
Security Zones in Ports and Waterways	• IMO – ISPS Code

4.6.9. Offshore petroleum exploration and production (Key BE Section #4)

Overview

The most recent US Geological Survey assessment of geologic provinces in the East Africa region, including the URT (Tanzania Mesozoic-Cenozoic Composite Petroleum System) estimates that the Tanzania Coastal province contains mean undiscovered, technically recoverable conventional resources as follows: 2,806 million barrels of oil, 67 trillion cubic feet (tcf) of gas, and 2,212 million barrels of natural gas liquids (Brownfield et al. 2012). More recent official estimates suggest the figure for gas is closer to 57 tcf (Henstridge, 2022) although the estimates of actually 'recoverable' gas reported by international oil companies exploring in the URT's offshore waters are lower still, perhaps 36-40 tcf, with much of this located in deep offshore waters. Whatever the correct estimate, the URT is considered to have strong hydrocarbon potential and numerous companies are currently exploring for oil (Henstridge, 2022) (see Figure 16).

The first discovery of natural gas in Mainland Tanzania was made in 1974 in the shallow coastal waters of Songo Songo island, Kilwa district. Eight years later, in 1982, the second discovery took place in Mnazi Bay area in Mtwara region. These are considered to be small reserves: Songo Songo has technically recoverable gas estimated at 0.7 tcf while Mnazi Bay holds just 0.3 tcf (Henstridge, 2022). Current natural gas production at Songo Songo reaching 70 mcf in 2008, and production at Mnazi Bay reaching 1 mcf in 2008.

Currently, the natural gas extracted is for domestic use rather than export. Since 2004, the gas from the Songo Songo gas field has been piped 232 km to generate electricity in Dar es Salaam, at the Ubungo Power Station. By 2007, the gas from the Mnazi Bay gas field was used to produce electricity in Mtwara and in Lindi by 2009. A 500 km gas pipeline has also been constructed to supply surplus gas from Mnazi Bay (and expected new discoveries) to Dar es Salaam. The use of onshore and shallow water gas in power generation has supported a significant addition to Tanzania's generating capacity, with scope for further increases in line with the ambition for more investment in gas-fired power generation.

Significant gas discoveries have also been made in deep offshore waters. These reserves are located 80–100 kilometres offshore, in water depths of up to 2,000 m and a further 4,000 m below the seabed. Estimates place the size of these reserves at 29–37 tcf, assessed as being sufficient to justify investment in the construction of a Liquefied Natural Gas (LNG) plant at Lindi.

The Government of Zanzibar has also recognised the need to support the use of oil and gas resources to meet local energy demand, with any surplus to be exported in the region and overseas. The exploration and production of oil and gas is also an area of focus within the scope of Zanzibar's blue economy and is a priority area under the recently revised Zanzibar Blue Economy Policy (MoBEF, 2022).

Figure 16: Location of onshore and offshore petroleum blocks and well sites. Source: Petroleum Upstream Regulatory Authority (PURA) (2022).

- **Policy & legal framework for offshore petroleum exploration & production - URT**

Offshore oil and gas exploration and production in the URT is governed by various energy sector policies and legislation, as outlined below.

National Energy Policy (2015)

The Government has not adopted a separate policy framework for the oil and gas sector. Instead, policy direction for this sector is contained within section 3.2 of the National Energy Policy. In this regard, the policy identifies the following policy objectives with respect to upstream oil and gas operations:

i. Optimizing and effectively managing petroleum resource base; and
ii. Ensuring timely announcement and optimal development of petroleum commercial discoveries.

The overarching policy framework relating to offshore energy is the National Energy Policy (2015), prepared by the Ministry of Energy and Minerals. The policy aims at sustainably providing adequate, reliable and affordable energy to the Tanzanians. The policy was formulated to, among other things, unlock the bottlenecks in the energy sector and to increase the share of renewable energies in electricity generation. The policy recognises both offshore petroleum and renewable energy as critical components of the URT's overall energy portfolio.

The petroleum sub-sector in Tanzania is governed by the following key instruments, which lay the foundations for strong governance of the sector: (i) The Petroleum Act (2015); (ii) Zanzibar Oil and Gas (Upstream) Act No. 6 of 2016; (iii) The Oil and Gas Revenues Management Act (2015); (iv) and The Tanzania Extractive Industries (Transparency and Accountability) Act (2014). Of these, the Petroleum Act (2015) and the Zanzibar Oil and Gas (Upstream) Act No. 6 of 2016 are the most relevant to the regulation of maritime space and MSP.

Petroleum Act No. 21 of 2015

The Petroleum Act's stated aim is "to provide for regulation of upstream, midstream and downstream Petroleum Activities, establishment of the Petroleum Upstream Regulatory Authority, to provide for the National Oil Company, to secure the accountability of petroleum entities and to provide for other related matters." It is thus quite a broad-ranging act, and constitutes the bulk of the legal architecture for how the upstream petroleum sector will function.

Oil and gas resources is vested in the public and exclusively managed by the government in trust for the people of Mainland Tanzania and Zanzibar. Private ownership of oil and gas rights is not allowed, although private individuals may be granted rights for exploration or development. As such, the government plays a significant role in the oil and gas industry in URT. The Act includes several provisions designed to protect worker safety and the environment. In doing so, it supports other pieces of legislation such as the Environmental Management Act (2003) and the Occupational Health and Safety Act (2003).

Zanzibar Oil and Gas (Upstream) Act No. 6 of 2016

The primary purpose of the Act is to provide for the establishment of two key institutions, namely the Zanzibar Petroleum (Upstream) Regulatory Authority (ZPRA) and the Zanzibar Petroleum Development Company (ZPDC). These key institutions provide the regulatory authority and the operational capability to develop the offshore oil and gas sector respectively. As such, Part III of the Act exclusively deals with the establishment and operation of these two entities.

The Act provides for the issuance of different types of permit or licence, including reconnaissance permits exploration licences, development licenses and production permits on the basis of fulfilment of various technical, commercial, health, safety and environment requirements including Strategic Environmental Assessment and Environmental and Social Impact Assessment.

- **Policy & legal framework for offshore petroleum exploration & production - Zanzibar**

Zanzibar Development Vision (2050)

The Zanzibar Development Vision (2050) is the overall framework guiding all development plans and policies for eradicating poverty. Pillar III of the Vision (Infrastructural Linkages) is particularly relevant since it deals with energy (as well as telecommunications networks). The Vision addresses both energy security and the development of the oil and gas sector's policy on sustainable provision of energy is to ensure adequate, environmentally sound, alternative and sustained energy supplies for easing socio-economic development.

In this regard, section 3.5 of the Vision lists among the development aspirations:

i. Sustainable and diversified energy sources through the exploration and adoption of domestically generated energy, including potential renewable energy and non-renewable energy sources; and

ii. A reliable power system backed by improvements to the current submarine cable network.

Zanzibar Energy Policy (2009)

Overall energy policy is governed by the Zanzibar Energy Policy (2009). Section 7.0 of the policy identifies "Exploring and increasing the use of indigenous sources for energy supply" as one of the key focus areas of the policy. In the specific context of MSP, two key policy issues highlighted under section 7.0 are particularly relevant:

i. Exploration of potential fossil fuel reserves, whereby Zanzibar shall actively promote and support exploration, up-stream production and supply of gas and petroleum products; and

ii. Indigenous renewable sources of energy, whereby Zanzibar recognises the potential for solar and wind power based electricity generation and will investigate suitable locations, and develop clear directions for exploration, public-private joint ventures, possibilities for connection to the grid.

Zanzibar Oil and Gas (Upstream) Policy (2016)

The Zanzibar Energy Policy has been complemented by the Zanzibar Oil and Gas (Upstream) Policy (2016) in addressing specific complexities of the oil and gas industry. The principal objective of the policy is *"to manage the upstream oil and gas subsector for sustainable development through broad participation and maximum value benefits with minimum negative impact on environment, safety and health."* The policy focuses on good management of oil and gas resources from exploration, through development to the decommissioning. The policy places an emphasis on good governance, creating lasting benefits to Zanzibaris, conserving environment with attention on safety and health.

Section 2.16 of the policy recognises the need for integrated planning of the oil and gas sector with other sectors, and in particular, recognises the potential conflict that may occur with the fisheries sector. In this regard the policy explicitly recognises the importance of MSP as a tool for the allocation of space and resolution of conflict over the use of the marine zones, including the allocation of deep sea fishing licenses for international fisheries vessels.

- **Institutional arrangements for offshore petroleum exploration & production**

Both Mainland Tanzania and Zanzibar have established a regulatory regime consisting of an upstream regulator and a national oil company as summarised in Table 12 below.

- **Spatial management tools**

In addition to the delineation of licence blocks which are, by definition, spatial in nature, a number of spatial management tools are available to aid with the safe operation of the offshore petroleum sector (Table 4.13).

Table 4.13: Spatial management tools available to the upstream oil and gas sector

SPATIAL MANAGEMENT TOOL
• Oil & Gas Lease or Concession Areas
• Areas Withdrawn from Leasing
• Safety Zones Around Offshore Installations
• Pipeline Rights-of-Way or Protection Corridors

4.6.10. Subsea cables (Key BE Sector #5)

Subsea power transmission and telecommunication cables are considered as critical infrastructure for the URT. As such, they are an essential element to be included under any future MSP initiative.

Telecommunication cables – Overview

The past few years has seen a proliferation of submarine telecommunications cables servicing the WIO region and growing demand for internet services is spurring large-scale construction

of both surface and under-sea cables in Africa as technology companies pump in more investments funds to replace old lines and put up new ones. Submarine cables are landed onshore while the cable itself is laid on the seafloor. The cable traversing the intertidal zone is generally buried before connecting to land-based telecommunications networks. There are potential environmental concerns relating to the deployment of the cable, as well as the presence of the cable within the ecosystem it traverses.

A number of such cables traverse the URT's EEZ and make landfall in Dar es Salaam (Figure 17). There are also a number of cables running between Mainland Tanzania and Zanzibar. There is, therefore, a need to take these into account when considering multi-use marine planning. The URT is constructing the National Fibre Optic Cable network named as National ICT Broadband Backbone (NICTBB) with a view to achieve its ICT vision. This is managed and operated by the Tanzania Telecommunications Corporation (TTCL Corporation) on behalf of the government, through the Ministry of Information, Communication and Information Technology (MICIT).

Figure 17: Submarine cables and pipelines landing in Mainland Tanzania (Dar es Salaam) [Source: https://www.submarinecablemap.com/]

- **Policy & legal framework for subsea communication cables - URT**

National Information and Communications Technology Policy (2016)

This policy formulated within the context of national vision statements guided by the Tanzania Development Vision 2025, which recognizes that ICT is central to a competitive social and economic transformation. The overall objective of the policy is to accelerate socio-economic development with potentials to transform Tanzania into ICT driven middle-income economy and society. Policy Objective 3.2.2.1 addresses the issue of infrastructure development and recognises the importance of continuing to develop and support the existing ICT infrastructure including:

i. Develop the infrastructure beyond the current reach of more than 7,560 km of fibre; and
ii. Participation of private sector in metro fibre investment through operators' consortium and roll out of telecommunication infrastructure countrywide.

According to the Policy Statement, the Government shall *inter alia*:-

i. Ensure conducive environment for collaboration of public and private sector in exploring various means of financing ICT infrastructure;
ii. Ensure safe and reliable ICT infrastructure developed countrywide; and
iii. Ensure availability of supportive framework to guide deployment of ICT infrastructure including right of way and sharing of such infrastructure.

The Electronic and Postal Communications Act No. 3 of 2010

The purpose of this Act is to make provisions for the enactment of electronic and postal communications law with a view to keeping abreast with developments in the electronic communications industry. The Act establishes a comprehensive regulatory regime for electronic communications service providers. The Act applies to Mainland Tanzania and Zanzibar. The Act provides for the continuation of the Converged Licensing Framework (CLF), as a key strategy to implement liberalisation. The CLF provides for a number of different types of licences including a Network Facility License which provides authorisation for ownership and control of any element, or combination of elements, of physical infrastructure used principally for, or in connection with, the provision of one or more network services. This includes, *inter alia*, submarine cable landing centres. The Act is, however, silent on the regulation of subsea cables generally.

Institutional arrangements for subsea communication cables

The Tanzania Communications Regulatory Authority (TCRA) is the primary agency with responsibility for the regulation of Postal, Broadcasting and Electronic Communications sectors. Operators are responsible for building and maintaining info-communication infrastructure.

Spatial management tools for subsea communication cables

No spatial management tools have been identified with respect to the protection of subsea telecommunication cables.

- **Power cables - Overview**

The key issue with respect to subsea power cables is the provision of electrical power to the islands of Unguja and Pemba since, although historically both Unguja and Pemba had on-island power generation infrastructure, today Zanzibar does not generate any native energy. Instead, both islands are connected via submarine cable connections to the national power grid with electricity transmitted and supplied by a sole utility agent - Zanzibar Electricity Corporation (ZECO). The main power cable for Unguja consists of a 132 kV, 37 km length cable laid across between Ras Kiromoni (Mainland) and Fumba on Unguja. The cable is laid in a maximum water depth of 60 m. As such, Unguja is fully dependent on the supply of electricity from Mainland Tanzania.

As Zanzibar's economy develops, the demand for electricity is expected to grow. Though energy security is currently satisfactory with a total electricity surplus of 20 MW in 2020, there are concerns that power supply may soon become unpredictable and struggle to keep up with rising energy demands.

Policy & legal framework for subsea power cables - URT

The National Energy Policy (2015)

The main objective of this policy is to provide guidance for sustainable development and utilization of energy resources to ensure optimal benefits to Tanzanians and contribute towards transformation of the national economy. The policy address *inter alia*, electricity generation, transmission, distribution, interconnection, power trading and rural electrification.

The Electricity Act No. 2 of 2008

The purpose of this Act to provide for the facilitation and regulation of generation, transmission, transformation, distribution, supply and use of electric energy, to provide for cross-border trade in electricity and the planning and regulation of rural electrification. Under the Act, operators wishing to undertake power transmission and distribution activities must be licensed by the Energy and Water Utilities Regulatory Authority. While the Act does provide access rights to licensees across land (for the purpose of operating, repairing or maintaining its facilities) and also for the establishment of a wayleave to a Licensee around energy facilities, the Act is silent on the matter of subsea cables. Broadly speaking the definition of land includes the seabed so it may be interpreted that these provisions apply to subsea cables. However, this would require clarification.

Institutional arrangements for subsea power cables

The Tanzania Electric Supply Company (TANESCO) and Zanzibar Electricity Corporation (ZECO) are responsible for electricity generation, transmission and distribution in mainland Tanzania and Zanzibar respectively.

Spatial management tools for subsea power cables

No spatial management tools have been identified with respect to the protection of subsea power cables.

4.6.11. Tourism and leisure (Key BE Sector #6)

Overview

Tourism is currently one of the leading economic sectors in the URT. The World Economic Forum's Travel and Tourism Competitiveness Index ranks the URT as 1st in Africa and 12th worldwide for the quality of its nature-based tourism resources, and 32nd in Africa and 112th in the world for its cultural resources. However, only a small fraction of Tanzania's natural and cultural endowments has been put to economic use through tourism development (World Bank, 2021). Tourism has been the URT's largest foreign exchange earner since 2012, and in 2019 it accounted for over one-quarter of the country's foreign-exchange earnings. Moreover, as the tourism value chain is linked to numerous other economic sectors, it plays an outsize role in growth, employment, and poverty reduction.

For the Mainland economy, the tourism sector contributes an estimated 17% of its GDP and directly employs over 850,000 workers, making it the country's second-largest component of GDP and third-largest source of employment. In Zanzibar tourism is now the most significant local employer, supporting 35,000 direct and about 70,000 indirect jobs, out of the islands' total population of around 1.4 million people (MoBEF, 2022) and contributing an estimated 28% to the islands' GDP and 82% of its foreign exchange earnings.

Since the URT's tourism industry is largely focussed on the well-established land-based tourist regions it is difficult to disaggregate the contribution of the Mainland coastal tourism sector from overall industry figures, where direct expenditures from international visitors account for 5.8% of the economy, (NDF, 2016). This notwithstanding, four interest groups can be identified with respect to coastal and marine tourism:

i. Wildlife tourism (focused on Saadani National Park, Jozani Forest Reserve and other conservation areas);
ii. Marine-based tourism (focused on marine reserves and parks, for diving, snorkelling, deep sea fishing, etc.);
iii. Cultural tourism (historical, heritage and cultural sites); and
iv. Beach tourism (beaches, hotels, restaurants, shops, handicrafts, etc.).

There is considerable overlap within these interest groups, but the bulk of present interest is the coastal beach experience, with numerous beach hotels scattered along the entire coastline.

Policy & legal framework for tourism - Mainland Tanzania

The energy sector (including petroleum exploration and production) in the URT is governed by a number of policies.

National Tourism Policy of Tanzania (1999)

The goal of the policy is to *"maintain the tourist resource base in an adequate manner as it forms part of the public resources, improves the existing infrastructure and to develop it further so as to accrue higher revenues from the sector"*. The policy is structured around four key thematic areas, economic, social, environmental and cultural, under which the policy defines a number of specific objectives.

As one of the constraints, the tourism policy notes that local communities were being minimally involved in decision-making and sharing of tourism proceeds and resources. The policy places a strong emphasis on the private sector with the aim of encouraging increased investment opportunities and promote private entrepreneurship. In addition, the policy includes; strategies of putting regulations that will ensure benefits for local communities, balancing interests of the communities and the private sector and providing mechanisms for micro financing to SMEs strategies aimed at the development of infrastructure to improve accessibility, enhancing quality, and marketing; and a range of strategies to promote cultural tourism (Musa, 2011).

Tourism Act No. 29 of 2008

This Act is the pre-eminent legal instrument governing tourism in the country, which includes provisions for all tourism sub-sectors tourism operations. The main purpose of the Act is to *"provide for institutional framework, administration, regulation, registration and licensing of tourism facilities and activities; and for related matters."*[Tourism Act, 2008, preamble.] As such, the main focus of the Act is on the development and marketing of the tourism sector, and the licensing and regulation of tourism facilities and activities. There is a broad recognition that coastal and marine tourism needs to be provided for in any future MSP framework, and that the policy and legal framework relating to tourism will have to be enhanced to a high relevance level for MSP.

Policy & legal framework for tourism – Zanzibar

Zanzibar Blue Economy Policy (2022)

Section 4.4. of the Blue Economy Policy addresses tourism. The overarching policy statement in this regard is "*The Government shall commit to making Zanzibar a sustainable tourism destination by protecting and promoting its cultural and natural heritage*".

The core focus for the development of the tourism sector is on sustainable tourism by inter alia:

i. Ensuring tourism investment in all coastal communities acknowledge and empower local cultures in order to protect and promote them as tourist attractions; and

ii. Promoting Pemba as a protected area to strengthen the Zanzibar tourism brand while maintaining the island's environment and cultural values.

The policy also recognises the opportunities presented by the development of the maritime tourism sector, including cruise ships and yacht tourism.

Zanzibar Tourism Policy (2018)

The overall goal of the policy is to "develop, plan, manage and promote a tourism industry that emphasises sustainability, quality and diversification, and which is culturally responsible, socially desirable, ecologically friendly, environmentally sustainable and economically viable".[Zanzibar Tourism Policy, section 3.1 – General Tourism Objective.] The policy recognises that its success and sustainability strongly depends upon functional ecological systems. This implies a strong relationship between sustainable coastal resource management and tourism growth.

The policy identifies a number of specific policy objectives including, *inter alia* "*To utilize more effectively the tourism potential to generate more income, human resources, foreign exchange earnings while protecting the environment, Zanzibar culture and traditions*." In this regard, it is envisioned that sustainable economic development should be accompanied by proper environmental management so that Zanzibar's natural resources and natural heritage are passed on to future generations.

Under this objective the policy further therefore identifies a number of policy strategies, some of which are directly relevant from the perspective of MSP, namely:

i. Create a zonal system to encourage the establishment of Marine Parks for better management and sustainable tourism development.
ii. Develop wide ranging long term programmes of research towards better and timely strategies for resources utilization and environmental protection.
iii. Establish the permanent programmes for monitoring the project development trend and tourist attractions that will lead to understand the status of the environment.
iv. Define the offshore marine boundary in order to avoid poaching from game fishing boats.

Thus, it can be seen that there is broad policy support for integrated marine planning as one mechanism to support the development of the coastal and marine tourism sector.

The Zanzibar Tourism Act No. 9 of 2009

The primary purpose of the Act is to provide for the establishment of the Zanzibar Commission for Tourism, a body corporate with a broad range of functions, powers and duties for the licensing and regulation of tourism activities. The Act addresses a range of different types of tourism businesses including with relevance to MSP, tourist vessels, marinas and dive centres. The specific conditions associated with marine tourism activities are further elaborated under the Zanzibar Tourism Regulations. These regulations address a broad range of activities including: diving centres; recreational vessels; para-sailing, water skiing and jet skiing; boardsailing and kitesurfing; and marine mammal watching. In addition, the protection of underwater cultural monuments is also addressed under the Regulations.

Institutional arrangements for tourism - Mainland

The Tourism Division under the Ministry of Natural Resources and Tourism (MNRT) is the leading governmental institution concerned with the formulation and implementation of tourism development policy strategies and plans, and the stimulation and promotion of private investment activities. It also regulates, promotes and facilitates tourist service provision in the country.

There are strong synergies between the tourism sector and the conservation sector which is reflected in the MNRT's mission, which is to "formulate policies and strategies that would lead to sustainable conservation management of natural, cultural resources and environment, promote and diversify tourist attractions and increase sector contribution to national income and foreign exchange earnings." That said, the major focus of the conservation/tourism relationship relates to those national parks on land and there are limited marine related activities at this stage.

Institutional arrangements for tourism – Zanzibar

The Ministry of Tourism and Heritage in Zanzibar is the leading governmental institution concerned with the formulation and implementation of tourism development policy strategies and plans on Zanzibar, and the stimulation and promotion of private investment activities. It also regulates, promotes and facilitates tourist service provision in the archipelago. The Zanzibar Tourism Commission is a dedicated institution under the Ministry of Tourism and Heritage that is mandated to enforce sustainable tourism regulations in line with conservation of coastal and marine environment.

Spatial management tools for tourism

Two key relationships are recognised with respect to existing spatial management tools in the coastal and marine domain as follows:

First, there is a strong inter-relationship between coastal tourism and MPAs developed under the various legal instruments outlined above. The provision of zones and facilities within existing MPAs to support the tourism sector is one of the key drivers for designating these areas.

Secondly, one of the key benefits of MSP is to identify and spatially resolve conflicts between different (often incompatible) uses of the marine environment. Consideration of existing and future coastal and marine tourism uses will be a key factor in the development of MSP.

4.6.12. Coastal salt production (Key BE Sector #7)

Overview

The majority of salt production in Africa, including Tanzania, is based on solar salt works situated in the upper intertidal zone, usually inland of mangrove forests. The main use of solar salt is for human consumption, as a vital component in diets, particularly when iodised. Other uses of lower grade, non-iodised salt, include livestock feed, use in food preservation and in industry.

Production takes place to differing degrees of industrialisation in 12 of the 16 coastal districts in Mainland Tanzania. According to the National Environmental Master Plan for Strategic Interventions, a key issue with respect to salt production is the clearing of mangroves for traditional salt making. While salt pans operated by major salt producers are done behind mangrove areas in the bare salt flats, many salt pan operators tend to violate the conditions given along with the licenses, often encroaching into non-licensed areas normally covered by mangroves to illegally clear the mangrove and expand production areas, a process resulting in degradation of mangrove forest. Major solar salt pans relative to mangrove areas are in Bagamoyo, Kilwa, Lindi, Mkinga, Mkuranga and Mtwara. Presently there is about 7,250 ha of salt pans distributed almost all over the coastline (Office of the Vice President, 2022). The sea salt production industry through solar salt pans represents large business with investments of billions of TZS and supply over 90% of domestic and industrial consumption (WWF, 2022).

Policy & legal framework for coastal salt production – Mainland Tanzania

Mineral Policy of Tanzania (2009)

The Mineral Policy of Tanzania was promulgated in 2009 by the Ministry of Energy and Minerals, which is charged with the responsibility of formulating a mineral policy, overseeing its administration and coordinating the development of the mineral sector of Tanzania. The Policy is driven by its vision, which is to have an effective mineral sector contributing significantly to the acceleration of socioeconomic development through the sustainable development and utilisation of mineral resources in Tanzania by 2025.

The objectives of the Policy include, but are not limited to, improvement of the economic environment for the purposes of attracting and sustaining local and international private investment in the mineral sector. According to the Mineral Policy, the government of Tanzania is to remain as regulator and facilitator of the sector while promoting private sector involvement.

The overarching objective of the Policy is to increase the mineral sector's contribution to the GDP and alleviate poverty by integrating the mining industry with the rest of the economy. Although the link with salt mining is not obvious, 'salt' is defined as an industrial mineral in the context

of the policy and related legal framework. As such, the policy and legal regime dealing with minerals and mining appears to be broadly applicable.

National Environmental Policy (2021)

As noted above, the NEP addresses eight major environmental threats, including *inter alia*: Land degradation; loss of wildlife habitats and biodiversity; deterioration of aquatic systems; deforestation; and, environmental pollution. In the context of deterioration of aquatic systems, the Policy includes a number of policy statements that are relevant to coastal salt extraction.

National Integrated Coastal Environment Management Strategy (2003)

This Strategy recognises the importance of salt production to the livelihoods of coastal communities. Strategy 3 explicitly recognises the need for actions to increase productivity of current economic activities (including salt production) and to promote alternative environmentally sustainable livelihoods. However, it also recognises the critical need for environmental planning and management of key economic opportunities within the coastal area.

The Mining Act No. 14 of 2010

This Act establishes the law relating to prospecting for minerals, mining, processing and dealing in minerals, to granting, renewal and termination of mineral rights, payment of royalties, fees and other charges and any other relevant matters. The Act applies to Mainland Tanzania.

According to the definitions, salt is considered to be an 'industrial mineral' and therefore subject to the licensing regime of this Act. In this regard, the Act provides a licensing regime (including prospecting licences and mining licences) for the development of any coastal salt resources. These licences are issued by the Minister responsible for mineral and mining. The granting of such licenses is subject to the granting of relevant approvals under the Environment Management Act.

Environment Management Act No. 2 of 2004

Under this Act, any person undertaking a mining activity must undertake an environmental impact assessment (EIA). The successful completion and approval of an EIA will result in the issuance of an EIA Certificate and as such, this is a requirement for salt production.

Policy & legal framework for coastal salt production – Zanzibar

There are general environmental management guidelines on salt pans with respect to salt extraction in Zanzibar. These guidelines are often prescribed from two key institutions – the Ministry responsible for Environment (Environmental Briefs and Mangrove Biodiversity Conservation) and the Ministry responsible for Forest Conservation (Protection of Mangroves). In the past the Department of Fisheries was involved in the Environmental Assessment processes. However, with the establishment of the Ministry of Blue Economy and Fisheries in 2020, the Department of Blue Economy Development and Coordination has been assigned to coordinate environmental and fisheries aspects of the ZEMA-led ESIA process along with the Department of Marine Conservation, Department of Fisheries and Aquaculture, and the Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI).

The Zanzibar Environmental Management Act No. 3 of 2015

As noted in section 4.5.1 above, this Act contains broad provisions relating to different aspects of marine environmental management, including the extraction of non-renewable natural resources. While 'salt' is not explicitly included under the definition of non-renewable natural resources, the definition is broad enough to be interpreted to apply to salt. In this regard, the Act requires

that no person may excavate a non-renewable natural resource without a permit issued by the Joint Management Committee for Non-renewable Natural Resources Management established pursuant to this Act.

Sustainable Utilization of Non-Renewable Natural Resources Regulations, 2011

These regulations provide additional legal controls for activities in the coastal zone. According to the regulations, no person may "excavate, mine, extract, dredge, collect, harvest, transform, transport, lease and or sell any non-renewable natural resource" without *inter alia* authorisation from the ZEMA. In addition, pursuant to regulation 6, the Regulations define a number of specific buffer zones from within which it is prohibited to "excavate, mine, extract, and or dredge non-renewable natural resource", including:

i. Within, and one km buffer zone from, any recognized forest protected area, and mangrove habitat; and
ii. Within, and one km buffer zone from, the beach.

Forest Resources Management and Conservation Act No. 10 of 1996

The purpose of this Act is to promote the protection, conservation and development of forest resources for the social, economic and environmental benefit of present and future generations of the people of Zanzibar. Given the relationship between salt extraction and mangrove resources, this Act is applicable to salt mining. In particular, the Act makes it an offence to conduct salt-making operations, unless authorised to do so by a licence issued by the Department of Forestry and Non-Renewable Natural Resources, within any Forest Reserve, which includes most, if not all coastal mangrove resources in Zanzibar.

Institutional arrangements for coastal salt production

The main body regulating mining activities in Mainland Tanzania is the Mining Commission, which is established as a body corporate and is vested with functions that include supervising and regulating the sector, issuing, cancelling and renewing mineral rights, and resolving disputes arising out of mining operations or activities. EIA's are approved by the National Environment Management Council, while the Forestry and Bee-keeping Division has responsibility for the conservation and management of mangroves, including any activities undertaken therein.

In Zanzibar, the Zanzibar Environmental Management Authority is responsible for ESIA process on salt pans while the Ministry of Blue Economy and Fisheries and the Department of Forestry and Natural Resources are primarily involved in conservation of the mangrove ecosystem for managing the impacts of salt production. On the other hand, the institution responsible for managing non-renewable natural resources is the Ministry of Energy and Minerals of Zanzibar through the Department of Minerals.

Spatial management tools for coastal salt production

No specific spatial management tools are available for the control of coastal salt production. However, the application of Forest Reserves appears to be a relevant management tool in this respect.

4.7. MONITORING, CONTROL AND SURVEILLANCE OF THE URT'S MARINE SPACE

4.7.1. Overview

Creating the conditions needed for effective management of ocean space and future economic growth, including the implementation of MSP, depends on an effective and efficient maritime monitoring, control and surveillance (MCS) system.

The MCS Principles

The **monitoring** component of MCS should receive, integrate and verify information from licensing units, sea-going units (sightings and inspections), observers, VMS and satellite imagery, radar, port inspection, regular dockside monitoring of landings, logbooks, production logbooks, and air sightings for vessel identification, activity and location. The system can also include data on fishing patterns, fishers and community profiles with respect to socioeconomic factors, dependency and earnings from fishing and any other fisheries information.

The **control** component of MCS will require appropriate and enforceable legislation to implement the approved, participatory fisheries management plans. In order for the control component of the MCS system to function effectively, the fisheries administration should have access to a team of suitably qualified and experienced lawyers to draft appropriate legislation in support of management plans, to provide ongoing advice on legal issues that may arise with regard to the implementation of management measures, and to prosecute offences under fisheries legislation.

The **surveillance** component of MCS will require authorized personnel to collect data for the monitoring aspect of MCS during their surveillance duties, and to communicate with and educate stakeholders involved in participatory conservation activities. Surveillance involved personnel must have the appropriate equipment and facilities, operating funds and training to be skilful to encourage voluntary compliance and to enforce laws if necessary.

MCS should be applied to all maritime activities, but it is mainly focussed on:

i. For fishery management MCS serves as an implementation mechanism that fisheries managers use to implement fisheries policies and management plans.
ii. For shipping, Port State Control measures are an important way of enforcing international standards such as the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and the International Convention for the Safety of Life at Sea (SOLAS) that variously address issues related to shipping and maritime pollution.
iii. Monitoring and surveillance activities are an essential component to identify and control Illegal activities such as drug trafficking, piracy, terrorism and human trafficking. Such monitoring can be undertaken using arial and sea going assets as well as remote sensing technology such as automated identification systems (AIS), vessel monitoring systems (VMS) and other satellite tracking systems.

4.7.2. Current MCS Arrangements

The URT already has in place a range of arrangements aimed at MCS of its marine space, and is a party to a number of regional strategies aimed at strengthening MCS in the region. These include, but are not necessarily limited to: (i) the 2008 Economic Community of Central African States (ECCAS) regional maritime security strategy; (ii) the 2011 Southern African Development Community (SADC) maritime strategy; and (iii) the 2014 Economic Community of West African States (ECOWAS) strategy. These initiatives are further operationalized through regional maritime codes of conduct such as the Djibouti Code of Conduct (signed in 2009) and Yaoundé Code of Conduct (signed in 2013).

In this regard, the URT participates in a number of regional initiatives aimed at strengthening MCS activities. These include:

FISH-I Africa: Established by Stop Illegal Fishing in 2012, FISH-I Africa has bought a new approach to stopping illegal fishing in the region. It enables the sharing of real-time information and intelligence and coordinates actions against vessels suspected of operating illegally. Increased knowledge about the illegal operators, their methods and techniques means that enforcement capacity can be targeted more effectively.

IOC Regional Fisheries Monitoring Plan: Under the IOC's Regional Fisheries Monitoring Plan (PSRP) participating nations (including Comoros, France on behalf of Réunion island, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and the URT) routinely share and exchange information to help conduct illegal fishing investigations.

EUCAP Nestor Project: Under the EU-supported EUCAP Nestor project, the URT is benefitting from support to develop a self-sustainable capacity for continued enhancement of the maritime security, including counter-piracy and maritime governance. Recently this has included capacity building of staff from Tanzania Maritime Police Unit (TMPU) and the Tanzania Naval Command, to undertake criminal investigations.

Indian Ocean Memorandum on Port State Control: An inter-governmental organization on Port State Control (PSC) in the Indian Ocean Region, recognized by the IMO. The MoU provides a regional network of port State control inspectors and allows the sharing of vessel inspection information among member States of the MoU in order to verify and ensure that the ships entering their ports are in optimal conditions. The MoU includes the Indian Ocean Computerized Information System (IOCIS) for the purpose of exchanging information on port State inspections.

Djibouti Code of Conduct: The Code of Conduct Concerning the Repression of Piracy, Armed Robbery Against Ships and Illicit Maritime Activity in the Western Indian Ocean and the Gulf of Aden Area (Djibouti Code of Conduct) was adopted in 2009 to facilitate cooperation among signatories (including the URT) in the repression of piracy and armed robbery against ships. The Code provides for sharing of piracy-related information, through its information sharing network established in 2011. The network is centred on the three Information Sharing Centres: the Regional Maritime Rescue Coordination Centre (RMRCC) in Mombasa, Kenya, Maritime Rescue Coordination Centre (MRCC) in Dar es Salaam, United Republic of Tanzania and the Regional Maritime Information

Sharing Centre (ReMISC) in Sana'a, Yemen. It is used to exchange information on piracy incidents across the region and other relevant information to help shipping and signatory States to take action to mitigate piracy threats.

4.7.3. Current Capabilities

MCS activities cover the broad range of maritime sectors. However, the major focus in the URT is on EEZ and coastal fisheries, marine conservation, shipping, and the suppression of unlawful acts (such as piracy and trafficking). For Zanzibar, KMKM (Kikosi Maalum cha Kuzuia Magendo, translated as 'Special Unit for Prevention of Smuggling') is mandated on marine trafficking and smuggling. It is also the de facto enforcement agency in Zanzibar for other MCS and security-related issues in near-shore and territorial waters around Zanzibar, including for example blast-fishing and other IUU fishing that's beyond the capacity of Department of Fisheries.

EEZ Fisheries

For the specific case of EEZ fisheries *The Deep Sea Fisheries Management and Development Act No. 5 of 2020* provides the enabling legislation for all fisheries MCS activities in the URT's EEZ. Pursuant to section 21(1) of the Act, the Authority shall develop, implement, monitor and enforce conservation and management measures necessary to ensure the long-term sustainable use of fishery resources. The Act does not prescribe what these measures might be. Instead, these are set out in detail in The Deep Sea Fisheries Management and Development Regulations, 2021.

The Act also provides for Port State Measures application and implementation to apply to foreign fishing vessels and fishing vessels entitled to fly the flag of Tanzania that seek entry to a port or are in a port of Tanzania, with certain exceptions. The Port State Measures also apply to all fishing and fishing related activities and persons, vessels, vehicles , and so on, engaged in activities within the purview of the Act. The Act contains incidental provisions with respect to funding, offences, the courts vested with jurisdiction to handle matters arising from the Act, evidentiary procedures of the Court, and so on.

Detailed provision relating to MCS in the EEZ are provided in *the Deep Sea Fisheries Management and Development Regulations, 2021, promulgated under section 101 of the parent Act.*

Part IV of the regulations contained comprehensive provisions for MCS including i*nter alia*:

i. Powers of entry, search, seizure and arrest
ii. Deployment of fishery observers
iii. Duties of fishery inspectors
iv. Pre-licensing and off-loading inspection procedures and requirements
v. Use of VMS, IAS and other mobile transceiver units
vi. Port State measures and restriction on port entry

The DSFA has established a compliance section which has responsibility for: (i) monitoring and control; and (ii) enforcement. The Fisheries Monitoring Centre (FMC) is responsible for MCS activities such as observer program, inspection program, aerial surveillance, joint sea patrols (boarding inspection), dockside inspection (pre license Inspection and landing inspection), Vessel Monitoring System Themis Web base System (VMS) and Automatic Identification System (AIS). The FMC carries out inspectorate duties with regards to port State inspection of fishing vessels, land inspections, sea and air surveillance pertaining to national and regional requirements. These are undertaken in conjunction with the Tanzania People's Defence Force/Navy and the Tanzania Marine Police.

Air patrols are also undertaken in collaboration with Tanzanian Navy, Marine Police Smuggling Unit, and Fisheries Development Divisions of (Tanzania Mainland and Zanzibar) according to Regulation (35) regarding Authorized officer to participate in surveillance activities to combat IUU fishing in the EEZ of Tanzania.

Coastal Fisheries

Both Mainland Tanzania and Zanzibar have provisions under their respective fisheries Acts to establish MCS activities for coastal fisheries.

For Mainland Tanzania The Fisheries Act and subsidiary regulations provide the overarching legal basis for fishery-related MCS activities in Mainland Tanzania. The Act provides for the creation of a Surveillance Unit (under Part VIII of the Act) with responsibility for the protection of fish and its environment, fishery products and aquatic flora against unlawful dealers and generally the enforcement of the provisions of this Act. Under this Part, the Director may designate Authorised Officers, with broad functions, powers and duties for MCS activities. These officers may include Director or any fisheries officer or a member of beach management unit or other person authorized in writing by the Director.

The Ministry of Livestock and Fisheries has established five Fisheries Resource Protection Units along the coast in Tanga, Dar es Salaam, Mafia, Kilwa and Mtwara respectively. These units have vessels and dedicated MCS teams at each of these locations and are responsible for undertaking compliance inspections of vessels and landing sites. The Fisheries Division also uses co-management philosophy in managing its resources, which provides scope for local communities to participate in the enforcement of fisheries and other related laws. Local community groups participating in the enforcement of fisheries resources include BMUs, CFMAs and Village Liaison Committees (VLCs).

For Zanzibar Fisheries Act provides the overarching framework for MCS activities in Zanzibar. Pursuant to the Act, the Fisheries Department has established a MCS unit that works alongside the Department of Marine Conservation. Staff of the MCS Unit have access to vessels and undertake regular monitoring in Zanzibar's Marine Conservation Areas. The Act provides for the appointment of Authorized Officers with broad powers of inspection, seizure and arrest. These officers may include the Director or any fisheries officer or a member of fishermen committee or any other person authorized in writing by the Director to exercise any power or to discharge any duty under this Act

Port State Control

Both Mainland Tanzania and Zanzibar have enacted provisions in their respective legal frameworks to provide for the undertaking of Port State Control functions in their ports. For Mainland Tanzania, TASAC has primary responsibility for undertaking PSC activities pursuant to the Merchant Shipping Act (2003) and the Tanzania Shipping Agencies Act (2017). Pursuant to these two instruments, with regards to the regulation of the maritime environment and maritime safety and security, TASAC shall inter alia:

i. Administer the Merchant Shipping Act 2003;
ii. Exercise port State control of all foreign ships and flag State control of ships registered in Mainland Tanzania;
iii. Regulate and approve marine services, safety equipment and marine services providers;
iv. Coordinate maritime search and rescue operations;

v. Regulate and coordinate the protection and preservation of the marine environment;

TASAC operates a vessel monitoring system from the port of Dar es Salaam allowing it to track, using AIS, all vessels entering the URT's territorial waters. For Zanzibar, The ZMA is responsible for regulating all aspects of shipping within its waters, pursuant to the Zanzibar maritime Authority Act (2009) and the Maritime Transport Act (2006).

Suppression of Unlawful Acts

Issues relating to the suppression of unlawful acts (such as marine piracy, trafficking of illicit goods and people and the protection of national borders) are Union matters that are managed by the Government of the URT. The approach to addressing these issues is a multi-agency one that includes:

i. The TPDF – Primarily the Tanzania Naval Command
ii. The Tanzania Police Force
iii. The Tanzania Revenue Authority
iv. Deep Sea Fishing Authority
v. Ministry of Fisheries
vi. The Ministry of Works and Transport

To support coordination of these efforts the Government has established a number of inter-agency Task Teams. For example, in an effort to find a lasting and effective solution to the escalating cases of environmental and wildlife crime the Ministry of Home Affairs launched a Multi-Agency Task Team (MATT). Aimed at coordinating efforts and resources, the Task Team will be led by the Tanzania Police Force and encompasses Tanzania Forest Services, the Wildlife Division, Fisheries Division, Tanzania Intelligence and Security Services as well as seeking engagement with the criminal justice system.

The initiative has been supported by the Indian Ocean Commission's (IOC) SmartFish Project implemented jointly with the FAO and funded by the European Union.

At the domestic level, it is understood that, the URT has established a number of shore-based tracking stations, operated by the Tanzania People's Defence Force, that provide capabilities for situational awareness functionality through multiple sensor fusion, target detection and classification capabilities. This system provides the URT with an improved regional surveillance capability to monitor its maritime space.

To support its MCS activities, the Tanzania Naval Command has recently received new patrol vessels with support from the US Africa Command. These vessels are already deployed in the Mozambique Channel to help the Southern African Development Community and international partners address an array of sea crimes, including illegal fishing, drug smuggling, oil theft and human and weapons trafficking.

CHAPTER FIVE

FINDINGS AND RECOMMENDATIONS

In order to assess the level of preparedness for the country to undertake MSP, a high-level conceptual framework was developed to inform the analysis (Table 5.1). Each of the five elements listed in Table 5.1 are elaborated and discussed below, including an identification of key gaps and challenges and concomitant recommendations to address them.

Table 5.1: Analytical framework for development of MSP

Elements of the high-level conceptual framework	
Governance Arrangements	• Institutional arrangements • Policy and legal basis to support MSP implementation
Drivers & Goals	• Understanding the drivers for MSP • Goals and objectives for MSP in the URT
Geographic Boundaries & Scope	• Geographic boundaries and planning areas • Jurisdictional limits • Future uses to include in MSP
Data Collection & Management	• Availability of key marine spatial data sets • Data management and access • Science and research input
Multi-objective Planning Process	• Multi-use stakeholder engagement • Existing spatial planning processes and tools • Marine zoning activities

5.1. GOVERNANCE ARRANGEMENTS

This section should be read in conjunction with section 4.4 above, which provides an overview of the various policy, legal and institutional arrangements that apply to different blue economy sectors across the URT.

5.1.1. Institutional arrangements

According to UNESCO-IOC, the development of MSP requires two types of authority: (i) Authority to plan for MSP; and (ii) Authority to implement MSP (UNESCO-IOC/EU, 2021). Both types of authority are equally important. They could be combined in one organization, but in many MSP initiatives around the world, a new authority is often established for MSP, whilst implementation is carried out through existing authorities and institutions (Ehler and Douvere, 2009).

Given that the URT is yet to embark on full-scale MSP, the focus for now should be on the authority for planning. The MSP authority should have the mandate and jurisdiction for marine space, and should be recognised by other authorities and agencies, thereby enabling it to lead multi-objective MSP in a transparent, inclusive and participatory manner (UNESCO-IOC/EU, 2021). In the context of the URT, the competent authority could be established either from an existing Ministry, with a mandate for ocean governance, or through the creation of a dedicated inter-governmental committee with a mandate to make the necessary policy decisions, or through the establishment of an entirely new institution specifically mandated to develop and implement MSP.

Key findings

Absence of a guiding framework for MSP: This analysis highlights that the URT has a well-established and mature institutional framework to manage the various blue economy sectors. Many government institutions have a sector-specific mandate for marine planning and zoning, and will play an important role in the development of MSP. However, a number of gaps have been identified in the institutional arrangements that will need to be addressed prior to commencing MSP.

Notwithstanding existence of the DSFA, and its mandate to manage fisheries resources in the EEZ, at the URT level, no single institution has overall responsibility for ocean affairs. There are also some areas of resource exploitation, notably fisheries and oil and gas extraction, where there are distinctive institutional mandates between Mainland Tanzania and Zanzibar (e.g. Environment & Conservation, Fisheries, Maritime Transport, Oil and Gas, etc.).

In light of the importance placed on blue economy development as a longer-term pillar of national development, consideration could be given to establishing a more permanent URT-level institution under the joint coordination of VPO and MoBEF (such as an Ocean Commission or similar), with a broad focus on ocean governance in alignment with the existing dynamics of the UNEP Nairobi Convention Regional Seas Programme on Ocean Governance Strategy, including MSP and blue economy development. However, it is recognised that the establishment of such an entity will take time and resources to achieve. In the absence of such a national entity, therefore, there is a need for a robust, multi-sectoral mechanism (one that reflects the interests of different stakeholders across the URT) to lead and coordinate the development of MSP across the URT. Such an integrated coordination mechanism involving all these key sectors as described above (from both Mainland and Zanzibar) should be formally established and have a clear mandate for a joint implementation formula especially in the EEZ.

Inadequate capacity to undertake MSP: Within existing institutions, it is recognised that some capacity already exists to support commencement of spatial planning and some elements of marine zoning related to fisheries and conservation. However, it is also recognised that there are likely to be significant gaps in the existing technical capacity that will need to be addressed. Whilst it is assumed that the development of MSP in the URT will be supported by external technical partners, it is also recognised that there is a need to develop the capacity of the URT's institutions to work on MSP at different levels. The scope of such capacity building will be broad and will not be same across all different stakeholders or organisations both on Mainland and Zanzibar. As such, there is a need to define, early on in the project, what those capacity needs will be.

SWOT analysis of existing institutional arrangements

Table 5.2 below shows Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis highlights some of the key challenges and opportunities with respect to the current institutional arrangements.

Table 5.2: Strengths, Weaknesses, Opportunities and Threats (SWOT) to the current institutional arrangements.

Strengths	Weaknesses
• Well established existing institutions for each of the key marine uses across the URT. • Institutional mandates for and experience with land-based spatial planning and marine zoning exists within some institutions. • Mechanisms exist at the Union-level (VPO) for multi-agency coordination. • Experience gained through the DSFA for Union-wide planning and management of fisheries in the EEZ. • Some capacity already exists for land-use planning and marine planning/zoning such as ICZM with respect to MPAs/ MCAs and fisheries co-management.	• Lack of an overarching Union-wide agency with responsibility for ocean governance, the blue economy and MSP especially in the EEZ. • Overlapping institutional and sectoral mandates e.g. Environment & Conservation, Maritime Transport, Fisheries, Oil and Gas. • MSP is new to the URT and therefore institutional capacity is limited. • Inadequate institutional capacity to lead, coordinate and support national-scale MSP.
Opportunities	**Threats**
• Establish a permanent URT-level institution under the VPO - MoBEF coordination with a broad mandate for ocean governance affairs and MSP especially in the EEZ waters. • Establish a URT-level Blue Economy/ MSP Coordination mechanism under the joint coordination of the VPO and MoBEF. • Strengthen and clarify existing mandates for coastal and marine resource governance. • Develop technical capacity by working with international and regional development/technical partners. • To leverage the support of development partners to build long-term and sustainable technical capacity to support MSP and, more broadly, integrated ocean governance at different levels throughout the URT.	• Institutional mandates for MSP are not clearly defined. • Inability to accelerate joint coordination mechanism towards MSP will hamper progress. • Lack of clear coordination roles may lead to overlapping MSP processes.

5.2. RECOMMENDED INTERVENTIONS

Recommended interventions and scoping study for Marine Spatial Planning (MSP) in Tanzania are crucial for the sustainable management and development of the country's coastal and marine resources. MSP aims to balance competing uses of the marine environment, including fisheries, tourism, energy, and conservation, while considering social, economic, and ecological factors.

RECOMMENDATION 1:
Define and establish a VPO-MoBEF MSP coordination and implementation mechanism, with well-defined mandates and dedicated technical resources to support it.

In the interest of expediting MSP, there is a need to formally establish a coordination mechanism, under the joint coordination mechanism of VPO and the MoBEF. The proposed mechanism can coordinate and lead the overall development of the URT's maritime space. This could initially take the form of an Inter-Ministerial Steering and Technical Committee, potentially one that might also co-ordinate national blue economy development at URT-level, subject to what might be included in the URT Blue Economy Policy currently under preparation.

The following indicative structure is suggested as a model for such a mechanism, although the specific design and function of the coordination mechanism will need to be developed under national stakeholder consultative level to be coordinated by the VPO and MoBEF.

Key Stakeholders in MSP

It is clear from the analysis undertaken as part of this study that the authority for MSP planning especially in the EEZ and adjacent waters (subject to future ABNJ agreement) should be a Union-level entity, with broad participation from across the URT and jointly coordinated by VPO and MoBEF. At this stage it is not recommended to establish a new institution, since several existing institutions could undertake this function. The decision as to which model is the most appropriate mechanism for the URT, is a policy decision for Government. Whichever option is chosen, however, the MSP Authority should establish some form of multi-agency coordination and advi-

RECOMMENDATION 2:
Establish an effective mechanism to oversee MSP co-ordination in areas where Mainland Tanzania and Zanzibar have adjacent jurisdictions and common management interests.

There are many important ecological, hydrographic and resource-use linkages that connect Mainland Tanzania and Zanzibar across the Pemba and Zanzibar Channels, as well as in territorial waters. These are not least in the form of shared fish stocks, but also marine biodiversity life-cycles, nutrient cycles, tourism, transportation and others. Existing mechanisms of engagement over the management of marine resources in areas where Mainland Tanzania and Zanzibar have adjacent jurisdictions are somewhat ad-hoc and will likely not be robust enough for MSP. It will be critical for Mainland and Zanzibar to co-participate even in near-shore MSP processes to ensure alignment and mutual sharing of ideas on such issues.

sory mechanism, in order to structure a participatory MSP governance framework reflective of current policy legal and institutional arrangements on both Mainland and Zanzibar .

Multi-Agency coordination approach

The establishment of a multi-agency coordination mechanism led by the Inter-Ministerial Steering Committee and Inter-Ministerial Technical Committee will be supported by an MSP Core Committee of sectoral experts from Environment, Fisheries & Aquaculture, Maritime Transport, Oil and Gas, Tourism, etc. and would be a logical first step to commence planning for MSP. The purpose of the Core Committee of MSP Experts should be to begin organising the MSP process and bring perspectives and expertise from multiple sectors to coordinate the implementation of MSP from the nearshore environment (MPAs, seaweed, sea cucumber, ports, small scale fishing, etc) to offshore activities (e.g. shipping, deep sea fishing, oil and gas, ABNJ, etc.). The Core Committee of MSP Experts could also ensure that representatives from sectoral authorities and stakeholders are kept aware of the MSP process and what to expect in terms of timelines and the workstreams.

To this end, a broad MSP coordination mechanism is suggested; one that partners external expertise with existing internal capacity. The key elements of this mechanism are outlined below, and is illustrated in Figure 18.

i. MSP Coordination Authority – The MSP Coordination Authority will have the overall and joint responsibility to oversee and coordinate the MSP activities.

ii. Inter-Ministerial Coordination Committee (MCC) – As a multi-agency process, MSP will involve engagement with the broad range of government agencies including, but not limited to, fisheries, environmental management and

RECOMMENDATION 3:
Undertake an assessment of capacity needs across the key implementing agencies and stakeholders

In addition to a well-established land-use planning framework, the URT has extensive experience of implementing ICZM, primarily through the Tanzania Coastal Management Partnership (TCMP), and the Zanzibar ICZM Strategy under the Ministry responsible for Environment, as well as a number of more local scale spatial planning initiatives associated with the development of MPAs/MCAs. United Republic of Tanzania is also party to the ongoing scoping and capacity building processes under the UNEP Nairobi Convention work programme. Furthermore, the University of Dar es Salam, Institute of Marine Sciences (IMS) has also been active in delivering training on MSP at the undergraduate and post graduate levels. In addition, a number of NGOs are actively working to support conservation planning initiatives, most of which involve some form of zoning and multi-use planning frameworks. This represents a significant existing body of expertise for MSP within the URT, and should be recognised when considering agencies and organisations to support implementation of MSP.

This notwithstanding, any future MSP initiative must include the further development of technical capacity, not only for MSP but also for integrated ocean governance, for those institutions that will be involved in both development and implementation of MSP. Capacity needs will need to be realistically assessed by the project steering committee, in conjunction with technical partners, and a capacity needs assessment undertaken and implemented based on the identified need.

conservation, fisheries, tourism, maritime transport, energy, forestry, land-use planning and local government administration. Under the joint coordination of VPO and MoBEF, Ministers (or Permanent Secretaries) representing each of these portfolios (from both Mainland Tanzania and Zanzibar), should be responsible for overseeing the entire MSP process. The MCC will therefore deal with decisions on user conflict resolution, trade-offs, and other matters relating to MSP.

iii. Core Committee of MSP Experts (CC) – The CC will oversee the day-to-day operation of the planning process. To be effective it is important that the CC has a clear mandate to: (i) undertake day-to-day work on the development of the MSP framework; and (ii) to make decisions relating to technical aspects of marine spatial planning under the general oversight of the MCC. As such, the CC should comprise officials senior enough to be empowered to make these decisions.

iv. Technical Working Groups (TWG) – Despite being driven as a political process, MSP is an inherently technical process involving a broad range of technical skillsets (see Table 16 below). To this end, the CC should be supported by a number of Technical Working Groups (TWGs) focussing on, as a minimum:

    a. the development of the marine spatial plan;

    b. the identification, procurement and management of data;

    c. the legal and policy framework need to support the spatial planning framework; and

    d. stakeholder engagement, respectively. Each of the TWGs would be established by and report to, the PSC, it is anticipated, will be supported, to the extent practicable, by technical experts from development and implementation partners.

    v. Area Planning Teams (APT) – Under the auspices of the broad MSP framework, planning activities should be undertaken within pre-defined planning areas in close coordination with local government authorities and stakeholders. This will require the establishment of planning teams to support area-specific planning activities.

While Figure 5.1 provides a broad concept for MSP planning and implementation arrangements for the URT, it should be recognised that any MSP initiative will require significant financial and technical resourcing to support it, not least during the planning stage. These resources are most likely to be delivered under the framework of a dedicated project with project finance. This notwithstanding, the Government of the URT will need to put in place a robust governance framework for the blue economy and MSP. The various institutional arrangements outlined in Figure 5.1 (MSP Authority, Inter-Ministerial Coordination Committee etc.) should be seen as permanent government entities that should be established with a mandate from Cabinet, that will endure well beyond the life cycle of any specific project.

This highlights the need for an effective co-ordination mechanism, and agreed protocols, to provide a platform for Mainland Tanzania and Zanzibar to work collaboratively and effectively at a technical level, in advancing MSP in such areas. An organisational structure for the MSP Co-ordination Authority is proposed to oversee MSP co-ordination as indicated in Figure 19 below. Analysis of capacity needs for MSP, based on a broad review of global experience, indicates that a broad range of capacity/skills will be needed to support MSP development and implementation in the URT ( ). Given that MSP has not yet been mainstreamed to date, it is reasonable to assume that much of the capacity outlined in , particularly at the governmental

level, is limited. Although capacity exists to undertake land use and land-based spatial planning, this may not necessarily be the case in the offshore domain beyond the existing ICZM and MPA/MCAs planning zones.

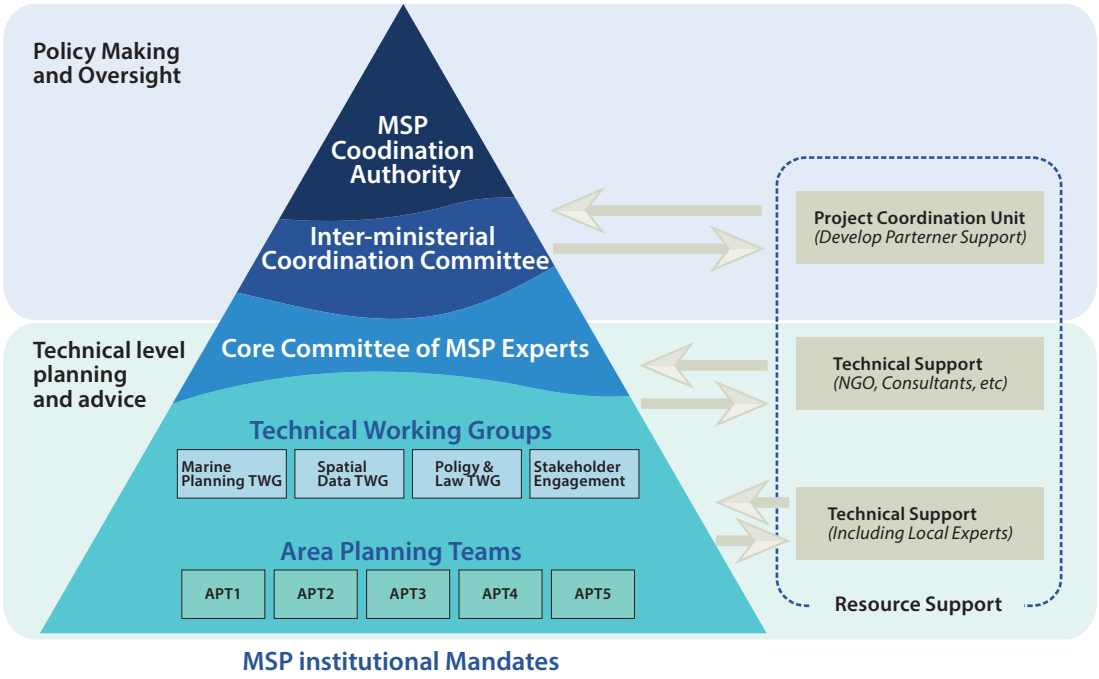


Figure 5.1: Suggested MSP implementation and support structure

Table 5.3: Skills and expertise required to support MSP development and implementation in the URT

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
Governance	Institutional arrangements	Coordination & organisation of the various activities & processes. Review of draft plan to include comments & inputs from consultations with necessary arrangements for approval.	Organizational leadership. Strategic planning and strategy development. Trade-off analysis and decision-making. Programme/project management, systems thinking, & management processes. ?Understanding of the MSP process and the benefits and outcomes of MSP for the URT	Leadership/executive team familiar with MSP. Strategic planning. Institutional design and management. Relationship management. Stakeholder engagement. Maritime sector experts (notably shipping, fisheries and offshore petroleum).
	Policy & legal basis for MSP	Ensuring coordination, compliance, & enforcement of measures & policies defined by the plan. Reporting & monitoring the progress of the plan & necessary planning reviews	Project/organizational management. Sectoral interests & agencies. Monitoring, control and enforcement options. Understanding indicators and the design of monitoring programmes. Statistical & reporting experts, social sciences.	Monitoring and enforcement experts. Monitoring and enforcement technology experts. Legal expert with international maritime/law of the sea expertise. Environmental monitoring expertise. Auditing and evaluation expertise.

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
Drivers & Goals	Drivers for MSP	2015 Cairo Declaration of the African Union Ministerial Conference on Environment (AMCEN). African Union Integrated Maritime Strategy 2050 African Union Blue Economy Strategy 2019. Western Indian Ocean (WIO) Regional Ocean Governance Strategy. UNECA Blue Economy Policy. Increased pressure on coastal and marine environment (aquaculture, fisheries, tourism, etc.). CCM Election Manifesto 2020 – 2025. Zanzibar Vision 2050, ZADEP 2021-2026 and the Zanzibar Blue Economy Policy	Understanding linkages between global and regional multilateral processes and national needs. Understanding strategic action to be mainstreamed in the national MSP priorities. Implementation of the key actions of the national development instruments. Marine zone planning, research and marine resource management	Experts with Ocean Governance Knowledge. Experts with BE/MSP knowledge. Interactions with other plans in the coastal zone, including ICZM plans.

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
	Goals & objectives for MSP	Define vision & objectives for the planning area based on evidence & engagement.	Organizational leadership. Strategic planning and strategy development. Understanding of the MSP process and the benefits and outcomes of MSP for the URT. National development planning and policy frameworks. Knowledge of marine habitats and biodiversity and ability to interpret environmental data. Marine users and marine resource management	Leadership/executive team familiar with MSP. MSP expertise. Strategic planning. Marine science and environmental management. Maritime sector experts (notably shipping, fisheries and offshore petroleum). Stakeholder engagement.
Geographic Boundaries & Scope	Geographic boundaries & planning areas	Define boundary of planning area based on jurisdictional boundary, patterns of maritime activities & bio-regions	Existing jurisdictional boundaries. Bioregions, ecosystem boundaries and limits of vulnerable marine areas.	Legal expert with international maritime/law of the sea and ocean governance/policy expertise. MSP expert. Marine science and environmental management.

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
	Limits of jurisdiction, rights & obligations	Collect & understand existing information & plans available for the planning area.	Familiarity with ocean governance arrangements. Maritime law of the sea. Knowledge of marine habitats and biodiversity and ability to interpret environmental data. Geography and maritime boundary delimitation. Marine users and marine resource management	Legal expert with international maritime/law of the sea expertise. Geography/spatial planning. Marine policy expertise with familiarity with regional ocean governance mechanisms. Maritime sector expertise (fisheries; shipping; petroleum; biodiversity & conservation).

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
	Future uses to include in MSP	Issue identification, spatial conflicts, options/alternatives, scenarios. Analyse current & future spatial/ temporal trends & requirements.	Scenario-based planning and analysis. Multi-use planning and conflict identification. GIS, spatial data interpretation and information technologies. Analysis of environmental conditions environmental analyses (e.g. oceanographers, ecologists, geologists, fishery scientists). Familiarity with regional ocean governance arrangements. Maritime law of the sea. Sectoral interests such as fisheries & maritime industries	Foresight planning and scenarios. Legal expert with international maritime/law of the sea expertise. Geography/spatial planning. Marine policy expertise with familiarity with regional ocean governance mechanisms. Maritime sector expertise (fisheries; shipping; petroleum; biodiversity & conservation). Marine science and environmental management.

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
Data Collection & Management	Availability of key data sets	Collecting, storing, & managing scientific data & information for the planning area.	Marine scientific research. Data interoperability. Analysis of environmental conditions environmental analyses (e.g. oceanographers, ecologists, geologists, fishery scientists). Research survey design and data-collection methods. Spatial data expertise and knowledge. Sectoral interests such as fisheries & maritime industries.	Maritime sector expertise (fisheries; shipping; petroleum; biodiversity & conservation). Marine science planning and coordination. Data sharing, cataloguing and management (including metadata standards). GIS specialist. Remote sensing expertise.
	Data management & mapping		Spatial-database architecture, infrastructure and management. Digital thinking, data modelers, specialists in data & information technologies. GIS data analysis and modelling. GIS end-user.	IT and database specialist. GIS specialist. Data cataloguing and management (including metadata standards). Remote sensing expertise.

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
	Science input	Developing marine research plans for the URT.	Planning and executing marine scientific research activities in the URT. ?Knowledge of marine systems and research disciplines. Knowledge of marine scientific data collection methods and instruments. Understanding the relevance, application and limitations of marine scientific data to MSP decision making. Ability to prioritize data sets for MSP over sectoral research interests	Research management and team leadership. Marine science planning and coordination. Marine scientific research expertise (in different disciplines).
Multi-objective Planning Process	Existing spatial planning processes & tools	Measures & alternatives to achieve planning objectives & visions.	Existing sectoral policies, activity planning, analysis of existing governance system, communication, facilitation, negotiation. Sustainability appraisal, legal & policy expertise, sectoral interests, social scientists, growth strategies & regeneration.	

Msp Framework Element		Msp Activities	Skills & Knowledge Required	Expertise Required
	Multi-use stakeholder engage-ment.	Identification of stakeholders, when & how to engage them.	Stakeholder analysis, stakeholder engage-ment. tools, facilita-tion, negotiation, communication. Social scien-tists, specialists in graphics & geographic informa-tion systems (GISs), communication experts.	

5.2.1. Policy and legal basis to support MSP implementation

For MSP to be effective and achieve its defined objectives, it should have a policy/legal basis. This institutionalizes the process, ensures that all parties are bound by a lawfully established plan and provides for consistency of plan implementation and revisions. That said, the precise basis for MSP varies from country to country and no model MSP implementation mechanism exists that would work for every country.

In some cases, plans are designed to be 'guiding', incorporating elements that are stipulated in existing policy or legal instruments. This, for example, is the approach taken in Seychelles. This often results in a plan being devised in parallel with, or even prior to, the development and enact-ment of a new law. In the absence of a dedicated law, a country might also find it useful to draft a policy document setting forth its vision for the ocean state and guiding principles for marine spatial planning. In other cases, plans are legally enforceable and the directions are binding: The United Kingdom, for example, opted to create new legislation to provide authority for MSP under a newly established Marine Management Organization, with the mandate to specifically develop marine spatial plans. A similar approach was taken in the 1970s in Australia when new legislation established the Great Barrier Reef Marine Park Authority. In both examples, legal status of MSP outputs is derived from the respective new legislation.

Box 2: South Africa MSP Legal Framework

To support implementation of its National Framework for Marine Spatial Planning (see Case Study 1 in Annex C), the Government of South Africa has enacted The Marine Spatial Planning Act, 2018[https://www.dffe.gov.za/sites/default/files/gazetted_notices/msp_developmentofmarinespatialplans_g42444gon647.pdf.] to provide the legal basis for MSP in South Africa. This brief Act (it includes only 15 sections) provides for inter alia,

- The broad principles and criteria to be followed for MSP;
- The process of planning to be followed by South Africa;
- The establishment of a comprehensive knowledge and information system to house information in order to develop marine area plans;
- The establishment of a legally constituted working group to oversee development of the MSP;
- Institutionalises stakeholder consultation as a core process in MSP; and
- The legal requirement for spatial plans to be reviewed every five years.

The Act does not replace existing, sector-specific legislation and mandates, but rather provides an overarching framework, under which other sectors should plan and operate.

Key findings

Absence of national-level MSP policy and legislation: The analysis presented in section 4.4 demonstrates that the URT already has a comprehensive policy framework, which provides clear guidance on the protection of marine ecosystems and the development and management of specific blue economy sectors. Similarly, both the URT Government and Revolutionary Government of Zanzibar have enacted comprehensive and, in most cases, complementary legal frameworks for the key blue economy sectors that are addressed in this report. Many of these legal instruments provide the legal basis for the establishment of spatial management tools (such as Marine Parks, Marine Reserves and Marine Conservation Areas).

This notwithstanding, despite the development of a national Blue Economy Policy by the Revolutionary Government of Zanzibar and the current draft Blue Economy Strategy being revised by the VPO, the URT currently has no national-level Ocean Governance Policy framework which is very important in framing the development of MSP in the EEZ and adjacent area. Similarly, there is no overarching legal instrument that addresses ocean affairs generally and MSP specifically in the EEZ and adjacent area, although it is considered that there are existing legal instruments that could be amended to provide for this. In addition, a number of specific gaps have been identified, and corresponding recommendations are provided, with respect to the governance of certain blue economy sectors.

RECOMMENDATION 4:

Establish a clear legal basis for MSP in the URT.

There is a need to ensure that any future MSP has a robust legal framework to support implementation. Whilst there is no requirement for MSP to sit within only one legal instrument, there is a need to ensure that the various implementation and enforcement mechanisms are available within the existing legal framework, and that any gaps and user conflicts are addressed at the outset.

RECOMMENDATION 5:

Prepare a National Ocean Governance Policy and Strategy to guide the development and implementation of the blue economy and MSP across the URT.

An important initial step for MSP development will be the setting of a Vision and Goals for marine spatial planning. As such, the URT should give consideration to the development of an MSP guiding framework for ocean governance/blue economy that explicitly addresses the implementation of MSP process in alignment with existing national arrangements. In addition such a policy could define the institutional and governance arrangements for the development of the URT's marine space especially in the EEZ waters, thereby providing a clear basis for the development of MSP in alignment with the UNEP Nairobi Convention Regional Seas Programme.have adjacent jurisdictions are somewhat ad-hoc and will likely not be robust enough for MSP. It will be critical for Mainland and Zanzibar to co-participate even in near-shore MSP processes to ensure alignment and mutual sharing of ideas on such issues.

SWOT analysis of existing policy and legal arrangements

The evaluation presented in Table 5.4 provides a detailed analysis of the strengths, weaknesses, opportunities, and threats (SWOT) of the current policy and legal arrangements. T This comprehensive assessment offers valuable insights into the existing framework, highlighting notable obstacles and potential advantages. By examining the SWOT factors, we can better understand the challenges and opportunities that lie ahead and develop strategies to overcome them.

Table 5.4: Strengths, Weaknesses, Opportunities and Threats (SWOT) highlights some of the key challenges and opportunities

STRENGTHS	WEAKNESSES
• A broad based policy and legal framework exists for most of the current blue economy sectors. • Generally these instruments provide the legal mechanisms with which to control certain activities. • A number of well-tested spatial management tools exist with a legal basis for their implementation and enforcement. • These can provide a sound basis for some aspects of marine zoning under a future MSP framework. • The legal frameworks that operate for Mainland Tanzania and Zanzibar are largely complementary.	• There is currently no National MSP-related Policy and legislation that applies to the marine space. • Some existing spatially defined management tools lack a clear legal basis in an existing legal instrument and are, therefore, unenforceable. • Some existing institutions have overlapping legal jurisdictions.
OPPORTUNITIES	**THREATS**
• To develop a national-level policy framework to define the vision, goals and objectives for the future development of the URT's marine space. • To clearly define the goals and purpose for MSP. • To enact legislative amendments to strengthen the existing legal framework for certain blue economy sectors.	• Lack of legal clarity over the mandates of key sectoral institutions vis-à-vis the planning for and management of coastal resources. • Inadequate implementation for some spatial management tools pertaining to some critical blue economy sectors.

5.3. DRIVERS AND GOALS

5.3.1. Understanding the Drivers for MSP

Key findings

Existence of commitment to Blue economy and MSP: The imperative to undertake a robust process of planning for the maritime waters of the URT may be broadly derived from the national development framework outlined in section 4.3 above. Both the Government of the URT and the Revolutionary Government of Zanzibar have identified the blue economy as a critical element of future development. As noted above, MSP is an explicit enabler for development of the blue economy.

There are key drivers that emanate from Tanzania's regional and continental commitments on Blue Economy and Marine Spatial Planning. The AMCEN Cairo Declaration of 2015 provides a clarion call for the AU member states to integrate Blue Economy and MSP into their respective national development plans. The AU Blue Economy Strategy of 2019, the AU Africa Integrated Maritime Strategy 2050, Lomé Charter for Maritime Security and the UNEP Nairobi Convention Ocean Governance Strategy are some of the key examples of the basis for Tanzania's drive towards Blue Economy and MSP processes. Zanzibar Vision 2050, Zanzibar Development Plan 2021 – 2026 and the Blue Economy Policy of 2022 also provide a strong basis or Zanzibar's ongoing Blue Economy and MSP dynamics, being implemented by MoBEF.

The primary driver for the development of a spatial management framework, however, comes from the Manifesto of the ruling party. Section 27 of the Manifesto of the Government of the URT states:

> *The Chama cha Mapinduzi recognizes the opportunities available in the blue water economy, including seas, rivers, and lakes as well as the resources in it. In taking advantage of these opportunities, over the next five years, the Chama cha Mapinduzi will direct the Government to do the following:*
>
> a. Strengthen institutional frameworks for coordinating and overseeing the development of blue water resources; and
> b. Develop a strategy that will enable the Nation to benefit from the water resources economy.

The Manifesto also states that the government will strengthen the fishing industry through, inter alia, "strengthening of 18 Marine Protected Areas and Reservoir Areas to ensure that damaged fish breeding grounds and pastures are restored to their original condition."

The recently released National Environmental Master Plan for Strategic Intervention (2022-2032) also make specific reference to the need for MSP. The plan includes, as one of its strategic goals "*Ensure the sustainable management and conservation of coastal and marine ecosystems*." Included in the interventions designed to achieve this goal as the target to "*Develop and implement localised Marine Spatial plans by 2032*" (Office of the Vice President, 2022).

Similarly, Section 162 of the Manifesto of the Revolutionary Government of Zanzibar notes that:

Zanzibar is surrounded by the Indian Ocean and is close to the coast of eastern Africa, so it has great opportunities to use its territorial sea, its geographical position, and the resources of the sea to accelerate its economic development. To better coordinate the use of the sea and its resources in building the Blue Economy, CCM will direct Revolutionary Government of Zanzibar do the following things:

i. Prepare a specific plan for the use of marine areas (Marine Spatial Plan) and start its implementation.

ii. Building a strategic infrastructure to make Zanzibar a special centre for trade, and transportation (maritime transportation).

iii. To be a regional centre for fishing and marine products.

iv. Using marine products including fish, seaweed, and salt as industrial development catalyst.

v. Establishing a better institutional system to coordinate economic development of blue resources.

vi. Using the coastal areas and beaches for:

a. Exploration and extraction of oil and natural gas.

b. To further develop sea tourism, beaches, etc.

In addition to these explicit manifesto pledges, a broad range of other drivers can also be identified which support, or even necessitate, the development of a MSP framework including, but not necessarily limited to:

i. Existing conflicts between seaweed farmers and other marine users (e.g. artisanal fishing and coastal tourism);

ii. The development of new maritime infrastructure that will result in changes to existing sea-used patterns;

iii. The increasing number of NGO-supported site-specific conservation planning initiatives that are currently undertaken in the absence of an overall planning framework;

iv. Increasing bilateral support, from international development partners, to develop the URT's blue economy that have an expectation that MSP will be one of the enablers to support blue growth.

Thus it can clearly be seen that the drivers for MSP derive clearly from the URT's strategic national development priorities and the explicit understanding of the importance of marine ecosystem services in supporting achievement to those priorities.

5.3.2. Goals and objectives for MSP in the URT

The most effective spatial plans are those developed in response to clearly stated goals and objectives. During the MSP process, these goals and objectives will give rise to narrower and more specific outcomes and targets that will reflect the different types of zones adopted for the URT's marine space and the management objectives for each type of zone.

Key findings

Need for clear MSP goals and Ocean governance: Notwithstanding the broad policy objectives outlined above, there needs to be clearly articulated goals for MSP across the URT and, a joint development of a dedicated national Ocean Governance Policy with MSP to provide a clear policy guidance on the matter of ocean affairs/ocean governance. For example, Zanzibar, has clearly articulated a Vision and a strategy for the blue economy and has clearly identified MSP as one tool to achieve the strategic objectives.

RECOMMENDATION 6:

Define and prioritize goals and objectives for MSP through a collaborative 'Future Scenario Planning' process.

As a precursor to the commencement of MSP, the URT should bring together relevant stakeholders to explore a range of possible future scenarios for the development of the URT's maritime space and to determine, if possible, the preferred development path (the Vision) and the desired development Goals and Objectives for the URT's marine space. Once defined, this Vision will inform the marine spatial planning activity which will, *inter alia*, define a series of critical paths towards the development of a planning framework that will support realisation of the preferred scenario. Moreover, the outcome of this process can also be used to inform the development of the national policy framework as outlined in *Recommendation 4* above.

Scenario-based planning

For any maritime area, there will be a number of possible alternative futures. Each of these will reflect different sectoral priorities and desired future states. An effective way to achieve this is through the application of 'scenarios', that allow users to devise and analyse a range of plausible futures, then filter strategic decisions through these scenarios to ensure that policy decision achieve the desired development objectives (McGowan et al. 2019).

Scenarios illustrate plausible futures, usually extrapolated from current trends or based on radical or unexpected (but plausible) events. They provide policy makers with a tool for strategic planning, assessing the robustness of strategies and policy approaches in different situations. Scenario-based planning is therefore increasingly being used to define future goals and objectives for MSP development (see Figure 5.2). Whether formal scenario-based planning and trade-off analysis have been used previously in the URT for planning is unclear but it is considered unlikely that it has been used in a rigorous institutional setting. In the context of the URT, scenario-based planning is, therefore, a useful tool for analysing the potential regulatory opportunities and how different stakeholders may react to planning decisions, ensuring there are more resilient responses to future uncertainties.

5.4. GEOGRAPHIC BOUNDARIES AND SCOPE

5.4.1. Geographic boundaries and planning areas

Key findings

Well-defined boundaries for planning area: The geographic scope for MSP in the URT should extend from the coastline to the outer limits of the EEZ; including all of the URT's internal waters, the territorial sea, and the EEZ, as declared under the Territorial Sea and Exclusive Economic Zone Act, 1989. Furthermore, given that the Government is awaiting the outcome of recommendations on its application for an extension to its continental shelf, arguably, any future MSP could also include areas of continental shelf beyond the limits of the EEZ.

Recognising the potential impact of land-based coastal developments on the marine environment, such as in the ports, mining and tourism sectors, there could also be a case to include the littoral zone in MSP.

CONSERVATION

- The mangrove coverage will increase due to reforestation, prohibition of new shrimp aquaculture developments in this ecosystem and improved surveillance
- The protected areas of "Mar Tropical de Grau and "Manglares Delta del Rio Tumbes - Bahla
- Puerto Pizarro will be established
- Oil and gas activities will not be allowed within the protected areas

FISHERIES

- Industrial shrimp fisheries will only be allowed within their original established zone Fish stocks will recover due to compliance to regulations and new protected areas acting as fish reproduction areas Joint management of shared species and quotas are established within the limits of maximum sustainable yield (MSY).
- Conflicts related to industrial fleet operating inside artisanal zones and foreign boats operating illegally will be overcome due to stronger surveillance
- Development and improvement of the most efficient and environmental-friendly fishing technologies will be encouraged

AQUACULTURE

- Prohibition of new shrimp aquaculture development in mangrove areas
- Multi-trophic offshore aquaculture will be allowed in protected areas when it does not jeopardise their ecological objectives
- Different types of offshore aquaculture will be established
- Offshore aquaculture will not be allowed close to shipping routes and inside port development
- There will be multi-uses related to offshore aquaculture (such as tourism)
- Management protocols will be improved, which will reduce environmental impacts

TOURISM

- Improved environmental practices, quality standards and investments in infrastructure will add value to the sector in general, including nature-based and cultural tourism, attracting more national and foreign visitors

OIL AND GAS

- New projects of exploration and exploitation of oil and gas will not be allowed in protected
- areas and reserved areas for artisanal fisheries in order to reduce conflicts with conservation
- Artisanal fisheries and tourism
- Some decommissioned platforms will be used by other sectors (such as tourism or aquaculture). The decision will be taken on a case-by-case basis according to different aspects environmental (evaluation of positive and negative impacts of removing or maintaining the infrastructure), technical (physical condition of the infrastructures, economic (viability of use by another sector), and legal (regulations and competences in relation to the infrastructure)

MARITIME TRANSPORT & PORTS

- Shipping will continue increasing due to growing demand for commodities (exportation) and goods (importation); however, boats will have reduced speed limit to avoid collision with cetaceans, while shipping lines will be rerouted to not pass through protected areas
- Prohibition of the dredging deposit site inside the 1 NM Reserve Area for Species Reproduction in Ecuador
- Prohibition of discharge of dredging material without treatment
- Green port strategies will be in place
- A new port will be developed in Zorritos in order to improve cabotage in Peru

Approach to defining planning areas

Alternatively, MSP might need to be linked to other sectoral or district land-use planning frameworks. These will be decisions to be addressed by the appropriate authorities as MSP gets under way in the URT. An outstanding issue that should be resolved is whether MSP should include the area of extended continental shelf that is the subject of the UN CLCS submission. Arguable, once the URT's application for an area of extended continental shelf has been concluded, those resources that are considered as part of the natural resources of the URT's continental shelf, will also fall under the exclusive jurisdiction of the URT. As such, the potential exists for the development of new activities beyond the EEZ.

RECOMMENDATION 7:

Prepare a systematic framework of planning areas that recognises: (a) the different levels of jurisdiction involved in planning and management of the URT's maritime space: and (b) the level of knowledge and understanding available to support planning and decision making across different parts of the URT's maritime space.

Whilst there is a need to assess activities throughout the entire EEZ, it is clear that most activities, and most knowledge, is focussed in the relatively narrow coastal zone. Inadequate information available for offshore waters makes detailed planning more difficult, and it is clear that those areas that are subject to greater activity, and therefore conflict, warrant greater scrutiny. Any MSP initiative should therefore be undertaken at different scales. This will necessitate to development of a network of 'planning areas' at different levels that reflects the ecological and socio-economic dependencies that exist in different areas of the URT.

RECOMMENDATION 8:

Undertake a prioritisation of planning areas such that the initial focus for MSP should be on those coastal waters that support the most activities and have the most user conflicts.

It will not be possible to undertake MSP for the entire area of the URT's marine space at the same time. An approach that prioritises and stages different areas is suggested as a way to effectively manage this issue. The focus should be on those areas with the highest levels of human activity and also where information is readily available to support MSP. In this way valuable experience can be gained through initial pilot projects that will assist with capacity building that can then be more broadly applied to other areas of the URT's marine space.

It is not appropriate for this study to propose or prescribe actual planning areas for MSP. That will need to be assessed and decided on as part of the MSP process itself. However, it is worth giving some consideration to how the definition of planning areas could be undertaken. As such this report suggests an indicative conceptual framework to assist the process of defining planning areas for the purpose of MSP.

i. **Scope of analysis needs to be broader than scope of actual MSP planning in a given area:**

Any defined marine planning area is typically affected by human activities that take place beyond the defined boundaries of the planning area. This fact illustrates the importance of drawing the boundaries of analysis more broadly than the boundaries of management. This also supports Recommendation #2 herein, which highlights the importance of Mainland and Zanzibar participating in each other's near-shore MSP, especially in adjacent marine areas, since there are always wider connectivities and impacts from those neighbouring areas to be taken into consideration.

ii. **Resist the temptation to undertake MSP according to administrative boundaries:**

It can be tempting to take administrative boundaries (regions, districts, villages/shehias) as MSP planning units as it can simplify logistics and reduce costs. But MSP should be driven by many other more important factors including patterns of resource-use, oceanography and hydrography, distribution of habitats and species, and so on. It is important that spatial planning is driven by these and not by arbitrary institutional paradigms.

This implies that MSP analysis and planning processes should ideally start at the broadest possible scale (i.e. all URT maritime waters), in order to identify and analyse broader scale influences and uses of marine space. Thereafter, the process can systematically zoom in to increasingly finer bio-physical, ecological or management scales as appropriate. Such an approach is illustrated in Figure 5.2. Whilst it is beyond the scope of this analysis to prescribe specific planning areas, Table 5.5 below illustrates a possible framework that the Government could consider. This approach recognises the important ecological connectivities that exist throughout the URT's maritime waters.

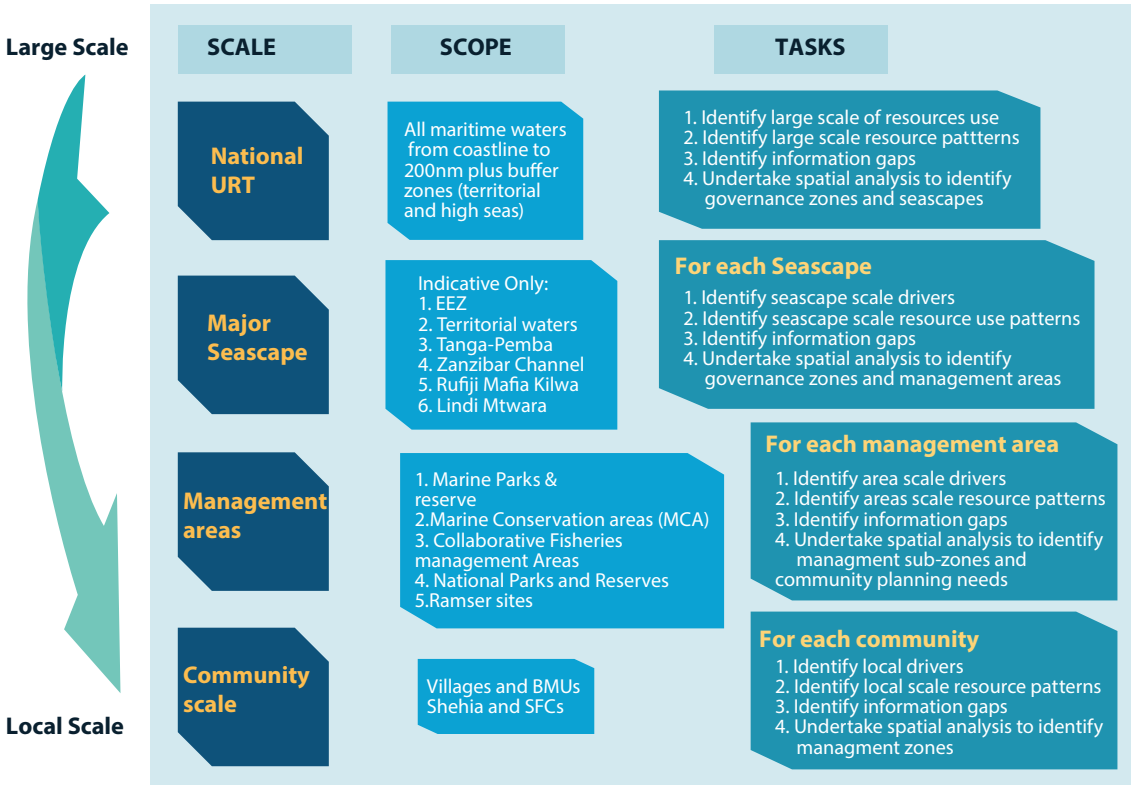


Figure 5.2: Schematic illustration of scaled approach to MSP

Table 5.5: Summary of possible seascapes for level 2 planning for indicative purpose only

SEASCAPES	DESCRIPTION
Tanga-Pemba Includes: Pemba Island Pemba Channel Mkinga District Tanga City Muheza District	• Tanga Coelacanth Marine Park Comprising part of a transboundary area with Kenya to the north, the seascape is divided down the centre by the relatively deep (800 m) Pemba Channel. Upwelling to the northern end of the channel generates nutrients for rich pelagic fisheries. On either side are extensive coral reef habitats. • The entire west coast of Pemba Island is included in the 825 km² Pemba Channel Conservation Area (PECCA). Within PECCA lies Misali Island, previously gazetted as a small no-take marine reserve. • The Mainland side includes Tanga Coelacanth Marine Park (TACMP) covering the 522 km², and 4 small marine reserves.
Zanzibar Channel Includes: Pangani District Unguja Island. Bagamoyo District Dar es Salaam	• The hydrography of the relatively shallow (~50 m) Zanzibar Channel, receiving substantial nutrient inputs from the Pangani, Wami and Ruvu Rivers, creates a mostly soft sediment marine area noted for productive small pelagic fisheries. • The nutrient-poor Zanzibar side of the channel has a complex of small islands and patch reefs, and the east coast of Unguja Island is bounded by fringing reef. Unguja is almost entirely surrounded by marine conservation areas including: Tumbatu (TUMCA) 163 km²; Changu-Bawe (CHABAMCA) 118 km2; Mnemba Island-Chwaka Bay (MIMCA) 337 km²; and Menai Bay (MBCA) 717 km² . Within MBCA lies Chumbe Island with a no-take reserve managed through a tourism private sector concession. The Mainland side includes Sadaani National Park marine area and 7 small islands off Dar es Salaam gazetted as marine reserves.
Rufiji-Mafia-Kilwa Includes: Mkuranga District Kibiti District Rufiji Delta Mafia Island Mafia Island MP N Kilwa & Songosongo	• A globally important seascape containing a variety of geomorphological features with high habitat complexity and the highest species diversity in Tanzanian marine waters. Dominated by the outflow of the Rufiji Delta, the area exhibits high fisheries production and related marine megafauna. The more nutrient-scarce east coast of Mafia Island has various reef habitats. An existing Ramsar site covers 4,850 km² and an application is in process for Man & Biosphere (MAB) Reserve designation. The area includes Mafia Island Marine Park (522 km²) and 3 small marine reserves. Waters adjacent to Mkuranga District to the north, also under the hydrological influence of the Rufiji Delta, can also be considered part of this area.

SEASCAPES	DESCRIPTION
Mtwara/Lindi Districts. Mainland	• The area includes the Mnazi Bay-Ruvuma Estuary Marine Park (650km2) adjacent to the Mozambique border. The area has a mosaic of mangrove and coral reef habitats with similar species richness to Rufiji-Mafia-Kilwa, and is also rich in pelagic fisheries having a very narrow continental shelf. As such, the area has significant biodiversity and transboundary importance.
Territorial Sea Includes: Latham Island	• Extending 12 nm out from the baseline, the territorial sea encompasses an area of ~16,000 km². It is important for better equipped artisanal fishers targeting pelagic resources; territorial waters being closed to industrial vessels. • Located ~40 nm offshore from Kigamboni District and 35 nm from Kizimkazi (Zanzibar) Latham Island is a small oceanic atoll island of less than 3 ha, but a regionally important breeding site for oceanic seabirds. Surrounded by depths of up to 2000 m, upwelling around the island make it important for medium and large pelagics.
EEZ	• Extending from the 12 nm limit of the territorial sea out to 200 nm from the baseline, the EEZ encompasses a marine area of about 223 000 km². EEZ waters are largely unresearched and undocumented but are important for offshore industrial fishing for tuna and tuna-like species, which are regulated by the Deep Sea Fishing Authority (DSFA), a URT level institution.

5.4.2. Jurisdictional limits

Broadly speaking, the limits of a State's jurisdiction to regulate and manage activities undertaken in its marine space are defined under UNCLOS, and are specific to the maritime zone in which the activity takes place. The further one moves away from the coastline, the less authority a coastal State has to regulate activities. In the specific case of the extended continental shelf, whilst the URT may exercise sovereign rights over the continental shelf, for the purposes of exploring and exploiting its natural resources, these rights do not extend to or affect the legal status of the super-adjacent waters (i.e. the overlying water column).

Moreover, in addition to the organs of central government, the URT has a long history of devolved decision-making, particularly with regard to the management of natural resources, as reflected in the well-defined system of local government authorities (LGA). Among other functions, LGAs are responsible for licensing and management of artisanal fishing activities, and are also involved in overall management of marine parks/reserves and marine conservation areas. These jurisdictional limitations have implications for the scope, content and application of any spatial management framework and will, therefore, need to be taken account of in any future MSP framework and that all parties fully understand the extent of their rights and obligations under the subsequent planning framework.

Key findings

Need for planning for common and shared resources in the EEZ and beyond: Whilst the URT Government exercises sovereign rights over the resources of the EEZ, Mainland Tanzania and Zanzibar jointly manage a range of activities in their respective sectoral jurisdictions (Environ-

RECOMMENDATION 9:

Undertake a review of the Territorial Sea and Exclusive Economic Zone Act as part of the MSP process.

Despite having sovereign rights over the seabed resources of the EEZ, and having submitted information on the limits of the continental shelf beyond 200 nm, the URT has not specifically legislated the continental shelf or its exploitation, in anticipation of the outcome of the application process at the CLCS. Notwithstanding the current status, the Government of the URT should start preparing the process of amending the Territorial Sea and Exclusive Economic Zone Act to reflect the URT's authority over the seabed resources of the extended continental shelf beyond the 200 nm limits of the EEZ.

Define jurisdictional boundaries between Local Government Authorities and Central Government: The current governance arrangements between the national and local government entities is also a matter that should be explored since LGAs do have some responsibilities with respect to environmental services connected to the economic, social and environmental activities of the near-shore fisheries and aquaculture and other marine resource-related activities, which have the potential to significantly influence the quality of the marine environment. Therefore needs to be a practical agreement over roles and responsibilities, vis-à-vis MSP, between national government agencies and their LGA counterparts.

ment, Fisheries, Aquaculture, Tourism, Maritime transport, Energy, Oil and Gas, etc.). In the specific case of the extended continental shelf, whilst the URT may exercise sovereign rights over the continental shelf, for the purposes of exploring and exploiting its natural resources, these rights do not extend to or affect the legal status of the super-adjacent waters (i.e. the overlying water column). In this regard, the URT needs to consider starting the subsequent process of legislation for the utilization of the continental shelf, or the exploitation of its natural resources, in compliance with the UNCLOS.

RECOMMENDATION 10:

Enhance Inter-sectoral collaboration with respect to internal waters and determine the extent of MSP for local-level spatial plans.

It must be recognised that, for the purposes of MSP in inshore and coastal waters, there are multiple sectoral institutional mandates, including LGAs, that will all play a critical role in MSP alongside communities themselves. Many activities undertaken in near-shore and coastal waters within Mainland Tanzania and Zanzibar are conducted by several actors such as Environment, Fisheries, Aquaculture, Tourism, Maritime Transport, Energy, Oil and Gas, and local government authorities' areas of jurisdiction. As such, there is a need to clarify and reflect in any future MSP initiative, the areas of jurisdiction and the relevant functions, powers and duties in regard to activities in intertidal and near-shore marine areas.

5.4.3. Future uses to be included in MSP

The development of a sustainable blue economy provides opportunities, not only to further develop existing activities and sectors, but to explore new ocean-based opportunities. If the URT is to fully embrace the concept of the blue economy, there is a need to undertake a broad assessment of the future potential development opportunities that the blue economy presents (for example marine renewable energy and offshore aquaculture) with a view to ensuring that any MSP initiative can take account of, and remain adaptive to, new and emerging uses of the URT's marine space that so far may not have been anticipated.

RECOMMENDATION 11:

Define the scope of existing and future uses to be included in MSP.

Through existing and ongoing preparation of their respective blue economy policies, the URT Government and the Revolutionary Government of Zanzibar have begun to identify priorities for blue economy development.

It is recommended such process be further elaborated, during MSP preparation, so as to identify the broadest possible development opportunities and to plan for, and catalyse, their potential development through MSP.

Key findings

Need for Planning for existing and future uses of URT's marine space with consideration of SEA: Notwithstanding that Mainland Tanzania and Zanzibar have respectively identified future priorities for development of the blue economy, the full scope of activities that either are, or are planned to be undertaken, must be addressed in the MSP. As such, the following activities have been identified as potentially being 'in-scope' for the future development of the URT's marine space and the MSP framework. This is not to suggest that all, or even any, of these activities and uses will be pursued, but rather that planning for the future development of the URT should acknowledge these as potential future uses. It should also be recognised that the priorities afforded to each of the following will differ between Mainland Tanzania and Zanzibar.

i. Marine biodiversity conservation and climate change adaptation
ii. Marine capture fisheries and aquaculture including seaweed cultivation
iii. Ports and shipping
iv. Offshore petroleum exploration and production
v. Coastal and marine tourism
vi. Subsea cables – both electric transmission and telecommunications
vii. Coastal salt production
viii. Monitoring, control and surveillance

Related to the above, given the previous experience with ICZM, and the obvious linkages between ICZM and MSP, there is also a need to include spatial planning of some coastal land-based activities that impact the near-shore marine environment, as part of MSP. An example might be farming practices in the Rufiji Delta, or tourism activities along the Zanzibar coast. As such, MSP does not necessarily end at the high tide mark or the beach. Part of the MSP process will be to identify critical land-based activities affecting MSP and to consider how they can be

included in MSP, or otherwise how to address them through related land-based or sectoral planning frameworks.

To this end, consideration should be given to undertaking a Strategic Environmental Assessment (SEA) as a precursor to MSP. In particular such a SEA should assess the implications of projected future increases in blue economy investment opportunities especially on the integrated shipping-fisheries interactions with other users of the marine environment. Whilst it is recog-

RECOMMENDATION 12:

Prepare a Strategic Environmental Assessment (SEA) for MSP.

It is noted that a number of integrated port, cold storage and processing plants projects are underway or planned both on the Mainland and in Zanzibar. These value-addition developments bringing in maritime and fisheries transformation drive, and which are part of the Blue Economy agenda for Tanzania, are likely to result in significant changes to local areal planning comprising fisheries, shipping, aquaculture, tourism, oil and gas exploration, etc. These will in effect transform movement in and around the URT's internal and coastal waters. This, coupled with the offshore petroleum activities and the Government's interest in further developing offshore fisheries, there is considerable scope for both user conflict and cumulative impacts on the marine environment.

nised that SEAs have been carried out for individual sectors, to date, no comprehensive SEA assessment of MSP has been conducted for the broad range of activities undertaken across the entirety of URT's maritime waters or their individual and cumulative impacts. Such an assessment could be achieved through the application of strategic environmental assessment tools. This SEA process should be linked with the scenario-based planning exercise outlined in Recommendation 6 above. These two processes, when combined, will then provide some overarching parameters for MSP, including guiding principles for the MSP initiative.

It should be noted that there is no need to wait until the SEA has been completed to embark on the MSP initiative. The two activities can be undertaken concurrently given the timeframes involved in MSP and that MSP is an iterative process.

RECOMMENDATION 13:

Undertake an additional scoping study analysis that assesses the application of MSP to the freshwater bodies of the URT.

The definition of the blue economy for the URT includes not only marine waters but also the large freshwater bodies, that support 85% of Mainland Tanzania's capture fish production. Further discussions are required to determine future MSP project to be extended to cover inland freshwater bodies. This means that a further legal, policy and institutional analysis may be required to cover those aspects that are not included in this report, since many of those freshwater bodies are the subject of complex multilateral agreements and administrative arrangements.

5.4.4. Application of MSP to Freshwater Bodies

Key findings

Need for MSP in fresh water bodies: As a result of the stakeholder consultations undertaken as part of this analysis, it has been identified that, in line with the working definition of the blue economy developed by the African Union, there is a general consensus that any future MSP project should include inland freshwater bodies.

Broadly speaking, the tools for MSP could be applied to any water body. However, there are likely to be differences in the implementation of MSP for marine waters as compared with freshwater bodies, due to the different legal frameworks that govern these two resource types. Since this issue was not included in the ToR for the project, but was only raised during the data gathering phase, it has not been possible to include those institutional and legal frameworks that apply to fresh water bodies. Nonetheless, it is recommended that further analysis be undertaken to ensure that freshwater bodies are comprehensively included in the final MSP framework to be developed by the URT.

5.5. DATA COLLECTION & MANAGEMENT

A crucial step in the MSP process is gathering existing knowledge and data concerning the current conditions of the marine environment and human interactions and impacts. The type of data to be collated and mapped will need to be, as far as possible, up-to-date, objective, reliable, relevant and comparable. Over the course of any MSP initiative, data and information will need to be collected from a wide range of sources, including scientific literature, expert scientific opinion or advice, international and national sources, websites, local and traditional knowledge and direct field measurements. Accessing information may require certain online processes, protocols and agreements. It is useful, during this step, to focus upon gathering spatial data (World Bank, 2022a).

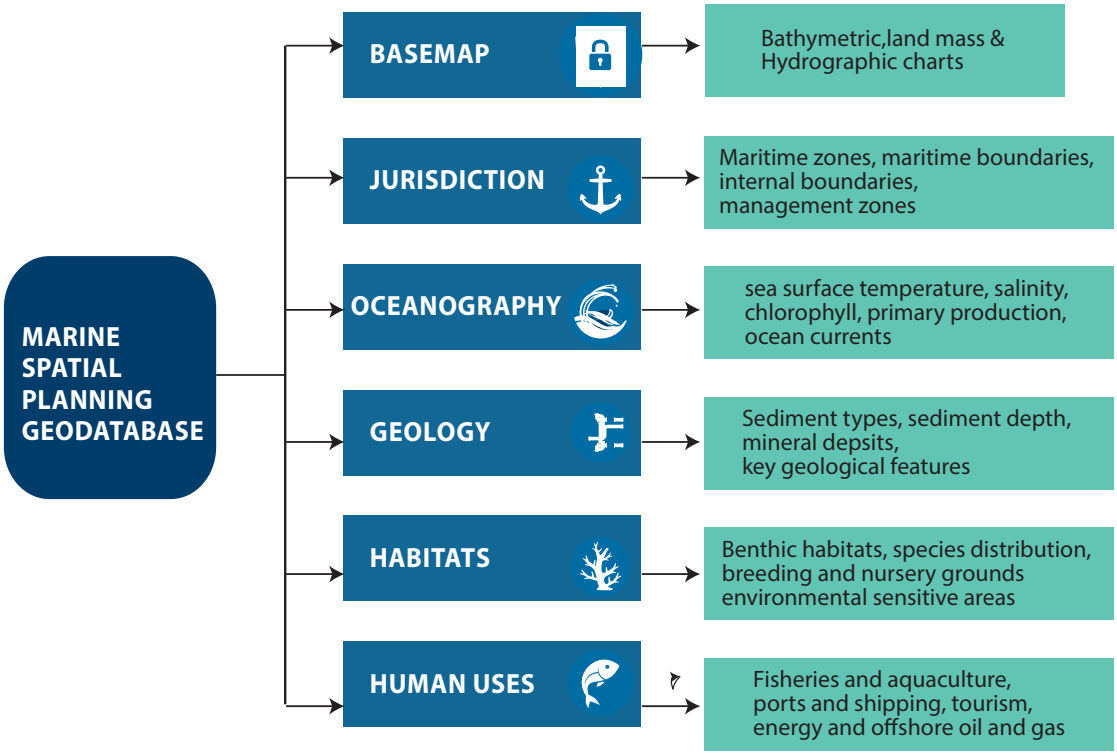


Figure 5.3: Suggested data schema for the MSP framework

5.5.1. Availability of key marine spatial datasets

Since MSP is a continuous process, a fundamental goal for developing any MSP project should be to begin with the data that is available and to then increase the complexity and accuracy of the data as requirements become better understood. Typically, for MSP, data is divided thematically, such as illustrated in Annex F. Since there is no universally applied data schema for MSP, it is necessary to define a schema that is most appropriate for the specific MSP process being undertaken. Figure 22 below illustrates a suggested schema of themes and data sets that are considered relevant for the initial stages of the MSP process.

Key findings

Data gaps, incompatibility and inadequate quality: As part of this assignment, the project team undertook an initial audit of the availability of key data sets in Mainland Tanzania and Zanzibar. The results of this are summarised in Annex G. It should be stressed that this initial audit is a

RECOMMENDATION 14:

Collate and map existing baseline data and assess future data needs and gaps to support MSP.

Mapping the marine resources and uses of an area by consolidating existing data and information allows planners and decision-makers to consider the cumulative effect of maritime industries on key features that may be particularly sensitive. In so doing, it provides a spatial understanding of conflicts and potential compatibilities of operations with marine ecosystems and their values.

RECOMMENDATION 15:

Develop a comprehensive data capture/procurement programme.

Ultimately, the outcome from Recommendation 14 should lead to the identification and prioritisation of gaps and data needs that will inform a future process to capture new data. To this end, the following critical activities should be undertaken:

Identify, compile, merge and verify all existing data sets relating to the distribution of key marine habitats and species distribution/abundance

i. Identify, compile, merge and verify all existing data sets relating to the distribution and abundance of key commercial fish stocks – both inshore and offshore
ii. Develop a detailed seabed habitat map of the entire coast and EEZ
iii. Prepare a definitive and authoritative dataset of all existing MPAs boundaries and spatial planning tools (including CFMAs, CMA Zoning etc.)
iv. Identify and map all traditional fishing grounds
v. Identify and map all coastal tourism use zones
vi. Develop a representative spatial data set of international shipping movements throughout the URT's internal waters, territorial sea and EEZ (AIS data)

starting point and a more comprehensive survey of existing data and data needs will be a fundamental requirement of any future MSP initiative. Nevertheless, the results of this preliminary audit are encouraging. Overall, it can be seen that, at a broad level, marine spatial datasets already exist for many of the data themes identified as necessary to support MSP. These will form a good basis with which to commence MSP.

However, it is also noted that the existing data is widely dispersed across a range of different agencies and that many core datasets (for example MPAs) do not exist in a single consolidated form, but rather are fragmented across different agencies with different degrees of accuracy. As a result, these data are often recreated for the purpose of specific projects which is both costly in terms of time and effort and may result in errors in the data being transposed.

Despite the acknowledgement that some marine spatial datasets already exist, some critical data gaps have also been identified that should be filled to comprehensively undertake MSP at an EEZ-wide scale. Furthermore, the survey has identified numerous issues with the fidelity and quality of existing datasets that will require resolving prior to undertaking MSP. In this regard, it is recommended that a number of steps be taken now focused on development of an appropriate spatial information framework to support MSP.

Whilst it is considered that sufficient information exists to inform the initial stages of MSP, the information base will need to be improved in terms of accuracy and coverage. As such, as part of any future MSP initiative, a critical need will be to prepare a comprehensive marine spatial data needs assessment and gap analysis including, but not necessarily limited to:

i. Define critical data needs for MSP based on international experience and the MSP Framework
ii. Undertake a comprehensive audit of existing marine spatial data sets held across the URT including maritime zones.
iii. Identify critical data needs and gaps

5.5.2. Data management and access

Data availability and data accessibility are *"two sides of the same coin"* and whilst much data is available, not all is accessible in a form that would support MSP. Existing spatial data is often fragmented and distributed across multiple data holders. Furthermore, much of the data exists in formats that are inaccessible to decision makers and data holders are often reluctant to share data (although it is acknowledged that data was provided to the project team during the preparation of this report). Experience from overseas indicates that when this happens, agencies often create their own mechanisms for accessing data. This leads to duplication of effort, non-standardisation of data and hampers data sharing. Multi-agency approaches to addressing data inaccessibility also represents a significant waste of resources. A far better approach would be to establish a single, centrally managed data clearing house and portal.

Key findings

Absence of centralized spatial data clearing mechanism: Notwithstanding the availability of the above-mentioned datasets, it is noted that the URT does not currently possess a centralised spatial data clearing mechanism, that facilitates access to marine spatial data. Numerous institutions hold spatial data and a large number of NGOs (in particular) are involved in research and conservation projects that collect data. However, very little data appears to be openly shared. Every effort should therefore be made to improve data sharing among existing data holders.

Several attempts have been made to address the issue of spatial data sharing and management across the URT (Lubida, 2019). For example:

i. With support from the French National Institute of Geographical and Forestry Information (IGN FI), the Integrated Land Management Information System (ILMIS)[https://ilmis.lands.go.tz/en] project was established to replace the previous systems and addressing functions of the land sector, delivering tools for handling land management functions such as Cadastral Surveying, land delivery services and Town Planning. The system was designed to harmonize and share land data and also to track efficiency and transparency in delivering land administration services. The project included the conversion of 6.5 million pages of paper documents, 18,000 maps and their resulting vectorized parcels integrated with 50,000 titles.

ii. With support from the Finnish Government and coordinated by the Finnish Environment Institute (SYKE) the National Spatial Data Infrastructure for Integrated Coastal and Marine Spatial Planning Project[https://www.syke.fi/en-US/Research__Development/Research_and_development_projects/Projects/National_Spatial_Data_Infrastructure_for_Integrated_Coastal_and_Marine_Spatial_Planning_ZANSDI] was established to support the Zanzibar Lands Commission to improve utilization of geospatial information in spatial planning and management in Zanzibar. The project supported capacity building in Zanzibar to use National Spatial Data Infrastructure (NSDI) effectively in integrated coastal and marine spatial planning.

iii. With support from the Norwegian Environmental Council (NEA), the Tanzania Environmental Information Network (EIN) was a project to support the National Environmental Management Council (NEMC) to establish a data foundation needed to support country-level sustainable development in the area of environmental aspects. The project is an initiative by African EIN to strengthen the capacity of African countries to use good quality information to guide informed decisions and manage assets on sustainable basis.

Despite the relevance of these initiatives, none of them have left any lasting infrastructure legacy, and no Spatial Data Infrastructure (SDI) currently exists within the URT. That notwithstanding, some agencies do have significant existing spatial data analysis and management capabilities. In Mainland Tanzania, the greatest capacity is at the Ministry of Lands, Housing and Human Settlement Development's Survey and Mapping Department. It is also noted that there are currently several open source data portals for spatial data in the URT:

Tanzania Sensitivity Atlas (TanSea): [https://ims.udsm.ac.tz/tansea/] TanSea was developed during 2010-13 as the first version of the GIS-based sensitivity mapping in Tanzania marine waters and is hosted by IMS, which is also the Tanzania National Oceanographic Data Centre (TzNODC). Development of TanSea was driven by the need to develop oil-spill contingency plans as a precursor to oil and gas exploration in coastal and marine areas, and was initially funded by a consortium of international oil companies (Statoil, BG and Petrobras) as a public-access platform. TanSea currently does not currently support real-time or user-filtered data visualisation, or data downloading, what is available on the portal is only a flattened map showing all existing data layers. Data is however available from IMS on request.

Zanzibar Social Environmental Atlas for Coastal and Marine Areas (ZanSea): [https://www.suza.ac.tz/zansea-website/index.php.] ZanSea was developed as part of the Spatial Data Infrastructure (SDI) under the Zanzibar Social and Environmental Atlas project, supported by the Norwegian state oil company (formerly Statoil, now Equinor). ZanSea is managed by the State

University of Zanzibar (SUZA) and was functional from 2015-19 via a GeoNode hosted on servers in France. At the time of writing, the system was not operational and underlying data was not available at SUZA.

Both of these portals could be developed further to provide a national marine spatial data visualisation and sharing capability that acts as a single repository for all URT's marine spatial data. More broadly, a number of other platforms may be worth exploring as options to host national marine spatial data sets:

The African Marine Atlas: [http://www.africanmarineatlas.org.] The African Marine Atlas developed by the Ocean Data and Information Network for Africa (ODINAFRICA) is hosted by the UNESCO-IOC Project Office for International Oceanographic Data and Information Exchange (IODE) in Ostend, Belgium. It is described as being able to provide substantial maps, images, data and information to coastal resource managers, planners and decision-makers from various administrative institutions and specialized agencies in Africa. However, at this stage it is not clear what, if any, data the system supports. Given the support being provided for this platform, however, it should be explored further as a possible tool to support MSP.

Nairobi Convention Clearinghouse and Information Sharing System: [http://web.unep.org/nairobiconvention/nairobi-convention-clearinghouse-and-information-sharing-system] Hosted by the Secretariat of the Nairobi Convention/UNEP to which the URT is a party. The stated objectives of this initiative are: (1) development of a comprehensive national data inventory with common standards and built-in functions; (2) provision of basic, selected and/or critical datasets by participating institutions; and (3) internet data dissemination and automation of the data to information and information to knowledge process.

GeoNode: GeoNode is an open source, geospatial content management system, a platform for the management and publication of geospatial data. A key feature of GeoNode is that it includes a web-based interface to allow simple discovery and management of spatial data and metadata as well as interactive mapping. The relationships between data, metadata and documents are maintained to ensure that it is easy for end users to discover and access data resources.

GeoNode is a highly effective tool for sharing and viewing data from a wide range of sources since it allows registered users for easily upload geospatial data in a range of different formats. Datasets in the system can be shared publicly or restricted to allow access to only specific users. Social features like user profiles and commenting and rating systems allow for the development of communities around each platform to facilitate the use, management, and quality control of the data the GeoNode instance contains.

GeoNode has been widely used in the WIO region as a platform to collate, manage and share data relating to the marine environment. Notable examples include:

i. **Marine Spatial Atlas for the Western Indian Ocean (MASPIO Geo-Portal):** [http://maspawio.net.] hosted by CORDIO (EA) and IUCN which provides access to a broad range of marine spatial data with coverage across the WIO.

ii. **Integrated Coastal Biodiversity Information Management System (ICBIMS):** [http://icbims.kmfri.co.ke.] This system is hosted by Kenya Marine and Fisheries Research Institute (KEMFRI) in Mombasa. At this stage, ICBIMS only supports spatial data and provides a data visualisation tool, although only one dataset can be viewed at a time. Data layers can be downloaded individually in different data formats.

iii. **Mauritius Ocean Observatory E-platform:** [https://gococeanobservatory.govmu.org/] The Ocean Observatory platform is designed to support the Marine Spatial Planning initiative of the Republic of Mauritius by providing a platform to collect, store, organise and provide access to spatio-temporal data relevant to ocean exploration and development.

SeaSketch: SeaSketch[https://www.seasketch.org/home.html.] is a custom-built online mapping platform that has been used for MSP in the United States, Canada, New Zealand, Barbuda, Montserrat, Curac¸ao, the Galapagos Islands and Indonesia. The system, facilitates iterative, collaborative design of spatial management areas, includes built in analytical tools. Configured to reflect the planning goals and objectives specific to a given MSP initiative, SeaSketch offers users the ability to view spatial information about the distribution of human activities, natural resources and infrastructure in and around the ocean. Then, using this information as a guide, users can sketch prospective ocean zones and analyse whether they meet science and policy guidelines for ecosystem protection, economic impacts to ocean users and their relative trade-offs.

A key feature of SeaSketch is that it can be deployed to conduct crowd-sourced and facilitated surveys in which stakeholders may contribute this information and express these values. Because stakeholder participation is central to any successful MSP effort, SeaSketch has features that allow planners to track, visualize and quantify user activity.

SeaSketch is being used in the Mozambique Channel MOZALINK project[http://www.la-reunion.ird.fr/recherche-et-missions/programmes-de-recherche-termines/ecosystemes-biodiversite-et-securite-alimentaire/mozalink.] that aims to develop data, knowledge and solutions to support transparent, sustainable and science-based Marine Spatial Planning (MSP) in the Western Indian Ocean. It is also being used to support the development of the Ocean Metiss project in Reunion.

RECOMMENDATION 16:

Establish protocols and a national-level marine spatial data clearing mechanism to allow for the sharing of data between different institutions and organisations.

Several options to improve data management have been identified in this scoping study. However, there is a need to undertake an assessment of the full range of systems available, and to agree on a single system that will support MSP across the URT. The use of an existing system is probably the most effective and efficient way forward. However, any existing system, and the institution that hosts it, will require technical assistance to develop its current system further and to collate and manage the large body of data that will ultimately be hosted in such a system.

Whilst a MSP initiative can create a forum for dialogue that could facilitate such a transition, there will still be a need for formal checks and balances to provide data holders with certainty that their data will be protected and only used for specific purposes. As such, to complement any future data clearing mechanism, formal data sharing arrangements (in the form of a standardised and legally agreed Data Sharing Agreement [DSA]) will be needed if partners such as NGO's and research organisations are to agree to share data for the purposes of MSP.

5.5.3. Science and research input

Key findings

Existence of national and international marine science research capability: Both the Mainland and Zanzibar already have a relatively strong national marine science capability and a track record of undertaking marine scientific research and data collection, albeit focussed largely on coastal waters (Table 5.6).

Table 5.6: Lead research agencies for the URT

EXISTING MARINE RESEARCH INSTITUTIONS ACROSS THE URT	
Mainland Tanzania	• Tanzania Fisheries Research Institute • Marine Parks and Reserves Unit • Institute of Marine Sciences (University of Dar Es Salam - UDSM) • School of Aquatic Sciences and Fisheries Technology (UDSM) • Deep Sea Fishing Authority
Zanzibar	• Zanzibar Fisheries Research Institute • Marine Conservation Department • Tropical Centre of Oceanography, Environment Science and Natural Resources (TROCEN) (State University of Zanzibar)

RECOMMENDATION 17:

Undertake an audit of international MSR undertaken in the URT's marine waters and determine how to capture data from researchers.

To this end, searches of databases with global data coverage, consultation with the agencies responsible for diplomatic clearances for marine scientific research as well as reviews of other academic sources will provide an understanding of data availability and provide an overview of how best to administer future scientific research expedition applications. This would provide an appreciation of what data may be available for further assessment of their marine environment, or in absence of any significant data coverage, inform the State as to the effort required to address the shortfall. Once this has been established, action can be taken to obtain copies of the relevant data from the researchers.

In addition to the institutions highlighted above, a number of local NGOs have established a strong track record of independent marine environment research in Tanzanian waters. Notable examples include the Wildlife Conservation Society (WCS), IUCN, WWF, SeaSense, Blue Ventures and CORDIO. Many of these organisations have developed comprehensive time-series of research and data relating to areas such as: coastal fisheries management and livelihoods;

marine biodiversity and conservation; coastal habitats and ecosystem services; and coastal livelihoods. This capacity needs to be fully recognised and integrated into any future MSP initiative.

It is also noted, from the literature, that a number of university researchers have been involved in marine research studies. Whilst no attempt has been made to assess the academic science capacity across the URT, this does imply that there is at least some research capacity within the tertiary education sector in the URT.

International marine scientific research

Given the paucity of data that exists for the URT's offshore waters, a key focus of any MSP initiative will be to identify possible sources of data to fill the current knowledge gaps. Numerous international research cruises are undertaken around the world each year. The purpose and application of the research varies on a case-by-case basis but in most cases the data acquired during the research cruises may be used for a number of different purposes.

Under international law, such researchers are obliged, upon request, to provide copies of their data to the host country. However, this is rarely proactively shared and, in most cases, requires a formal request from the host country. However, such a request can only be made if the host country is aware of data that may be available in respect of their waters. A very cursory search of databases with global data coverage indicates that a considerable amount of marine scientific research (MSR) activity has been undertaken in the Tanzanian EEZ and adjacent continental shelf (see Figure 5.4). Whether the Government of the URT is aware of the extent of this activity, and whether it has received copies of the data acquired is, at this stage, unknown.

SOLSTICE: One recent initiative that is worth mentioning in the context of marine scientific research and data is the Sustainable Oceans, Livelihoods, and food Security Through Increased Capacity in Ecosystem (SOLSTICE) programme that operated across much of the WIO (including the URT) between 2017 and 2021. The SOLTICE programme helped to build capacity across the various research institutions in the URT in such scientific disciplines as modelling, in situ monitoring and measurement and assessment so ecosystem interactions. Among other findings, the SOLTICE programme demonstrates the value of using existing open-access data sets for modelling and assessment and the value of using modern and cost effective remote sensing technology to acquire new data (Anderson, 2021). The capacity developed and lessons learned through this programme should be integrated at an early stage into the MSP process, particularly with regard to data and science needs.

WIO Symphony: The WIO Symphony project is a collaboration between the Nairobi Convention, its ten member States in East Africa (including the URT) and the Swedish Agency for Marine and Water Management.[https://maritime-spatial-planning.ec.europa.eu/practices/symphony-tool-ecosystem-based-marine-spatial-planning] Through the collaboration, the partners will co-develop and implement a practical assessment tool for marine spatial planning in the Western Indian Ocean region. By incorporating information and knowledge from national, regional and international experts, the WIO Symphony tool enables estimations of how pressures from human activities in the ocean affect nature values in each location in the Western Indian Ocean.

The system is based on more than 80 maps of ecology and human activity and combines pressures, ecosystems and sensitivity into cumulative environmental impact. Users can apply the tool to support MSP by assessing environmental impact from human activities and by visualizing data, test scenarios, and compare different ways of using the ocean. The results are presented as heat maps, which makes it easy to identify areas of high and low cumulative impact. They are also presented as tables and diagrams showing details for any given area. Uncertainties are highlighted too.

5.6. MULTI-OBJECTIVE PLANNING PROCESS

No marine planning occurs in a vacuum. Management mechanisms already exists in some form, and a key to successful MSP is to build on what exists, improving the management and making it more efficient and effective. A key step, therefore, in preparing for MSP is to assess the current planning arrangements and to identify what gaps or areas of duplication exist that could be addressed to streamline and harmonize the current arrangements thereby delivering a more integrated approach. In particular, this should focus on the existing spatial planning mechanisms and spatial management tools.

5.6.1. Multi-use Stakeholder Engagement

A key feature of any MSP initiative is that it must address and resolve areas of incompatibility and contestation. Decisions on access rights, allocation and use of resources are rarely unanimous and universally supported and require compromises to be negotiated between stakeholders. Trade-offs recognise individual priorities and complementing/conflicting outcomes and are an essential feature of arriving at an effective outcome for MSP that delivers an overall national vision for the future use of the ocean space and resources that all stakeholders can sign up to.

The support of stakeholders in the formulation and implementation of any MSP framework is therefore crucial to its success. Stakeholders should be involved from the outset and should be part of the process to define the vision and goals for MSP as well as to define the future use scenarios for which the plan will be designed. The broadest range of stakeholders must be included, from those responsible for managing resources in government, to those that rely on those resources to support their livelihoods at the community level (World Bank, 2022b).

Key findings

Need for wider stakeholder engagement: Both Mainland Tanzania and Zanzibar already have considerable experience of undertaking comprehensive stakeholder engagement and participatory processes in development initiatives. This further highlights the critical role that all key MSP related sectors and NGOs should play in the development of any national led MSP initiative and the need for integrating a broad range of different organisations into the planning process. Furthermore, there is a considerable body of experience with the numerous community engagement projects on the development and implementation of local-level marine management

initiatives that are being supported by NGOs across the URT. As such, the experience gained by NGOs working with local communities will be particularly valuable when it comes to engaging with coastal communities.

A broad range of stakeholders have already been identified and a number of stakeholder engagement and sensitisation activities have already been undertaken. Annex (B) provides a full list of the various stakeholders with whom the project team have engaged during this scoping exercise.

RECOMMENDATION 18:

Develop and implement a comprehensive programme for stakeholder engagement to ensure that coastal communities and other stakeholders can be proactively involved in the MSP process.

A great majority of economic activities in the URT's maritime waters either support, or directly impact, the livelihoods and well-being of coastal communities. Enhancing those livelihoods is a primary objective of blue economy development. It is therefore imperative that coastal communities understand the potential benefits of undertaking MSP at the outset, and have a leading and active role in co-developing MSP plans throughout the process.

Although a broad range of stakeholders have already been engaged during the initial phase of this study, it should be noted that, for the most part, this has focussed on government agencies, research providers, development partners and NGOs. When the time comes for a full scale planning process, there will be a need to engage much more broadly with coastal communities, industry groups and other users and beneficiaries of the URT's marine space.

Similarly, the proactive involvement of other key stakeholders, not least private sector investors in the tourism, fisheries, aquaculture, transportation and energy sectors is also critical. An inclusive form of stakeholder engagement, whereby stakeholders are involved throughout the process with transparency and accountability between all parties, will be required. Partnerships between government, the private sector and civil society must be built in order to ensure co-responsibility for coastal management and to empower stakeholders to participate effectively.

In order to guide the stakeholder engagement process for the duration of any future MSP initiative, there is a need to undertake a comprehensive mapping and analysis of all stakeholders and to develop a robust Communications Strategy that defines how the project will communicate and engage with the wide range of stakeholders that may have an interest in the project.

Stakeholder identification and analysis for future MSP activities

Different stakeholders will have different interests and will also exert different levels of influence on the process and at different times. At the outset of any MSP process it is therefore important to identify and characterise the broad range of stakeholders with whom the project should engage. Stakeholder analysis techniques will allow the MSP project team to identify and assess the importance of key people, groups of people, or institutions that may significantly influence the success of a project. This should include all those organizations (international, national and sub-national), sectors or groups of individuals which may either benefit from or have positive or negative impacts upon the project. The analysis should consider:

i. The type of stakeholder and their specific interests in the project;
ii. The potential influence or impact each stakeholder may have on the project; and
iii. The extent and nature of the engagement required between the project and each stakeholder.

The use of formal stakeholder analysis tools will form an important part of the initial framing for a MSP project and will provide the basis for identification of communication, engagement and capacity building activities. Typically this be achieved through an analysis of both the degree of interest and degree of influence individual stakeholders will have on the outcome of the MSP process Figure 5.5.

Depending on the category, this model suggests different ways how to deal with these stakeholders. Stakeholders with high power and low interest shall be kept satisfied. Those with low interest and low power shall be only monitored with minimum effort. A stakeholder with low power and high interest in a project shall be keep informed and finally the high power, high interest stakeholders shall be closely monitored and informed.

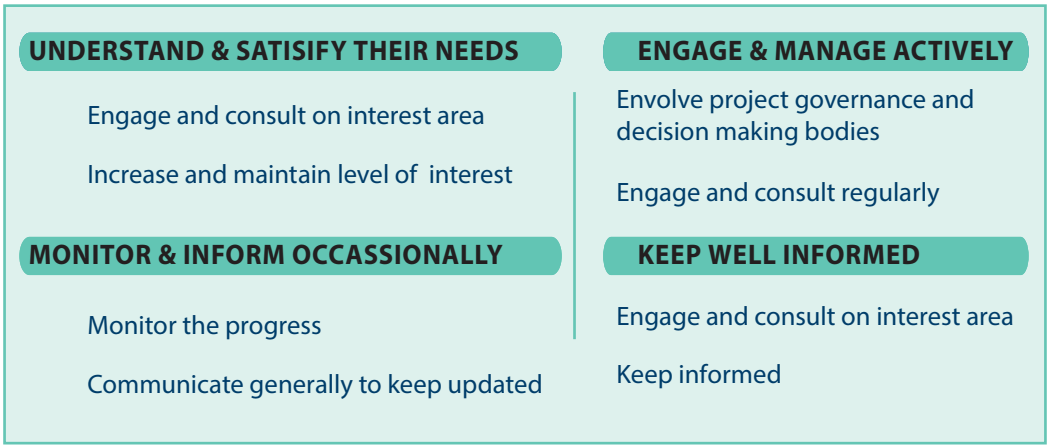


Figure 5.5: Stakeholder Influence/Interest Matrix

5.6.2. Existing spatial planning processes and tools

Key findings

Existence of area based management tools: Although no formal MSP framework exists in the URT, spatial planning, in general, is a well-established tool, operating at different jurisdictional levels and geographic scales. Under the relevant town planning legislation, planning authorities are vested with the power to prepare a general planning scheme, to control the use and development of land in the interests of proper and orderly development, as well as to formulate by-laws to regulate zoning in respect of use and density of development (Huang et al. 2018).

Currently, for the Mainland, the National Land-use Framework (2013–33) is proposed to be the overarching guiding document for spatial and land-use planning. The National Land-Use Framework Plan (NLUFP) was developed and updated by the National Land-Use Planning Commission to provide guidance for the determination of land uses of national concern—particularly protected areas, wetlands, and areas for agriculture, grazing, urban and rural settlements, and infrastructure. It seeks to depart from the historical ad-hoc planning practice to a more systematic and comprehensive approach by translating national priorities and development goals

into spatial terms and minimizing existing and potential conflicts that arise from sectoral land uses and activities. In this way, the NLUFP is intended to serve as a guide for land-use planning and to create compatibility between land uses and land ownership—at zonal, special areas, regional, district, and village levels.

In Zanzibar, the National Spatial Development Strategy (NSDS) sets out the national spatial development policies and strategies in respect of the general direction and broad pattern of the land use, land development and protection of cultural and natural resources in Zanzibar by the year 2035. In this context, NSDS facilitates the government in strategizing to ensure that Zanzibar achieves sustainable spatial development. Moreover, the "ZanPlan" which is the outcome of the Technical Assistance for the Preparation of a Diagrammatic Indicative Structure Plan for Zanzibar Municipality and Its Immediate Periphery and Urban Development Policy for Zanzibar Town guides in the preparation of a future spatial plan for Zanzibar Municipality and its immediate periphery.

As outlined above, a broad range of spatial management tools are available, for controlling the different marine uses and activities, under different legal instruments and that could be included in a MSP initiative (Annex E). However, to date, only a limited number of such measures have been applied across the URT. The most relevant of these are discussed in section 4.4 above in the context of the specific legal instruments under which they may be designated. For some activities, (e.g. shipping and submarine cables and pipelines) opportunities to establish spatial management tools do not appear to have been fully utilised and there is a need to amend a number of the existing legal instruments to establish a clearer legal basis for the application of sector-specific spatial management tools.

Marine Protected Areas

One of the most widely used developed tools is MPAs, which have been designated for both Mainland Tanzania (Marine Parks and Marine Reserves) and Zanzibar (Marine Conservation Areas). These have been discussed under section 4.4.1 above and will be only briefly addressed here.

In the case of Mainland Tanzania, a total of 18 true MPAs have been designated (3x Marine Parks and 15 x Marine Reserves). General Management Plans have been prepared for each of the Marine Parks.

Zanzibar has designated five marine conservation areas (MCAs) covering almost all near-shore waters around Unguja and Pemba, the main gap being the east coast of Pemba. Updated general management plans with maps and framework zoning guidance were finalised for all five MCAs in 2022.

Although approximately 15% of the combined area of internal waters and territorial sea is protected, this is still below the global target of 30% indicated in the Global Biodiversity Framework and the URT Fisheries Master Plan 2021/22 – 2036/37.

Beach Management Units and Collaborative Fishery Management Areas on the Mainland

During the early 2000s, the challenges of centralized fisheries management systems led to efforts to reform management and introduce the concept of fisheries 'co-management', whereby the government and the fisheries communities share authorities and responsibilities in the management. To this end, the concept of beach management units (BMUs) was initially introduced in Mafia, Rufiji, and Kilwa districts, followed by their formal introduction through the Fisheries Act (2003).

The Act provides for every fishing community, in collaboration with relevant village government, to form BMUs to provide for collaborative fisheries management for the purposes of managing, protecting and conserving fishery resources, biodiversity and the environment. A BMU may be defined in respect of specific area/body of water, and have now been established in all coastal districts. BMUs have clear, legally empowered roles and responsibilities, which are set out in National BMU Guidelines and are supported by the Fisheries Act. The jurisdictional area on land of every BMU shall be as agreed upon by fishers community based organisations, village councils, local government authority and central Government.

BMUs have a number of roles including:

i. Propose bye-laws for endorsement by the LGAs and enforce them;
ii. Prepare Management Plans and By-laws to supplement the implementation of Fisheries Act and Regulations;
iii. Undertake monitoring, control and surveillance in collaboration with the relevant authorities to reduce harmful and illegal fishing practices;
iv. Assist in the collection of fisheries data on catch, effort and socio-economic;
v. Ensure that the beach, together with any structures or buildings situated thereon, is kept in a safe, clean and hygienic condition; and
vi. Identify wider development interventions or plans and make financial proposals for their support by the BMU.

Each BMU is required to define a Collaborative Fisheries Management Area (CFMA) and to develop a plan for that area. Members of a BMU may fish in the CFMA of another BMU, but they must comply with the controls imposed by that BMU. The idea being to give local communities rights and control over their traditional fishing grounds through each BMU. As such, CFMAs are jointly managed by neighbouring BMUs who share fishing grounds. Thus, whilst BMUs themselves are not strictly spatial management tools, they give rise to spatially defined management areas (i.e. CFMAs) under which each BMU can establish a range of spatial, temporal, equipment and species-specific restrictions, which are enforceable through the adoption of appropriate by-laws for the specific CFMA.

To this end, CFMAs have been established along much of the Mainland Tanzania coast, comprising clusters of (usually three to seven) neighbouring BMUs, which share common fishing grounds. Establishment and management of CFMAs is currently governed by the National guidelines for participatory management of fisheries and environmental resources, 2017. CFMAs are conceived as a spatial tool for the co-management of fisheries resources and, as such, CFMA management is jointly undertaken by LGAs and BMUs (on behalf of village councils and assemblies). It is important to note however that there are currently no provisions specifically referencing the existence, legal status, establishment or management of CFMAs in any existing primary or secondary fisheries legislation.

Notwithstanding the above, CFMAs have been adopted and operationalised by both the Ministry of Livestock & Fisheries (MLF) and the President's Office - Regional Administration and Local Government (PO-RALG) and, over the past 10-15 years, have become an important tool for near-shore fisheries co-management along the Mainland Tanzania coast. To date, 29 CFMAs have been proposed or established and approved by Director of Fisheries along the Tanzania Mainland coast, covering 13 of 18 coastal district councils and municipalities. 15 of the 29 CFMAs proposed to date have management agreements approved by their respective district councils and the Director of Fisheries. The main gaps are in Mkuranga and southern Kilwa

Districts, where there are initiatives under way or in the pipeline to establish CFMAs, and in Kinondoni, Ilala, Lindi and Mtwara Municipalities which have relatively small near-shore areas.

The URT's existing network of spatial management measures comprise entirely inshore measures. If the URT is to develop the offshore fishing sector, a commensurately greater focus needs to be placed on the conservation management needs of those offshore waters. This would ensure that any future fisheries development takes account of any potential conflicts with biodiversity values in the offshore waters. As such, there is a need to undertake an assessment of offshore conservation values and, if appropriate, to utilise existing legal mechanisms to legally designate offshore conservation areas.

RECOMMENDATION 19:

Adopt a more systematic approach to marine conservation planning that ***inter alia,*** **considers how other biodiversity objectives can be served using existing spatial designations (i.e. MPAs, CFMAs) and linking these to other spatial management mechanisms.**

Despite the apparent success of the URT's existing networks of spatial management measure in maintaining a significant proportion of "living" habitats, which are associated with higher biodiversity that underpins the small-scale fisheries, there is a need to ensure that the established MPA's are representative, anticipatory to climate change and to the current and future uses, and that are effective in enhancing fish biomass recovery. There is a need to adopt a more systematic approach to marine conservation planning in the URT that fully utilises and integrates the broad range of spatial management measures currently available.

RECOMMENDATION 20:

Seek to designate 30% of the URT's marine space for protection from the most harmful human activities by 2030.

Through the Fisheries Sector Masterplan (2021/22-2036/37), the government has indicated that there is a need to devote at least 30% of the URT's marine space for conservation. A commitment to conserve biodiversity is one of 21 key targets highlighted in the Global Biodiversity Framework for 2030. In order to support this commitment, it is recommended that the MSP is used as a tool to undertake comprehensive assessment in support of this commitment, especially in the EEZ.

Through the Fisheries Sector Masterplan (2021/22-2036/37), the government has indicated that there is a need to devote at least 30% of the URT's marine space for conservation. A commitment to conserve biodiversity is one of 21 key targets highlighted in the Global Biodiversity Framework for 2030. In order to support this commitment, it is recommended that the MSP is used as a tool to undertake comprehensive assessment in support of this commitment, especially in the EEZ.

RECOMMENDATION 21:

Update Key Sectoral Legislations to integrate MSP principles.

It is recommended that clear provisions are included in all key sectoral legislations (e.g. Environment, Fisheries, Aquaculture, Maritime Transport, Energy, Oil and Gas, etc.) to provide for the establishment and governance of designated MSP planning areas. As part of any future MSP framework, the relevant agencies should assess whether any dedicated spatial management tools are desirable or necessary to improve their sectoral requirements and help reduce possible user conflicts with other marine users.

RECOMMENDATION 22:

Establish a clear legal basis for the protection of subsea pipelines and cables.

As the offshore industry develops further and new infrastructure is installed on the seabed, it will be critical to ensure that adequate legal protection mechanisms are available for the infrastructure. Legislative amendments should therefore be tabled to introduce the ability to designate protective measures for subsea infrastructure. Similarly, other critical infrastructure, in the form of subsea cables, also requires adequate protection from other marine uses. Given that these measures could apply to both petroleum and non-petroleum infrastructure, the most relevant legislation is considered to be Territorial Sea and Exclusive Economic Zone Act. In the specific context of Zanzibar, a determination will need to be made as to which is the most appropriate legal instruments to be amended accordingly.

5.6.3. Marine zoning activities

Once a desired future spatial scenario has been identified, then specific spatial management measures will have to be identified that can lead to that future vision. This is often undertaken in the context of different management 'zones' within the overall planning area. An ocean zone may be defined as an area of ocean within which specific human uses are allowed or prohibited. Ocean zoning is one of the key tools with which MSP seeks to manage and where appropriate separate human activities.

For zoning to work well, there needs to be a number of different ocean zones (but not too many), with each having its own clearly defined objectives and rules governing which human activities are allowed and not allowed. Types of ocean zones can include MPAs, aquaculture zones, various types of fishing (subsistence, industrial), oil and gas, shipping and tourism. The process of MSP should result in ocean zones that are legally enforceable.

Key findings

Need to use the experience gained in planning and zoning in MSP process: Whilst there have been no national level MSP activities in the URT, the use of multi-use planning and zoning is an established tool for the management of MPAs, both in Zanzibar and the Mainland. In this regard, a number of MSP/Zoning projects have been undertaken in specific areas and numerous spatial management measures have been established under the relevant MPA legislation. Most

experience has been gained with the development of management plans for Marine Parks and Marine Conservation Areas, since these all include some element of zoning (Figure 5.6).

For each of the General Management Plans (GMP) that have been developed for Mainland Tanzania's MCAs, the system of zoning uses a common approach whereby four zones are proposed in descending order of the level of protection provided.

i. Core Zones – areas of high conservation value that are strict no-take zones;
ii. Specified Use Zone – areas of high conservation value but that are also of high importance for local resources users. As such these zones allow certain uses to be carried out by local residents but no other citizens.
iii. General Use Zone – provide local residents with opportunities for sustainable resource use and development. Generally all activities are allowed for local residents and other citizens are allowed to use the area subject to the right permits.
iv. Buffer Zone – an area outside and adjacent to the park boundary that safeguards against encroachment of environmental threats from outside the park.

Notwithstanding the system of zoning outlined above, some activities are entirely prohibited from being undertaken with the boundaries of a marine park.

For each of the GMPs that have been developed for Zanzibar's MCAs, the system of zoning uses a common approach whereby two zones are proposed:

i. A strict No-Take Zone designed to protect and conserve biologically significant habitats in their pristine conditions; and
ii. Multi-use Zones designed to allow activities that are not prohibited under the GMP to be allowed subject to conditions.

RECOMMENDATION 23:

Prepare an MSP zoning framework to guide appropriate tools for management controls.

The resulting spatial management plan that is the logical conclusion of the MSP process will be defined by (a) the activities the government wishes to include in the MSP framework; and (b) the zoning framework designed to address those activities. This will necessarily involve consultation with those stakeholders who may be affected by the zoning framework. Through a process of consultation and iteration, a system of zoning should be developed that will form the basis of the final MSP framework. Such a system of zoning should be based on two different types of design principles, namely:

i. Socio-economic, cultural and management feasibility design principles; and
ii. Biophysical design principles.

The final categories of zones will reflect these design principles and the input of different stakeholders into the process.

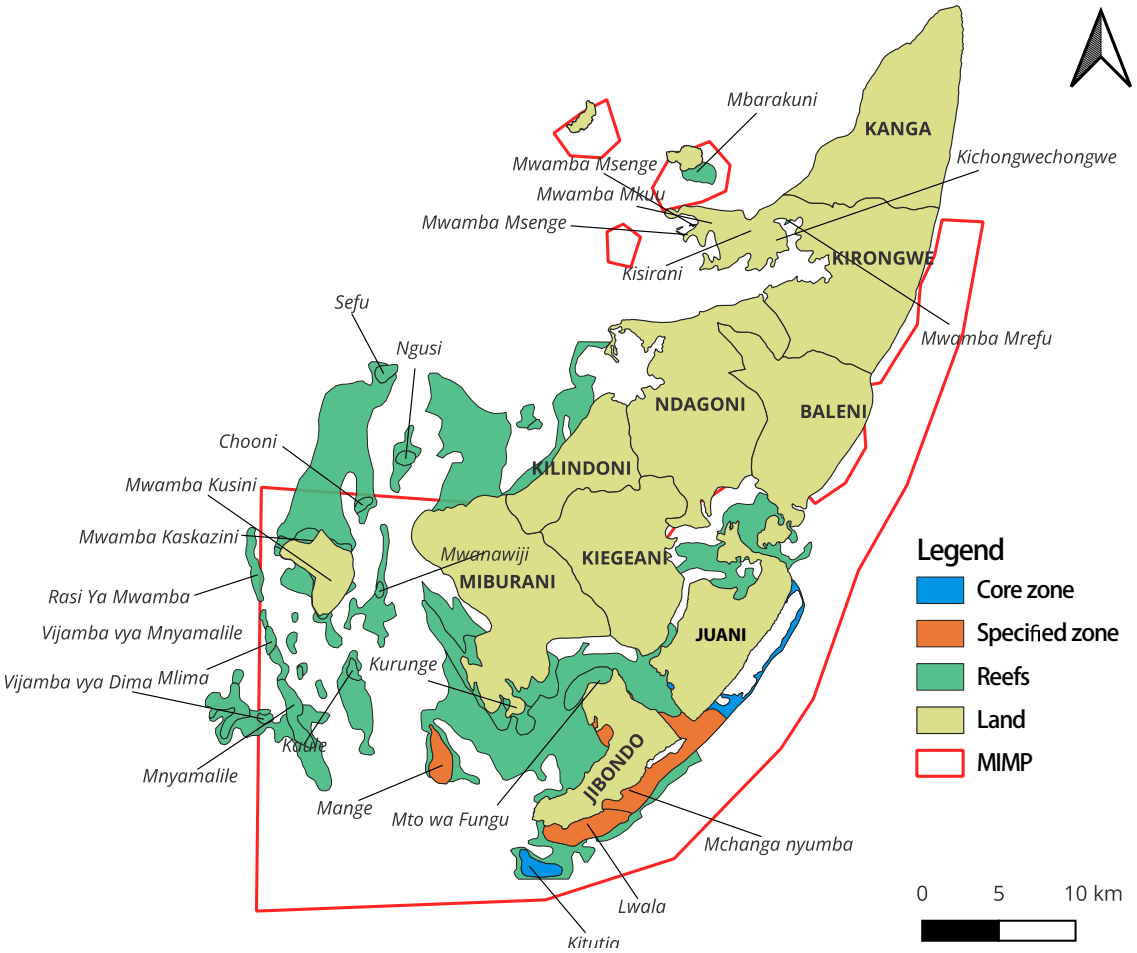


Figure 5.6: Example of marine zoning scheme for the Mafia Island Marine Park. Source: Modified from Marine Parks and Reserves Unit (2011).

CHAPTER SIX

SYNTHESIS AND PROPOSED ACTIONS

6.1. KEY FINDINGS SUMMARY

This scoping study report presents a baseline of the URT's current preparedness to undertake comprehensive, EEZ-wide marine spatial planning. During the preparation of the report, the project team reviewed a broad range of sources and interviewed a number of representatives from key agencies and stakeholder groups. The overall picture that emerges is that the URT is relatively well-placed to commence MSP activities, due, in part, to the existing knowledge base relating to critical inshore resources and to the extensive community and scientific engagement that a number of well-established local institutions have undertaken. The implementation of MSP for the URT is considered both timely and necessary.

Moreover, many Mainland and Zanzibar government institutions have prior experience of spatial planning at different levels, both in terms of land-use planning and marine conservation planning. Notable examples include the preparation of general management plans (including zoning frameworks) for the various types of marine protected area established in each territory. These arrangements should form a strong basis from which to develop a more comprehensive, national-level, MSP framework for the URT. This notwithstanding, a number of key issues and potential barriers have been identified, as a result of this analysis, that may impact the success of any future MSP initiative.

6.1.1. Overall ocean governance framework

Given the tarns-boundary nature of MSP, and the fact that the EEZ is managed as a Union matter, there are strong arguments for any future MSP to be considered in an integrated manner, with equal representation from both Mainland Tanzania and Zanzibar in the process. The URT has clearly delineated its maritime space, in accordance with the provisions of UNCLOS. In this regard, more needs to be done to mainstream MSP and this will require a range of government institutions to work collaboratively together to implement the goals of MSP in the internal, territorial and EEZ waters.

The existing sector-specific policy framework, outlined in this report, does provide clear guidance on the protection of marine ecosystems and the development of living and non-living marine resources. However, whilst the URT does have a broad policy base to support management of the marine environment, there is currently no Union-level Ocean's Governance Policy that specifically addresses ocean affairs. Both the Governments of the URT and the Revolutionary Government of Zanzibar have developed and implemented comprehensive and, in most cases, complementary legal frameworks for the key blue economy sectors that are addressed in this report. Furthermore, a number of existing legal instruments do provide the legal basis for the adoption of specific spatial management tools that could be used to support MSP activities in the future.

For MSP to be successful, there is a need for a robust, multi-sectoral coordination mechanism that reflects the interests of different stakeholders across Mainland Tanzania and Zanzibar. Such a mechanism should be formally constituted and have a clear mandate. Notwithstanding existence of the Deep Sea Fishing Authority, and its URT-wide mandate to manage and develop fisheries resources in the EEZ, there is a need to establish an integrated lead agency (such as an ocean commission) with overall responsibility for regional and global ocean affairs at the Union level. The management of ocean affairs is more clearly defined in Zanzibar since the establishment of the Ministry of Blue Economy and Fisheries whilst on the Mainland the Office of the Vice President is the designated authority on matters related to Regional Seas Programme under the UNEP Nairobi Convention.

The current governance arrangements between the national and local government entities is also a matter that should be explored since LGAs do have some responsibilities with respect to environ-

mental services connected to the economic, social and environmental activities of the near-shore fisheries and aquaculture and other marine resource-related activities, which has the potential to significantly influence the quality of the marine environment. There therefore needs to be a practical agreement over roles and responsibilities, vis-à-vis MSP, between national government agencies and their LGA counterparts.

6.1.2. Drivers and goals

The lack of an overarching policy framework for ocean affairs means that ocean planning decisions continue to be made without broad strategic direction for MSP. As such, some form of goal-setting will be necessary for the future development of a national MSP framework. One approach that has been well tested for MSP is the use of 'scenario-based planning', an effective tool to allow stakeholders to explore the full range of measures available, and the consequences of applying those measures.

6.1.3. Geographic boundaries and scope

It is clear from the consultations that any future MSP initiative should extend from the coastline to the outer limits of the EEZ. Moreover, given the potential impact of land-based coastal developments on the marine environment, there is a strong case to include the littoral zone in MSP. To this end, this analysis recommends the development of a systematic framework of planning areas, defined at different spatial resolutions, to support planning and decision making across different parts of the URT's maritime space In this regard, there is also a need to clarify the jurisdictional limits for different maritime zones and the actors involved in their management. One question that should be addressed, for example, is whether a MSP initiative should be extended to include the resources of the extended continental shelf. Clarification is also needed with respect to the role of LGAs in any future MSP initiative, given their statutory responsibilities with respect to coastal marine resource management.

6.1.4. Data collection and management

A considerable body of marine spatial data already exists for the URT's maritime waters, albeit focussed largely on the inshore/coastal waters. Nevertheless, it is considered a sufficient basis upon which to commence a broad-based MSP process, with a number of caveats:

i. There are clearly some gaps in data for specific sectors (e.g. inshore fishing and shipping) that will need to be filled in order to gain a better understanding of the risks and interaction associated with certain sectors;

ii. Whilst some data does exist, much of it is not readily accessible, since data sharing between data holders does not appear to be well developed. In order to maximise the benefits of existing spatial data, mechanisms are needed that facilitate data sharing and the consolidation of data into a central, accessible data portal.

iii. In addition to the existing government research institutions, the URT Government should make fuller use of the broad marine science capability that exists in the numerous NGOs operating in the URT.

iv. Work is required to better understand the quality and extent of the existing data, with a view to improving the current core data sets, and procuring new data sets where critical gaps are identified.

v. Data gaps relating to offshore waters presents a challenge for decision making about offshore planning and management. Opportunities should be explored as to how these gaps might be filled.

6.1.5. Multi-objective planning process

Both Mainland Tanzania and Zanzibar clearly have considerable experience in undertaking multi-use planning and zoning, in the context of the development of MPA/MCA management plans and local-level fishery co-management. However, these activities have largely focussed on conservation, fishing and aquaculture, with little focus on broader uses of the marine environment of offshore waters.

Thus, whilst these existing mechanisms do provide a good basis for marine planning activities, there is a need to adopt a more systematic approach to marine planning that fully utilises and integrates the broad range of spatial management measures currently available. The focus needs to extend beyond the inshore coastal waters to include the entire EEZ. In this regard, this report recommends that the URT adopts a multi-level approach to MSP whereby broad scale planning is undertaken across the entire EEZ - taking account of key offshore maritime activities – whilst a more focussed level of planning is undertaken across the entire coastal zone. This reflects both the greater intensity of activity taking place in the coastal zone as well as the different levels of knowledge about the coastal versus offshore waters.

6.2. NEXT STEPS

The ultimate goal for any MSP initiative should be the development and adoption of a comprehensive Spatial Management Plan. Such a plan should be a statement of policy from the Government, that sets out the framework and direction for marine spatial management decisions. It will identify when, where, and how goals and objectives will be met and will be based on the agreed zoning framework, supported by a range of non-spatial management tools. To achieve this goal, the following section presents a draft Implementation Plan, which elaborates the steps needed to address the 23 recommendations highlighted in Chapter 5 of this report. A provisional budget for the draft Implementation Plan is also included.

6.3. MSP IMPLEMENTATION PLAN

6.3.1. Structure and approach

This scoping study report has provided a comprehensive set of twenty-three recommendations that collectively contribute to an initial set of actions known as the Implementation Plan. The plan revolves around the five thematic areas introduced in Chapter 5, namely: Governance Arrangements, which involves establishing institutional, policy, and regulatory structures to effectively support the implementation of the spatial management framework; Drivers & Goals, addressing the underlying motivations and overarching objectives aimed at fulfilling the Government's development goals; Geographic Boundaries & Scope, determining the spatial extent of the MSP framework and identifying the activities to be included and managed within the resulting spatial management framework; Data Collection & Management, encompassing the necessary data and data management requirements to support ongoing decision-making and MSP activities; and Multi-Objective Planning Process, emphasizing the importance of engaging with a wide range of stakeholders with vested interests in the URT's marine space to collaboratively develop a comprehensive spatial management framework for the region.

Each of these five themes is allocated a *"Specific Development Objective"* **(SDO).** Each SDO has a series of two to three "Results Areas" that are fulfilled by specific activities corresponding to the 23 recommendations. The five SDOs and corresponding Result Areas are summarised in Table 18 below and are described in more detail below. The specific activities corresponding to each Result Area, and steps for their implementation, are summarised in a series of tables in the tables

set out under section **6.3.2**. The various activities correspond to different types of output which have been categorised into a typology as follows:

- Capacity building activities
- Data & knowledge
- Tools to support MSP
- Products to support MSP
- Processes to support MSP

In addition, each identified activity is given an indicative prioritisation and an indicative time-frame for implementation as shown in Table 6.1:

Table 6.1: Priority and activities

Priority	Description	Term	Timeframe
High	Must be prioritised in the initial project planning phase	SHORT	<2 year
Medium	Essential for overall MSP success and must be completed before the project ends	MEDIUM	2-5 years
Low	Not essential for overall MSP success, but desirable to improve the overall governance of the URT's marine space	LONG	>5 years

NOTE: It is accepted that the prioritisations and timeframes outlined above are provisional only. They should be discussed and agreed with stakeholders during the Validation Process.

Table 6.2: Implementation plan and Specific Development Objectives (SDO)

Roadmap Element	SDOs and Results Areas
Governance Arrangements	• **SDO 1:** Establish robust institutional capacity and authority to develop and implement the MSP framework.
	• Result Areas:
	• 1.1 Establish effective institutional arrangements to support MSP
	• 1.2 Establish robust implementation mechanisms to support MSP
Drivers & Goals	• **SDO 2:** Develop a clear vision and objectives for the MSP process that reflects the unique circumstances and interests of the URT.
	• Results Areas:
	• 2.1 Understand the drivers for MSP
	• 2.2 Define and prioritise goals and objectives for MSP

Roadmap Element	SDOs and Results Areas
Geographic Boundaries & Scope	• **SDO 3:** Clearly define the scope and extent of the MSP framework in the context of the rights and obligations of the various stakeholders.
	Result Areas:
	• 3.1 Define geographic boundaries and planning areas
	• 3.2 Understand the jurisdictional limits that apply in different planning areas
	• 3.3 Establish what existing and future uses need to be addressed
Data Collection & Management	• **SDO 4:** Collect, collate and present knowledge and information about the marine environment of the URT, its condition, current & future uses and areas of significant environmental value.
	Result Areas:
	• 4.1 Collate and map spatial data to create GIS layers for MSP
	• 4.2 Establish robust data management and mapping systems
Multiple-Objective Planning Process	• **SDO 5:** Develop a spatial planning framework that reflects both the broad range of stakeholder interests and the goals and objectives for development of the URT's marine space.
	Results Areas:
	• 5.1 Implement a comprehensive programme for stakeholder engagement
	• 5.2 Strengthen existing spatial planning processes and tools
	• 5.3 Define a zoning framework for the URT
	• 5.4 Prepare a broad-scale spatial management plan

GOVERNANCE ARRANGEMENTS

Establish institutional arrangements to support and coordinate MSP

To ensure successful implementation and long-term sustainability of the MSP, it is essential to establish effective institutional arrangements. This involves appointing a competent authority with the power to resolve intricate conflicts as the leader of the MSP. Furthermore, a comprehensive coordination mechanism should be established, utilizing the existing inter-governmental coordination mechanisms under the Office of the Vice President. This approach will not only facilitate better progress towards MSP implementation but also serve as a means for building capacity and ensuring the ongoing success of the MSP framework.

The desired outcomes include the establishment of a MSP Steering Committee consisting of representatives from Mainland Tanzania and Zanzibar, jointly coordinated by the Vice President's Office (VPO) and the Ministry of Blue Economy and Fisheries (MoBEF). This committee aims to provide formal structure and guidance for the MSP. Additionally, it is desired to have increased flexibility in project implementation, allowing for efficient adaptation to changing circumstances. The implementation process should be expedited with improved technical support, ensuring faster progress. Furthermore, there is a focus on capacity development for the technical team members involved, ensuring their expertise and skills contribute to the long-term sustainability of the MSP framework.

Table 6.3: Summary of MSP implementation plan activities and tasks to establish effective institutional arrangements to support and coordinate MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Define and establish a VPO - MoBEF coordination and implementation mechanism with dedicated technical groups and well-defined roles and responsibilities.	Identify and mandate, by mid-2023, a lead agency to establish and coordinate an inter-departmental MSP coordination group to function as a high-level advisory committee. Define a formal governance structure on MSP. Undertake MSP sensitisation and capacity building to understand the project objectives. Identify key technical partners to support the various Technical Working Groups (TWG) identified within the structure.	HIGH (short term)	TNC; UNEP NC; UNDP; WWF	The authority for MSP planning especially in the EEZ and adjacent waters (subject to future ABNJ agreement) should be a Union-level entity, with broad participation from across the URT and jointly coordinated by VPO and MoBEF.	
				The MSP Authority should establish some form of multi-agency coordination and advisory mechanism, in order to structure a participatory MSP governance framework reflective of current policy legal and institutional arrangements on both Mainland and Zanzibar.	

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Establish an effective technical-level mechanism to oversee MSP co-ordination in areas where Mainland Tanzania and Zanzibar have adjacent jurisdictions and common management interests.	• Undertake a review of current management arrangements. • Undertake a review of relevant legal instruments. • Define planning areas that recognise the management interests for both Mainland and Zanzibar. • Undertake consultation with key stakeholders to understand the specific threats, challenges and conflicts in the identified areas. • Establish a specific working group to work collaboratively on issues of mutual interest in the defined planning areas. • Develop area-specific interventions to be included in the overall MSP framework.	High (Medium term)	UNDP; TNC	• This should utilise existing institutional arrangements such as the VPO, MoBEF (Zanzibar) and the MLF (Mainland) and align closely with all other sectors. • This coordination should recognise and build on the broad range of existing initiatives already being undertaken across the URT	
Undertake a Capacity needs Analysis across Mainland Tanzania and Zanzibar.	• Undertake a capacity needs assessment of the different stakeholders. • Prepare a comprehensive programme of capacity building activities, on the basis of the CNA. • Deliver capacity building as an ongoing activity.	High (Medium term	TNC; UNDP; UNEP (Nairobi Convention); IMS; WIOMSA; UNESCO-IOC	This should be undertaken at an early stage in the MSP development process and could form part of the initial project set up.	

Establish robust implementation mechanisms to support MSP

In order to establish the necessary authority for MSP planning, it is crucial to guarantee that the outputs of the MSP, such as zoning and spatial management plans, effectively align with the development goals for the United Republic of Tanzania's marine space and can be feasibly implemented and enforced. Consequently, it is imperative to ensure that any forthcoming MSP is supported by a strong policy and legal framework to facilitate its successful implementation. Additionally, it is essential to explore a range of complementary mechanisms as part of this process.

The desired outcomes include the identification of both spatial and non-spatial management tools that can be effectively utilized in the maritime waters of the United Republic of Tanzania (URT). Additionally, it is sought to establish a comprehensive spatial management plan that clearly defines the goals and objectives for the future management of the URT's marine space. Furthermore, there is a need to develop a widespread understanding of the jurisdictional boundaries for the different organizations responsible for marine management throughout the URT's marine space.

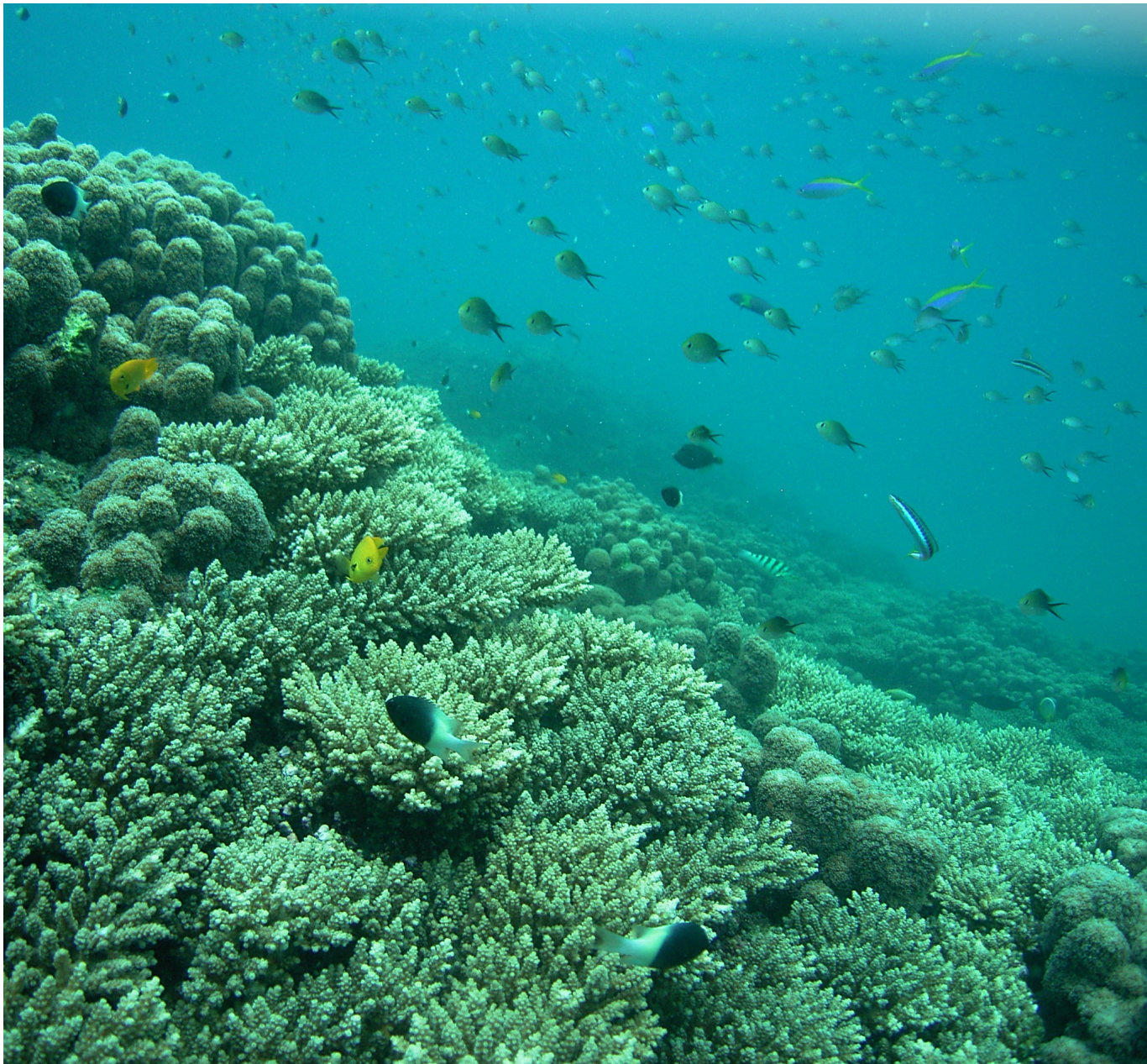


Table 6.4: Summary of MSP implementation plan activities and tasks to establish robust implementation mechanisms to support MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Prepare an overarching National Ocean Governance Policy for the URT to guide the development and implementation of the blue economy and MSP especially in the EEZ and adjacent area.	• Agree on priorities and trade-offs for the development of the URT's marine space with wide stakeholder consultation. • Prepare a draft policy framework addressing, as a minimum, the following: • Overarching Vision and Goals for Ocean Governance Policy including MSP. • Principles and approaches to be adopted. • Institutional arrangements for Ocean Affairs - including the National/ Regional interaction. • Geographic scope and levels of detail. • Key sectors to be included for the implementation of MSP as a key implementer.	HIGH (Short Term)	UNDP; UNEP (Nairobi Convention); Commonwealth Secretariat; WWF; TNC; UNDP; UNCLOS Secretariat; UNEP Nairobi Convention Secretariat	Activity will assist in the definition of a future preferred development scenario and resulting Goals and Objectives for Maritime Affairs.	

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
	• Standardisation of approaches for MSP across different Planning Areas. • Undertake consultation on draft policy framework. • Revise draft framework based on stakeholder feedback. • Present final draft to Steering Committee for approval/adoption.				
Establish the legal basis for MSP in Mainland Tanzania and Zanzibar.	• Review, and update as appropriate, existing non-spatial management measures. • Develop draft management/ regulatory mechanisms to support implementation and enforcement of the zoning framework. • Update national laws to reflect new regulatory mechanisms	HIGH (Medium Term)	UNDP; UNEP (Nairobi Convention); Commonwealth Secretariat; WWF; TNC	A range of options are available to address this. The simplest option would be to amend the Territorial Sea and Exclusive Economic Zone Act. However, this will need to be determined by the Steering Committee.	 

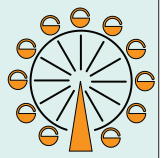
DRIVERS & GOALS

Define and prioritize goals and objectives for the MSP

The rationale behind initiating MSP in the United Republic of Tanzania (URT) is grounded in the manifestos of the ruling parties and the comprehensive national development frameworks for both Mainland Tanzania and Zanzibar. To ensure effective MSP, it is imperative to clearly articulate the goals and provide well-defined policy guidance for ocean affairs. It is crucial to establish an overarching vision, goals, principles, and objectives for MSP, as they form the foundation for its future implementation. Consequently, the initial step in developing a national MSP framework will involve setting goals to guide the process.

The desired outcomes include the establishment of a well-defined framework for the Vision, Goals, and Strategic Objectives of the MSP, which should accurately reflect the needs and aspirations of all stakeholders involved in the United Republic of Tanzania's (URT) marine space. Additionally, there is a need to establish a set of universally agreed principles to provide guidance for the development of MSP throughout the URT.

Table 6.5: Summary of MSP implementation plan activities and tasks to define and prioritize goals and objectives for the MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Define and prioritize goals and objectives for MSP through a collaborative 'Future Scenario Planning' process.	• Recruit a technical expert to lead the scenario-planning process. • Work with the Steering Committee to develop a number of different development scenarios. • Undertake a multi-stakeholder "Future Visioning" exercise to determine the preferred future development scenario for the URT.	HIGH (Short Term)	TNC; CORDIO; WIOMSA	• The outcome of this Activity should inform the development of the policy framework proposed • The process should involve a broad base of stakeholders, from Government, academia and civil society.	 

GEOGRAPHIC BOUNDARIES & SCOPE

Define geographic boundaries and planning areas

In order to address the specific circumstances of Mainland Tanzania and Zanzibar, it is important to recognize that while an Exclusive Economic Zone (EEZ)-wide MSP is needed, the majority of marine activities are concentrated within the coastal zone or territorial waters of each region. Consequently, coastal planning requires a higher level of resolution compared to the EEZ area due to lower activity levels and limited information availability. Moreover, coastal planning activities should also consider the unique characteristics of Mainland Tanzania and Zanzibar, as well as the management of other key sectors, including Local Government Authorities (LGAs). To facilitate effective management, it is recommended to implement a system of spatially defined 'marine planning areas' that divide the marine space into more manageable blocks, while also recognizing the jurisdictional boundaries of different levels of government.

The desired outcomes consist of two aspects. Firstly, it is essential to establish clear legal boundaries for the maritime jurisdiction of the United Republic of Tanzania (URT) in accordance with the provisions outlined in the United Nations Convention on the Law of the Sea. This ensures a solid foundation for the URT's authority in managing its maritime resources. Secondly, there is a need to develop a spatially defined and mutually agreed system of planning areas that aligns with the respective functions, powers, and responsibilities of different levels of government in both Mainland Tanzania and Zanzibar. This system will serve as a framework for conducting MSP planning activities, allowing for effective coordination and collaboration among the various governmental entities involved.

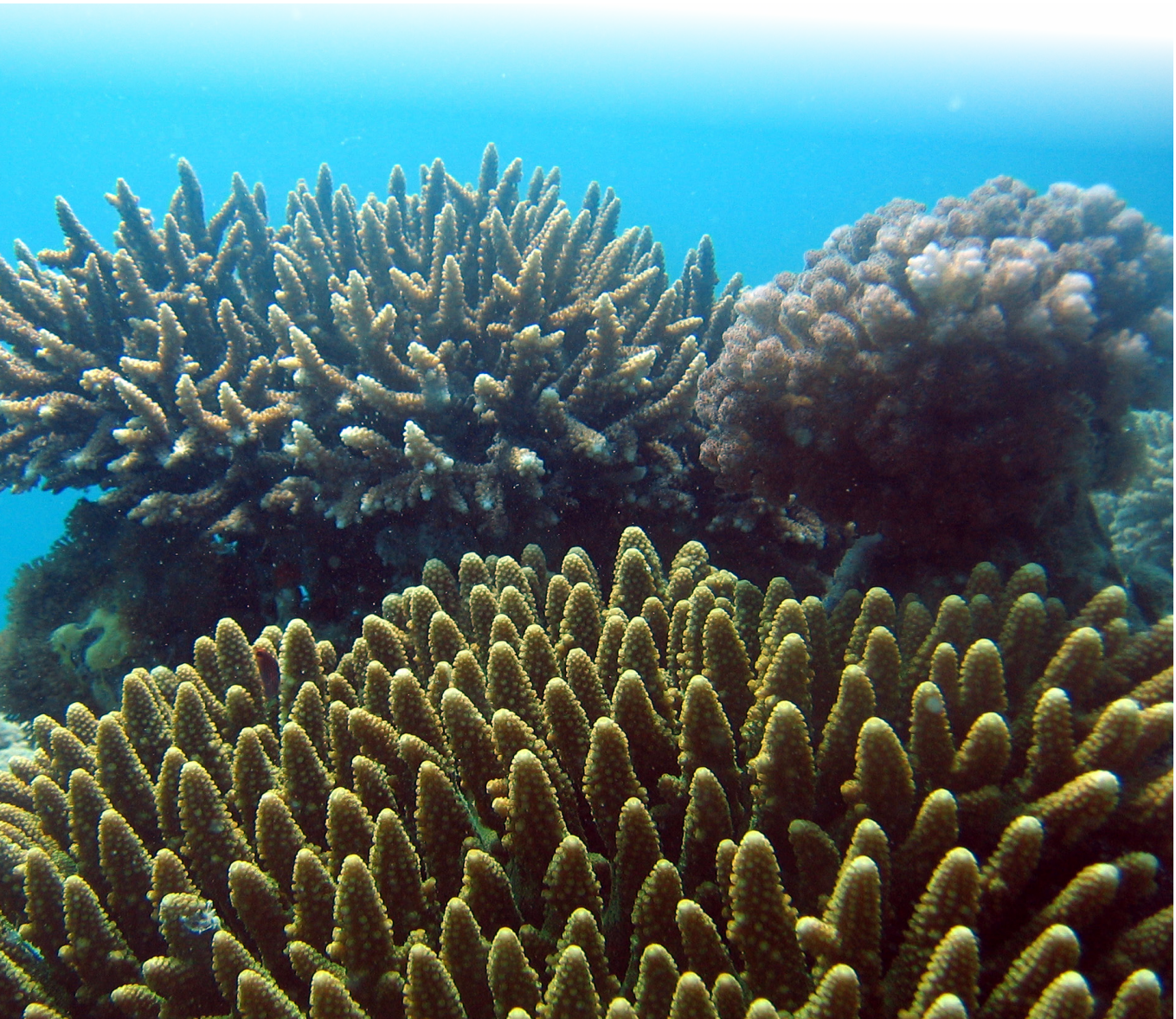
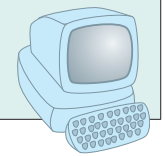


Table 6.6: Summary of MSP implementation plan activities and tasks to define geographic boundaries and planning areas

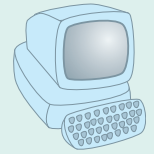
Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Prepare a systematic framework of planning areas that recognises: (a) the different levels of jurisdiction involved in planning and management of the URT's marine space: and (b) the level of knowledge and understanding available to support planning and decision making across different parts of the URT's marine space.	• Convene a sub-group of the Steering Committee to lead the process. • Review pre-existing frameworks and evaluate possible options for a system of planning areas • Undertake consultations with relevant stakeholders • Present final draft to the MSP Steering Committee for approval/adoption under the joint VPO-MoBEF implementation mechanism.	HIGH (Short Term)	TNC; WWF; MCS	This is a process that must be driven by the Steering Committee but with technical support as required.	 

Understand the jurisdictional limits of internal, territorial and EEZ waters

The jurisdictional boundaries of a State to govern and oversee activities conducted within its marine space are determined by the LOSC. To ensure a comprehensive MSP process, it is crucial to conduct thorough planning assessments regarding the sectoral jurisdiction related to areas such as Environment, Fisheries, Aquaculture, Maritime Transport, Energy, Oil and Gas, and other relevant jurisdictional matters. These assessments must align with existing policies, legal frameworks, and institutional arrangements within the United Republic of Tanzania (URT). This approach will facilitate effective coordination and integration of various sectors within the MSP framework.

The desired outcomes entail two aspects. Firstly, it is important to clearly define the jurisdictional boundaries for different levels of government in relation to their roles in MSP and broader coastal resource management. This will provide clarity and guidance on the responsibilities and authorities of each level of government in implementing MSP initiatives. Secondly, there is a need to amend relevant legal instruments to ensure legal certainty regarding the delineation of jurisdictional levels. These amendments will help establish a solid legal framework that supports effective coordination and governance of MSP activities.

Table 6.7: Summary of MSP implementation plan activities and tasks to understand the jurisdictional limits of internal, territorial and EEZ waters

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Undertake a review of the Territorial Sea and Exclusive Economic Zone (TSEEZ) Act as part of the MSP process.	• Prepare amendments/updates to the TSEEZ Act to address MSP planning mechanism. • Draft amendments to the Act. • Submit for Parliamentary approval.	HIGH (Medium Term)	N/A	• In the long-term, it is desirable to include the ECS within the overall MSP framework. • Inclusion of the CS will need to reflect the limitations of the jurisdiction over the water column above the ECS	
Enhance Inter-sectoral collaboration with respect to internal waters and determine the extent of MSP for local-level spatial plans.	• Undertake a review of relevant legal instruments in consultation with relevant government stakeholders. • Undertake consultations with key sectoral counterparts. • Evaluate possible division of responsibilities for MSP between sectors. • Prepare guidance on how the development of MSP should incorporate relevant elements of inter-sectoral MSP planning and resource management.	HIGH (Short Term)	N/A	This is essentially a Government driven process that must reflect the specific arrangements both in Mainland Tanzania and Zanzibar.	 

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Define and agree upon a definitive value describing the spatial extent of the various maritime zones relative to the agreed URT maritime baseline.	• Confirm a definitive URT-wide set of baseline and maritime boundary coordinates • Undertake a GIS analysis based on the agreed coordinates • Consult and agree upon spatial extent of each of the maritime zones • Update relevant government documents with agreed spatial extents.	LOW (Long Term)	TNC	This is necessary to ensure consistent use of data in government-wide reports and documents	

Establish what existing and future uses need to be addressed

Within the limits of the United Republic of Tanzania's (URT) marine space, there is a variety of existing and proposed activities that have the potential to operate. While the Governments of Zanzibar and Mainland Tanzania have initiated the identification of priorities for blue economy development, these processes require further elaboration to identify comprehensive development opportunities and effectively plan for and stimulate their potential growth through MSP. Given the potential conflicts that may arise between different activities, it is crucial to fully comprehend these conflicts and establish coordination mechanisms involving various management bodies. This understanding is essential for the development of a robust MSP framework that can effectively address and manage these conflicts.

The desired outcomes consist of three aspects. Firstly, there is a need to develop a comprehensive understanding of the types and scope of activities currently taking place within the maritime waters of the United Republic of Tanzania (URT). This includes conducting a thorough assessment of ongoing activities to gain insights into their nature and extent. Secondly, it is important to compile authoritative data layers for each activity, which will be incorporated into the MSP and Geographic Information System (GIS) data analysis. This ensures accurate and reliable information for further analysis and decision-making processes. Lastly, there is a requirement to undertake spatial analysis, utilizing the data gathered, to identify and assess the human uses of the URT's maritime waters and potential areas of conflict. This analysis will provide valuable insights into the spatial dynamics, potential conflicts, and areas requiring coordinated management within the URT's maritime territory.

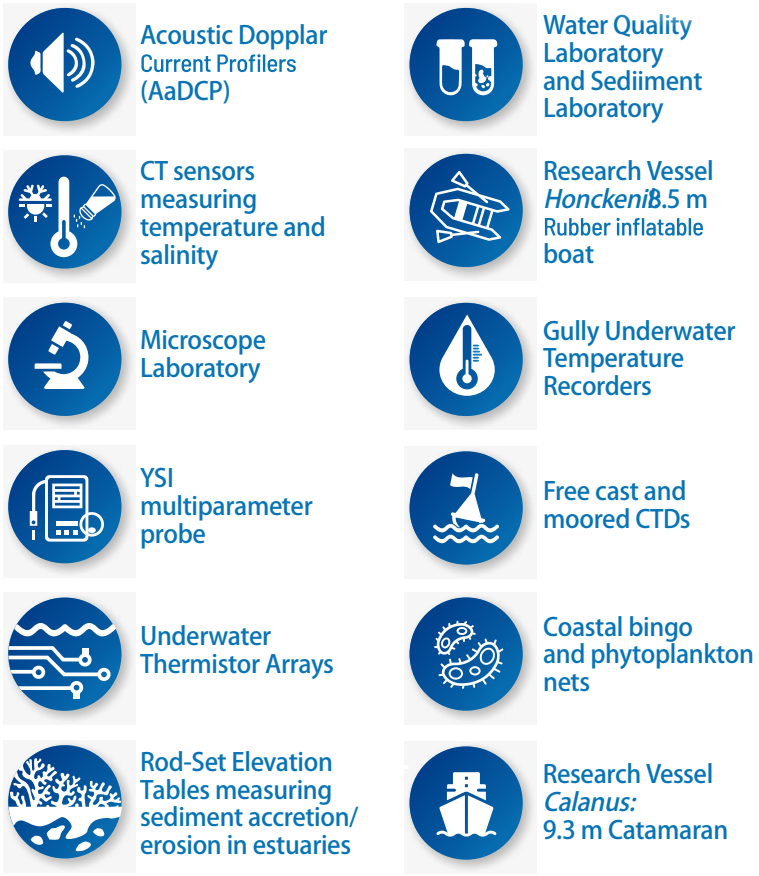
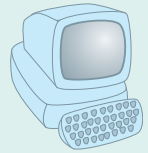


Table 6.8: Summary of MSP implementation plan activities and tasks to establish existing and future uses need to be addressed in MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Define the scope of existing and future uses to be included in MSP.	• Identify and map the full range of activities undertake in the URT's maritime waters. • Based on the future vision scenario prepared under 1.2.1 above, identify future uses and their spatial demands. • Assess individual and cumulative impacts of activities and compatibility/ incompatibility of different activities.	HIGH (Short Term)	UNDP; UNEP (Nairobi Convention); FAO	• This is a necessary step to determine the overall scope of the MSP activity. • It is likely that this will be achieved through the development of the Policy. • Alternatively, this could also be achieved through the completion of a National Blue Economy Status Assessment (or similar process).	 
Prepare a Strategic Environmental Assessment (SEA) for MSP across the URT that takes account of the proposed ports development and related Blue Economy infrastructure.	• Draft ToR for the SEA. • Recruit a technical expert to lead the SEA. • Prepare draft SEA report. • Undertake stakeholder consultation on draft SEA. • Revise draft SEA report based on stakeholder feedback. • Present final draft to Steering Committee for approval/adoption.	MEDIUM (Medium Term)	UNEP (Nairobi Convention); WWF; TNC	• This is not an essential precursor to MSP. • However, there is a need to understand what impacts planned and future development will have on the existing uses of the URT's marine space. • It is suggested that the Scenario-Based Planning activity proposed above should be undertaken prior to any SEA.	 

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
					
Undertake an additional scoping study analysis that assesses the application of MSP to the freshwater bodies of the URT.	• Undertake a policy, legal and institutional analysis relating to the management of freshwater bodies in the URT. (This should include transboundary management mechanisms) • Undertake a full scoping study including data audit and an assessment of existing management mechanisms for freshwater bodies in the URT. • Identify synergies for application of spatial planning concepts to freshwater bodies in the URT.	HIGH (Short Term)	UNDP; TNC	• It has not been possible to assess the specific planning needs for freshwater resources under this scoping study. • However, the broad principles of MSP can equally be applied to freshwater resources. • There is a need to understand the specific policy, legal and institutional arrangements and needs for freshwater in the URT.	 

DATA COLLECTION & MANAGEMENT

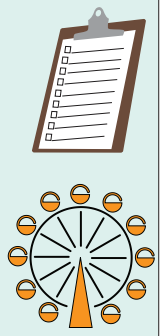
Collate and map spatial data to create GIS layers for MSP

The main objective of marine spatial planning (MSP) is to achieve comprehensive and integrated management of a marine area, and marine spatial data plays a crucial role in enabling this process. By mapping marine resources and consolidating existing data, planners and decision-makers can assess the cumulative impact of various maritime industries on sensitive features. This spatial understanding helps identify conflicts and potential compatibilities between operations and marine ecosystems, considering the risks and opportunities associated with specific activities in particular locations. By utilizing marine spatial data, MSP facilitates informed decision-making and a holistic approach to managing marine resources and activities.

The desired outcomes consist of several aspects. Firstly, there is a need to develop authoritative Geographic Information System (GIS) data layers that accurately represent human uses and key marine environmental factors within the United Republic of Tanzania's (URT) marine space. This involves procuring or obtaining data on crucial human uses from third-party sources. Secondly, there is a requirement to establish a network of researchers and non-governmental organizations (NGOs) with research interests in the URT, who may possess relevant data that can be shared for MSP purposes. Furthermore, it is important to identify future data requirements to support MSP and effective management of the URT's marine space. This includes recognizing relevant data sources that exist outside of the URT and formulating a strategy to acquire and incorporate such data. Lastly, it is crucial to adopt a prioritized marine spatial data capture strategy specifically tailored for the URT, which outlines the necessary steps and methods for collecting essential data to support MSP initiatives.

Table 6.9: Summary of MSP implementation plan activities and tasks to collate and map spatial data to create GIS layers for MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Collate and map existing baseline data and assess future data needs and gaps.	• Develop a detailed seabed habitat map of the entire coast and EEZ. • Develop authoritative data sets/layers of human uses to include in the MSP/ GIS data analysis. • Undertake spatial analysis of human uses and potential areas of conflict within the URT's marine space. • Identify critical data needs and gaps (e.g. seagrass distribution, offshore pelagic fishery resources) that will need to be filled over time.	HIGH (Short Term)	WIOMSA; UNEP (Nairobi Convention); IMS; FAO; CORDIO	• The initial data audit needs to be undertaken. During this scoping study provides a basic snapshot of existing Government -held data. • Further, more detailed work is required to better understand the quality of the existing data and to prioritise the most critical data gaps with respect to MSP. • Furthermore, no assessment has yet been undertaken of the data held by researchers and civil society, some of which is likely to be detailed and comprehensive. • This process must therefore involve all existing data holders across the URT. • This will require GIS trained technicians to undertake data collation and mapping activities.	 

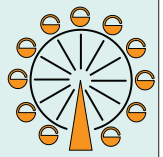
Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Develop a comprehensive data capture/procurement programme	• Identify possible sources or mechanisms through which to procure data. • Develop a strategy that identifies, as a minimum, key data needs, where the data exists or can be obtained from, the mechanism for obtaining/procuring the data. • Prioritise data gaps/needs. • Identify data sources, availability, costs and licensing requirements (include satellite imagery, bathymetry, research cruise data for offshore waters etc.).	HIGH (Short Term)	WIOMSA; UNEP (Nairobi Convention); IMS; FAO; CORDIO	• Procurement in this sense includes data sharing with other data holders, new research and data collection and the purchase of commercially available data (e.g. AIS data for shipping). • Data collection will be an ongoing and iterative process throughout MSP. • This is necessary to ensure the limited resources that are available are targeted at the highest priority areas. • Note that this process will have significant flow on benefits for the URT in terms of improving the knowledge base for future planning and decision making.	

Establish robust data management and mapping systems

Access to dependable data is essential for making informed management decisions in the MSP process. To facilitate this, numerous initiatives have been undertaken to establish efficient data storage and management systems, as well as populate these systems with existing data in both Mainland Tanzania and Zanzibar. It is crucial that the data storage and management systems align with the requirements of MSP, taking into account the specific needs and characteristics of the MSP framework. The design and implementation of such systems should consider the comprehensive data collection, storage, and retrieval necessary for effective MSP implementation.

The desired outcomes consist of two aspects. Firstly, there is a need to establish a state-of-the-art and sustainable data storage and access system that can effectively support the MSP process and fulfill the data management needs. This system should be capable of storing, organizing, and providing access to the vast amount of data required for MSP implementation in a reliable and efficient manner. Secondly, it is important to develop a comprehensive inventory and meta-database that catalogues and consolidates existing data and information relevant to the marine space of the United Republic of Tanzania (URT). This inventory will serve as a valuable resource, facilitating easy access to and retrieval of pertinent data and information for decision-making and analysis during the MSP process.

Table 6.10: Summary of MSP implementation plan activities and tasks establishment of robust data management and mapping systems in MSP

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Establish protocols and a national-level marine spatial data clearing mechanism to allow for the sharing of data between different institutions and organisations.	• Establish TWG to review data sharing and management requirements. • Select technical partner. • Develop draft Data Sharing Agreement (DSA). • Develop data storage and handling guidelines for all marine spatial data. • Undertake an audit of IT-infrastructure needs and existing capability that may be applicable to support data management and analysis. • Decision on whether to proceed with such a mechanisms for the URT. • Identify initial data themes and priorities. • Acquire existing data and identify gaps. • Convene a user group of key stakeholders to undertake alpha-testing of the system. • Refine site to support development of MSP in line with the MSP Framework.	HIGH (Long Term)	WIOMSA; UNEP (Nairobi Convention); IMS; FAO	• A range of existing platforms have been identified. • It is recommended to utilise one of these and to have a duplicate platform of the same data held in a Mainland Institution and a Zanzibar institution. This will provide for redundancy in the hardware. • A sustainable funding source will be required to ensure the long-term support of such a mechanism.	  

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
	• Undertake beta-testing of site and functionality. • Portal development and implementation.				
Undertake an audit of international MSR undertaken in the URT's marine waters and determine how to capture data from researchers.	• Engage with key agencies, researchers and environmental organisations with a history of research and marine data collection in URT. • Prepare an inventory of known data sets/information that is available in URT. • Assess the feasibility of digitising key marine datasets and making them publicly available. • Identify possible researchers (e.g. MSc students) who may undertake data analysis and digitisation.	LOW (Long Term)	WIOMSA; UNEP (Nairobi Convention); IMS; UNESCO-IOC	This would be an ideal activity to be undertake by an appropriate research institution.	

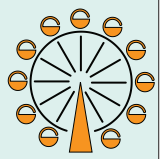
MULTIPLE-OBJECTIVE PLANNING PROCESS

Implement a comprehensive programme for stakeholder engagement

The success of the MSP framework heavily relies on the support of stakeholders in its development and execution. To ensure its effectiveness, it is crucial to adopt a collaborative partnership approach that involves stakeholders throughout the entire process, emphasizing transparency and accountability among all parties involved. Building partnerships between the government, private sector, and civil society is essential to establish shared responsibility for effective management. Additionally, it is vital to conduct a thorough stakeholder identification and mapping process at the beginning of any MSP initiative. Implementing a strategy that prioritizes engagement with diverse stakeholders throughout the MSP project will serve as a significant component of its overall approach.

The desired outcomes of the MSP initiative include a comprehensive understanding of the different stakeholders involved, including their interests and levels of influence. This will enable the development of mechanisms to effectively engage with each stakeholder group. Additionally, a range of communication tools will be prepared to highlight and promote the project. Furthermore, a well-planned schedule will be created, outlining key opportunities for engaging with stakeholders throughout the MSP initiative.

Table 6.11: Summary of MSP implementation plan activities and tasks to implement a comprehensive programme for stakeholder engagement

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Develop and implement a comprehensive programme for stakeholder engagement coastal communities and other stakeholders can be proactively communicated and fully reflected in MSP.	• Identify and recruit a technical partner to support the stakeholder engagement process. • Undertake stakeholder identification, mapping and analysis for each of the defined planning areas. • Identify key forums through which broad engagement with stakeholders can be undertaken. • Develop key communications materials to support stakeholder engagement. • Prepare draft Strategy for review by the PSC. • Revise and finalise Strategy based on feedback. • Hold initial stakeholder workshops in each of the defined planning areas to engage with coastal user groups and industry sectors.	HIGH (Short Term)	TNC; UNDP; UNEP (Nairobi Convention); WWF	• This process should commence at the outset but will continue throughout the MSP process. • A broad range of mechanisms will be required from a simple website, to workshops and community-based consultation. • The process must be overseen by the Steering Committee	  

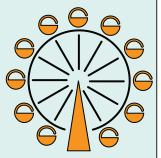
Strengthen existing spatial planning processes and tools

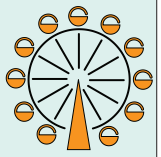
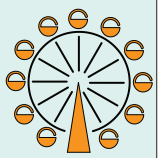
Spatial planning is a widely recognized and utilized tool at various jurisdictional levels and geographic scales within the URT. The existing repertoire of spatial management tools encompasses a diverse array of strategies for managing different marine sectors, which hold significant relevance for a prospective MSP endeavor. Nevertheless, in certain sectors, it becomes necessary to revise existing legal instruments to establish a more defined legal framework that facilitates the implementation of sector-specific spatial management tools.

The desired outcome is to gain a comprehensive understanding of the existing spatial management tools available for utilization within the MSP framework. This understanding will help avoid the unnecessary duplication of efforts and enable the application of already established tools in managing various sectors and activities within the MSP context. The aim is to establish a broad range of legally defined spatial management tools that can effectively regulate and control individual sectors and their associated activities, ensuring efficient and coordinated management within the MSP framework.

Table 6.12: Summary of MSP implementation plan activities and tasks to strengthen existing spatial planning processes and tools

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Adopt a more systematic approach to marine conservation planning that inter alia, considers how other biodiversity objectives can be served using existing spatial designations (i.e. MPAs, CFMAs) and linking these to other spatial management mechanisms.	• Undertake an assessment of the full range of spatial tools currently utilised, both at the national and local levels to manage marine and coastal resources and activities. • Identify gaps and define future spatial management needs to be addressed under MSP. • Undertake a spatial assessment of internal and territorial waters to determine additional marine areas that may warrant greater protection and define the specific mechanisms for their protection (consider also the expansion of existing areas). • Undertake an EEZ-wide assessment of conservation values (with a particular focus on offshore waters) to determine further candidate sites for protection to achieve the URT's biodiversity conservation objectives.	HIGH (Medium Term)	TNC; UNDP; UNEP; WWF	• This activity define priorities for future development of the URT's marine space. • This Activity will need to be undertaken in conjunction with the DSFA, as well as LGAs and local communities.	 

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Update Key Sectoral Legislations to integrate MSP management principles.	• Define legal requirements to be achieved. • Undertake an audit of legal instruments and agency statutory functions, identifying gaps and overlaps to be addressed. • Prepare appropriate legislative amendments to address gaps and overlaps. • Submit for Parliamentary/House of Representatives approval.	MEDIUM (Medium Term)	World Bank; SWIOFISH, UNDP, etc.	• It is understood that for some Acts such as Fisheries Act for Mainland and Zanzibar, and the Maritime Transport Act for Zanzibar, amendments are underway. These legal provisions should be updated to include MSP process.	
Seek to designate 30% of the URT's marine space for protection from the most harmful human activities by 2030.	• Collate existing spatial data relating to MPAs other area-based management tools • Undertake Marxan analysis to identify high value conservation areas • Consult with stakeholders on identified high value sites • Prepare draft MPA framework • Undertake consultation on draft MPA framework and revise accordingly • Establish legal basis for new MPAs throughout the EEZ and territorial sea	HIGH (Long Term)	TNC; UNDP; UNEP; WWF	This Activity will need to be undertaken in conjunction with the DSFA, as well as LGAs and local communities.	

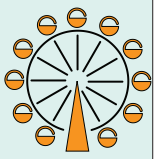
Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Review the existing spatial management measures available to regulate the movement of shipping under the Merchant Shipping Act No. 21 of 2003 and the Maritime Transport Act No. 5 of 2006 respectively.	• Develop a representative spatial data set of international shipping movements throughout the EEZ (AIS data). • Identify key sites/activities that are vulnerable to the impacts of shipping. • Assess shipping risks (both present and future forecast). • Review suitable mechanisms and their impacts on other users. • Propose mechanisms for adoption through the IMO • Submit proposals to IMO (as necessary and appropriate).	LOW (Long Term)	IMO; UNDP; UNCLOS; etc.	• This should be done in the context of the proposed SEA under Activity 3.3.2. • Specific measures may need to be adopted through the IMO. • The assessment should consider all shipping movements throughout the URT's marine space.	
Establish a clear legal basis for the protection of subsea pipelines and cables.	• Define legal requirements to be achieved. • Undertake an audit of legal instruments and agency statutory functions, identifying gaps and overlaps to be addressed. • Prepare appropriate legislative amendments to address gaps and overlaps.	LOW (Long Term)	UNDP; UNCLOS; etc.	• This is needed to ensure that subsea infrastructure is protected from other activities that may impact the seabed. • Linkages should be made with existing legislation relating to petroleum exploration and production.	

Define a zoning framework for the URT

Ocean zoning plays a pivotal role in the Marine Spatial Planning (MSP) process by facilitating the management and, when necessary, the segregation of human activities within marine areas. To ensure the effectiveness of zoning, it is essential to establish multiple distinct ocean zones. While zoning is commonly employed for the planning and establishment of Marine Protected Areas (MPAs) in Mainland Tanzania and Zanzibar, there is currently no comprehensive zoning framework in place for non-protected areas within the marine space of the URT.

The desired outcomes include the development of zoning guidelines to provide clear guidance for decision-making processes in establishing zoning within the marine space of the URT. Additionally, reaching an agreement with stakeholders on the core zones for zoning is a crucial objective. This entails identifying and defining the key areas that require specific management measures. Lastly, the aim is to create a preliminary zoning framework that includes zoning maps, which will serve as visual representations of the designated zones within the URT's marine space.

Table 6.13: Summary of MSP implementation plan activities and tasks to define a zoning framework for the URT

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Prepare an MSP zoning framework to guide appropriate tools for management controls.	• Review/agree upon the criteria for establishing different zones based on both biophysical and management criteria • Consult with stakeholders over the proposed zoning criteria/guidelines • Undertake testing of the guidelines against different zoning scenarios • Review, and update as appropriate, existing non-spatial management measures. • Develop draft management/ regulatory mechanisms to support implementation and enforcement of the zoning framework. • Consult with third parties to determine what cooperative management mechanisms could be adopted to achieve the objectives of MSP. • Communicate new measures through URT website • Update national laws to reflect new regulatory mechanisms	HIGH (Medium Term)	TNC; WWF; WIOMSA; IMS; UNDP; UNEP Nairobi Convention)	The zoning framework should build on existing zoning mechanisms and, to the greatest extent possible, utilise existing spatial management tools	  

Prepare a broad-scale spatial management plan

The spatial management plan is a crucial outcome of the Marine Spatial Planning (MSP) process, serving as a comprehensive framework that directs and guides decisions related to marine spatial management. It represents the culmination of all preceding steps within the MSP process. The spatial management plan plays a pivotal role in shaping the ecological, social, and economic development of the marine management area by identifying specific management measures. These measures are designed to achieve the envisioned future by making explicit decisions regarding the location and timing of human activities. It is important to note that the marine spatial management plan should not be regarded as an endpoint but rather as a starting point towards the implementation of desired goals and objectives.

The desired outcome is the official adoption of the final spatial management plan for the URT. This entails a formal acceptance and approval of the plan by relevant authorities and stakeholders involved in the marine spatial planning process. The adoption of the plan signifies its official recognition as the guiding document for managing and making decisions related to marine spatial management within the URT.

Table 6.14: Summary of MSP implementation plan activities and tasks to prepare a broad-scale spatial management plan

Activity	Key elements or steps for implementation	Priority/ Timeframe	Potential partners	Comments, critical conditions, and linkages	Output type
Develop a comprehensive Spatial Management Plan for the entire EEZ which clearly sets out the Government's management objectives and the tools established to achieve those objectives.	• Identify alternative spatial and temporal management measures • Specify criteria for selecting marine spatial management measures • Finalise the zoning plan • Evaluate the spatial management plan and consult with stakeholders • Steering Committee approves the spatial management plan	HIGH (Long Term)	TNC; UNDP; UNEP; WWF	• This is the ultimate goal of the process and the final output. • This may take several years to achieve and will be an iterative process.	

6.1. MSP IMPLEMENTATION, MONITORING AND REVIEW

6.1.1. Implementation

One of the key outcomes of the MSP process is the development of a comprehensive Spatial Management Plan. The plan should be a statement of policy from the Government, in partnership with other key agencies and authorities that are responsible for single sectors. It should present an integrated vision of the spatial aspects of their sectoral policies in the areas of economic development, marine transport, environmental protection, energy and fisheries.

The Spatial Management Plan should be a comprehensive document that sets out the framework and direction for marine spatial management decisions. It will identify when, where, and how goals and objectives will be met and will be based on the agreed zoning framework. The Spatial Management Plan will be supported by a range of non-spatial management tools.

Once such a plan has been developed and adopted, the success of that plan will depend upon its effective implementation. This should include providing clarity around the legal basis for planning and decision-making, the institutional roles and responsibilities for implementing the plan and how the plan interacts with the management of other activities in the URT's marine space.

MSP implementation will be undertaken primarily by the relevant Government agencies under the oversight of the relevant lead MSP Authority, as well as technical expertise from a range of development partners.

It must be recognised that effective implementation of MSP will require human resourcing and long-term funding. A number of funding mechanisms should be explored, beyond project-specific finance, to support sustainable implementation of the MSP.

6.1.2. Monitoring

Since the test of the Spatial Management Plan will be in its implementation, a range of operational procedures are suggested for monitoring, controlling and updating the plan's elements as a direct continuation to formulating its recommendations. Monitoring should occur at two levels:

i. Monitoring the state of the marine environment – examining accumulated information regarding the status of the marine environment as a basis for planning and decision making and for reviewing and revising specific elements of the plan.

ii. Monitoring uses and actions within the URT's marine space – setting conditions on licenses and authorisations and ensuring compliance with those licence conditions as well as monitoring the activities of other users of the area to ensure they are complying with the various requirements set out by the Government. The approach to compliance and enforcement of the plan must be flexible enough to be applied in individual permits, licences or variances as required.

In order to help create momentum in applying, monitoring and updating this plan, it is recommended that a process of adaptive management be implemented as follows:

i. Ongoing monitoring of implementation of plan elements and of developments and events pertaining to the URT's marine space with respect to the plan and its policy measures, in such areas as: governance, regulation, research and knowledge, spatial planning, development plans and construction of infrastructures, environmental quality and relevant international developments.

ii. A five yearly process of monitoring and evaluation and, where necessary, update components and policy measures.

iii. Continued engagement with stakeholders including regional marine management organisations and development partners, in order to discuss the monitoring report and proposals for updating the plan.

iv. Updating the components of the URT's Spatial Management Plan, both regarding policy measures and regarding the spatial structure based on the monitoring findings and improvements in understanding and knowledge of the area.

The adaptive approach shown in Figure 6.1will allow for improved management and responsible stewardship by the Government and relevant stakeholders.

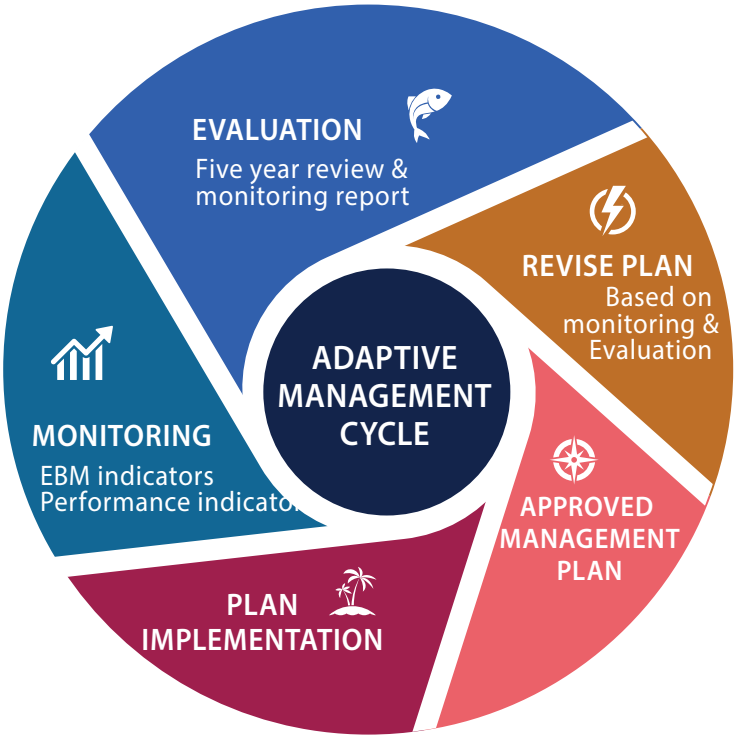


Figure 6.1: The adaptive management cycle for MSP implementation

6.1. PRELIMINARY BUDGET FOR THE DEVELOPMENT OF MSP

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
1. GOVERNANCE ARRANGEMENTS		**$555,000.00**
Result Area 1.1: Establish effective institutional arrangements to support and coordinate MSP		$335,000.00
1.1.1: Define and establish a VPO - MoBEF coordination and implementation mechanism with dedicated technical groups and well-defined roles and responsibilities.	Procurement - Goods	-
	Procurement – Consultants	-
	Consultation Costs	-
	Project Management	$125,000.00
	Sub-total	**$125,000.00**
1.1.2: Establish an effective technical-level mechanism to oversee MSP co-ordination in areas where Mainland Tanzania and Zanzibar have adjacent jurisdictions and common management interests.	Procurement - Goods	-
	Procurement – Consultants	-
	Consultation Costs	-
	Project Management	$100,000.00
	Sub-total	**$100,000.00**
1.1.3: Undertake a Capacity needs Analysis across Mainland Tanzania and Zanzibar.	Procurement - Goods	-
	Procurement – Consultants	$75,000.00
	Consultation Costs	$25,000.00
	Project Management	$10,000.00
	Sub-total	**$110,000.00**
Result Area 1.2: Establish robust implementation mechanisms to support MSP	$220,000.00	-
1.2.1: Prepare an overarching National Ocean Governance Policy for the URT to guide the development and implementation of the blue economy and MSP especially in the EEZ and adjacent area.	Procurement - Goods	-
	Procurement – Consultants	$75,000.00
	Consultation Costs	$35,000.00
	Project Management	$11,000.00
	Sub-total	$121,000.00

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
1.2.2: Establish the legal basis for MSP in Mainland Tanzania and Zanzibar.	Procurement - Goods	-
	Procurement – Consultants	$65,000.00
	Consultation Costs	$25,000.00
	Project Management	$9,000.00
	Sub-total	**$99,000.00**
2. DRIVERS & GOALS		**$99,000.00**
Result Area 2.2: Define and prioritize goals and objectives for the MSP		$99,000.00
2.2.1: Define and prioritize goals and objectives for MSP through a collaborative 'Future Scenario Planning' process.	Procurement - Goods	-
	Procurement – Consultants	$40,000.00
	Consultation Costs	$50,000.00
	Project Management	$9,000.00
	Sub-total	**$99,000.00**
3. GEOGRAPHIC BOUNDARIES & SCOPE		**$842,500.00**
Result Area 3.1: Define geographic boundaries and planning areas		$292,500.00
3.1.2: Prepare a systematic framework of planning areas that recognises: (a) the different levels of jurisdiction involved in planning and management of the URT's marine space: and (b) the level of knowledge and understanding available to support planning and decision making across different parts of the URT's marine space.	Procurement - Goods	-
	Procurement – Consultants	$150,000.00
	Consultation Costs	$125,000.00
	Project Management	$17,500.00
	Sub-total	**$292,500.00**
Result Area 3.2: Understand the jurisdictional limits of internal, territorial and EEZ waters		$192,500.00
3.2.1: Seek an update on the URT's submission vis-à-vis the resources of the extended continental shelf under CLCS	Procurement - Goods	-
	Procurement – Consultants	$45,000.00
	Consultation Costs	-
	Project Management	$4,500.00
	Sub-total	**$49,500.00**

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
3.2.2: Enhance Inter-sectoral collaboration with respect to internal waters and determine the extent of MSP for local-level spatial plans	Procurement - Goods	-
	Procurement – Consultants	$40,000.00
	Consultation Costs	$80,000.00
	Project Management	$12,000.00
	Sub-total	**$132,000.00**
3.2.3: Define and agree upon a definitive value describing the spatial extent of the various maritime zones relative to the agreed URT maritime baseline	Procurement - Goods	-
	Procurement – Consultants	-
	Consultation Costs	$10,000.00
	Project Management	$1,000.00
	Sub-total	**$11,000.00**
Result Area 3.3: Establish what existing and future uses need to be addressed		$357,500.00
3.2.1: Define the scope of existing and future uses to be included in MSP	Procurement - Goods	-
	Procurement – Consultants	$20,000.00
	Consultation Costs	$35,000.00
	Project Management	$5,500.00
	Sub-total	**$60,500.00**
3.3.2: Prepare a Strategic Environmental Assessment (SEA) for MSP across the URT that takes account of the proposed ports development and related Blue Economy infrastructure.	Procurement - Goods	-
	Procurement – Consultants	$150,000.00
	Consultation Costs	$50,000.00
	Project Management	$20,000.00
	Sub-total	$220,000.00
3.3.3: Undertake an additional scoping study analysis that assesses the application of MSP to the freshwater bodies of the URT.	Procurement - Goods	-
	Procurement – Consultants	$40,000.00
	Consultation Costs	$30,000.00
	Project Management	$7,000.00

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
	Sub-total	**$77,000.00**
4. DATA COLLECTION & MANAGEMENT		$2,245,000.00
Result Area 4.1: Collate and map spatial data to create GIS layers for MSP		$1,336,500.00
4.1.1: Collate and map existing baseline data and assess future data needs and gaps.	Procurement - Goods	$100,000.00
	Procurement – Consultants	$75,000.00
	Consultation Costs	$40,000.00
	Project Management	$21,500.00
	Sub-total	**$236,500.00**
4.1.2: Develop a comprehensive data capture/procurement programme.	Procurement - Goods	$650,000.00
	Procurement – Consultants	$250,000.00
	Consultation Costs	$100,000.00
	Project Management	$100,000.00
	Sub-total	**$1,100,000.00**
Result Area 4.2: Establish robust data management and mapping systems		$908,500.00
4.2.1: Establish protocols and a national-level marine spatial data clearing mechanism to allow for the sharing of data between different institutions and organisations	Procurement - Goods	$500,000.00
	Procurement – Consultants	$250,000.00
	Consultation Costs	$40,000.00
	Project Management	$80,000.00
	Sub-total	**$870,000.00**
4.2.2: Undertake an audit of international MSR undertaken in the URT's marine waters and determine how to capture data from researchers	Procurement - Goods	-
	Procurement – Consultants	$35,000.00
	Consultation Costs	-
	Project Management	$3,500.00
	Sub-total	**$38,500.00**
5. MULTIPLE-OBJECTIVE PLANNING PROCESS		**$1,221,000.00**
Result Area 5.1: Implement a comprehensive programme for stakeholder engagement		$330,000.00

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
5.1.1: Develop and implement a comprehensive programme for stakeholder engagement coastal communities and other stakeholders can be proactively communicated and fully reflected in MSP .	Procurement - Goods	-
	Procurement – Consultants	$50,000.00
	Consultation Costs	$250,000.00
	Project Management	$30,000.00
	Sub-total	**$330,000.00**
Result Area 5.2: Strengthen existing spatial planning processes and tools		$506,000.00
5.2.1: Adopt a more systematic approach to marine conservation planning that inter alia, considers how other biodiversity objectives can be served using existing spatial designations (i.e. MPAs, CFMAs) and linking these to other spatial management mechanisms.	Procurement - Goods	-
	Procurement – Consultants	$75,000.00
	Consultation Costs	$35,000.00
	Project Management	$11,000.00
	Sub-total	**$121,000.00**
5.2.2: Update Key Sectoral Legislations to integrate MPAs, MCAs and other MSP management measures	Procurement - Goods	-
	Procurement – Consultants	$45,000.00
	Consultation Costs	$10,000.00
	Project Management	$5,500.00
	Sub-total	**$60,500.00**
5.2.3: Seek to designate 30% of the URT's marine space for protection from the most harmful human activities by 2030	Procurement - Goods	$45,000.00
	Procurement – Consultants	$70,000.00
	Consultation Costs	$35,000.00
	Project Management	$15,000.00
	Sub-total	**$165,000.00**
5.2.4: Review the existing spatial management measures available to regulate the movement of shipping under the Merchant Shipping Act No. 21 of 2003 and the Maritime Transport Act No. 5 of 2006 respectively.	Procurement - Goods	$60,000.00
	Procurement – Consultants	$50,000.00
	Consultation Costs	$10,000.00
	Project Management	$12,000.00

OVERALL PROJECT BUDGET FIGURE		$4,962,500.00
	Sub-total	**$132,000.00**
5.2.5: Establish a clear legal basis for the protection of subsea pipelines and cables.	Procurement - Goods	-
	Procurement – Consultants	$25,000.00
	Consultation Costs	-
	Project Management	$2,500.00
	Sub-total	**$27,500.00**
Result Area 5.3: Define a zoning framework for the URT		$297,000.00
5.3.1: Prepare an MSP zoning framework to guide appropriate tools for management controls	Procurement - Goods	$45,000.00
	Procurement – Consultants	$125,000.00
	Consultation Costs	$100,000.00
	Project Management	$27,000.00
	Sub-total	**$297,000.00**
Result Area 5.4: Prepare a broad-scale spatial management plan		$88,000.00
5.4.1: Develop a comprehensive Spatial Management Plan for the entire EEZ which clearly sets out the Government's management objectives and the tools established to achieve those objectives.	Procurement - Goods	-
	Procurement – Consultants	$35,000.00
	Consultation Costs	$45,000.00
	Project Management	$8,000.00
	Sub-total	**$88,000.00**

ANNEXES

MARINE SPATIAL PLANNING CASE STUDIES

CASE STUDY ONE: SOUTH AFRICA MSP PROCESS

To support development of a national marine spatial planning process, the Government of South Africa has established a comprehensive spatial management system. Under this system, MSP is to be implemented through a system of binding 'Marine Area Plans', with detailed guidelines and spatial regulations to guide future development. Overall, the approach taken by South Africa is seen to be comprehensive, logical and systematic. In terms of setting up the basic foundations for MSP, this example therefore represents a good model to draw from. The system consists of a number of specific but inter-related elements, which are outlined below:

The framework defines MSP as:

The governance process of collaboratively assessing and managing the spatial and temporal distribution of human activities to achieve economic, social and ecological objectives.

Marine Spatial Planning Framework

The South African Marine Spatial Planning Framework provides high-level direction for undertaking MSP in the context of the South African legislation and policies, as well as existing planning regimes. It describes the process for the preparation and t implementation of Marine Area Plans, to ensure consistency in MSP across South Africa's ocean space.

The framework defines a number of characteristics that will define MSP in South Africa, namely:

i. Area-based
ii. Integrated
iii. Multi-objective
iv. Participatory and coordinated
v. Ecosystem-based
vi. Strategic and future-oriented; and
vii. Continuing and adaptive.

This is to be realised through the achievement of the following four goals, underpinned by 9 MSP principles:

The framework also sets out the following Vision for MSP:

A productive, healthy and safe ocean that is accessible, understood, equitably governed and sustainably developed and managed for the benefit of all.

Marine Spatial Planning Act

The Marine Spatial Planning Act No. 16 of 2018 provides the legal basis for MSP in South Africa. The Act describes the principles and criteria that direct the development of Marine Area Plans. While they set out how marine space should ideally develop, they also apply to the marine planning process itself and the need to balance various interests. Among other aspects, the Act provides for:

i. The institutional arrangements for the MSP to govern the use of the ocean by and across multiple sectors and the draft MSP Act were published to provide a structure for marine planning in South Africa's waters.

ii. The development of marine area plans

Institutional Arrangements

The Department of Environment, Forestry and Fisheries (DEFF) is the lead authority for MSP. DEFF collaborates with all authorities that have relevant statutory responsibilities/mandates. To facilitate this, the Government has established the MSP National Working Group, a technical group responsible for the development of the marine area plans. The Group consists of officials from institutions with marine mandates in the following sectors: maritime transport; tourism; conservation and environmental management; mineral and petroleum resources; energy; fisheries and aquaculture; scientific research; telecommunications; marine heritage; and, defence.

Marine Area Plans

Marine Area Plans are integrated sustainable development plans that recognise that ocean space and resources should be developed sustainably to ensure they can support as many multi sector demands as possible. There is a presumption that all sectors have an equal right to access ocean resources, but that conflicting interests must be balanced in the process of developing a Marine Area Plan. Robust stakeholder engagement and a sound evidence base (in terms of spatial data and information) are therefore essential elements of the planning process.

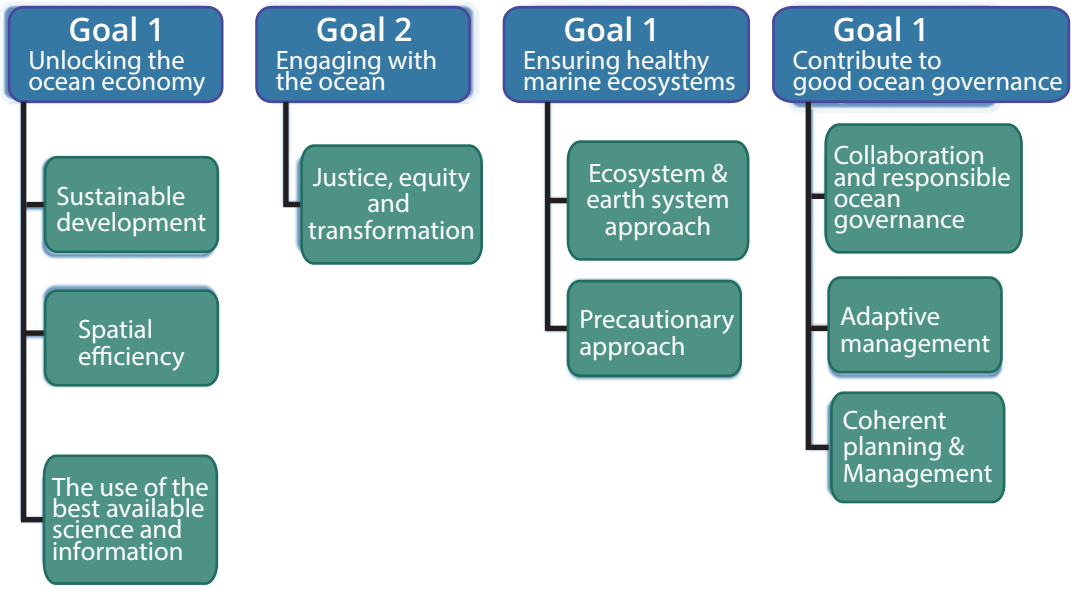


Figure 7.1: Overarching MSP objectives are intended to be achieved over a 20-year period.

To support planning, South Africa's marine area has been divided into four biogeographic planning units: the East Coast, the South-East Coast, the West Coast and the Prince Edward Islands.

Figure 7.2: The biogeographic units for MSP in South Africa

The key elements that Marine Area Plans will consist of, but are not necessarily limited to, are:

a. The Goals and objectives for each Marine Area Plan, and its general and sector development guidelines;
b. The zoning scheme with a description of the zones and their associated regulations that apply;
c. A map that indicates the location of the zones and provides additional information on the location where existing spatial regulations apply (e.g. designated marine protected areas or port limits);
d. An implementation section detailing how the Marine Area Plan will be implemented; and
e. A monitoring and evaluation section detailing how the Marine Area Plan will be monitored and evaluated.

For each Marine Area Plan, a spatial management system is proposed that consists of:

i. **General development guidelines** - to provide a framework for planners and sectoral decision-makers to enable sustainable ocean development throughout the Marine Planning Area.
ii. **Sector development guidelines** - for each specific maritime sectors in the respective Marine Planning Areas. Their aim is to promote the sustainable development of the respective sectors in line with (national and sub-national) sector objectives (e.g. as already specified in sector policies, strategies or plans, or as specified in dedicated consultation processes) and in line with the overall objectives for the particular Marine Planning Area.
iii. **A zoning scheme with spatial regulations** - Zone in the context of the zoning scheme of the Marine Area Plans means a defined category of sea use that is shown on the map for the Marine Area Plan. Zones go beyond the general and sector development guidelines in that they pre-define desired combinations of use

for specific marine areas. They are arranged in the Marine Plan Area in such a way as to enable the best possible pattern of use.

Zones allow priorities to be set for certain uses and activities based on criteria such as suitability and compatibility, and can be used to restrict activities in certain marine areas. Zones and their regulations are based on the following types of use:

i. Primary use is an activity that is given priority in a particular zone. Other activities are only allowed in the zone if they do not impede the primary use.

ii. Consent use is an activity that is compatible with the primary use of the zone and] which can be approved in a primary use zone under specified conditions.

iii. Prohibited use is an activity that is not allowed in the zone as it would impede the primary use

Existing sector regulations for specific human activities are not replaced by the zoning scheme, but rather complemented by this area-based management system in that they may become the primary means of implementing spatial planning regulations (For example, in the case of Conservation Zones, a Strict Protection Zone could be delineated on the basis of a pre-existing marine protected areas). The zoning scheme itself, together with the consent and prohibited uses for each zone and including the conditions under which consent uses can be approved in a primary use zone, will need to be developed in close collaboration with the respective stakeholders.

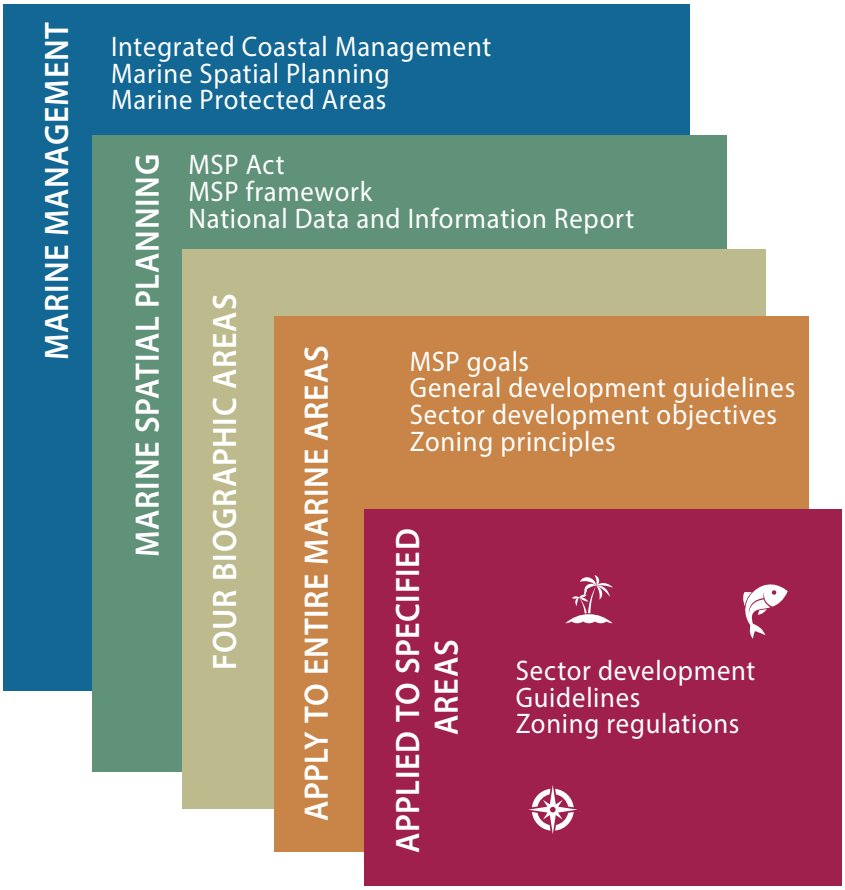


Figure 7.3: South Africa MSP Framework

Knowledge and Information System

The Knowledge and Information System, is a requirement under the Marine Spatial Planning Act and the National Framework for Marine Spatial Planning. It will provide both an evidence base to design marine area plans and to collate the spatial layers that are needed to design the marine plan. To this end, South Africa has focused heavily on collecting and collecting marine spatial data which is being used to inform planning decisions throughout South Africa.

Figure A comprehensive National MSP Data and Information Report has been prepared (containing a comprehensive data audit of existing marine spatial data as well as the development of an open source The National Oceans and Coastal Information Management System (OCIMS) provides decision support for the effective governance of South Africa's oceans and coasts.[https://www.ocims.gov.za/marine-spatial-planning-support/]

Key challenges

South Africa's MSP Framework acknowledges that consistent and early participation of stakeholders is important. However, a lack of government capacity in this regard has led to the exclusion of academics with valuable expertise in MSP processes, as well as marginalizing small-scale fisheries communities and other stakeholders. Upskilling of officials to facilitate inclusive participatory processes, the inclusion of researchers as well as capacity-building of affected stakeholders is, therefore, a crucial requirement going forward. Additionally, as MSP has only recently come into force in South Africa, the mitigation of inter-sectoral conflicts through trade-offs is only in the initial stages. Fragmented and unstable governance systems, characterized by a lack of integration, coordination, and transparency, are some of the key challenges impacting the development of MSP in the region.

Challenges to collecting necessary data have included sourcing data usage agreements and the establishment of a data management-hosting platform. Current data gaps include both biophysical and socio-economic data.

CASE STUDY TWO: GREAT BARRIER REEF MARINE PARK AUTHORITY PLANNING ARRANGEMENTS

Overview

One of the earliest and best-known examples of marine spatial planning is Australia's Great Barrier Reef Marine Park (GBRMP), encompassing and extending along 2,300km of the northeastern coast of Australia. This is not a national-scale MSP, but rather a broad scale planning process for a legally designated marine park, administered by a statutory body (the Great Barrier Reef Marine Park Authority), with the goal to "provide for the long-term protection, ecologically sustainable use, understanding and enjoyment of the Great Barrier Reef through the care and development" of the park.

The GBRMP differs from other examples of MSP in that it is primarily regulatory in nature. Effective management of the park relies upon the cooperation of a number of management agencies (both federal and State), using a number of management tools, including many that are regarded as components of MSP (e.g. zoning plans of management, other spatial plans) along with various management approaches (e.g. education, planning, partnerships, enforcement) to control and/or mitigate impacts of various activities (e.g. tourism, fishing, shipping) and to address various pressures/threats such as climate change, water quality, and population growth.

Management Approach

Guided by the principle of balancing conservation and sustainable use, the GBRMP Authority has developed a multiple-use management regime. Spatial planning and zoning are the cornerstones of the management strategy to maintain biological diversity and to manage impacts of an expanding tourist industry, effects of fishing, and impacts of pollution and shipping.

In addition to tourism and recreation, other major industries include the following.

i. **Military Training**: Military training takes place in select areas of the Great Barrier Reef Marine Park, encompassing about 4% of its total area..

ii. **Fishing**: Commercial, recreational, Indigenous and charter fishing target a range of species including fish, sharks, crabs and prawns.

iii. **Commercial shipping**: There are 10 major trading ports and two minor ones along the Great Barrier Reef coast; the waters surrounding most of these ports fall within the Great Barrier Reef World Heritage Area, but not within the GBRMP.

iv. **Scientific research**: Under the GBRMP Zoning Plan, scientific research is permitted in relatively undisturbed areas called Scientific Research Zones.

v. **Traditional uses**: Traditional use of marine resources by Traditional Owners is allowed under all zones in the GBRMP Zoning Plan.

Zoning Plan

GBRMP spatial management is based on eight zones from the least restrictive *general use zone*, in which shipping and most commercial fishing are allowed, to the most restrictive *preservation zone*, in which virtually no use is permitted. The zones (Figure 7.4), designed to protect the Marine Park's range of biodiversity, operate as a connected network and deliver a range of bene-

ACTIVITIES GUIDE
Sea relevant Zoning Pland and Regulations for details

	General use zone	Habitats Protection Zone	Conservation Park Zone	Buffer zone	Scientific and Research Zone	Marine National Park Zone	Preservation Zone
Aquaculture	Permit	Permit	Permit	X	X	X	X
Bait netting	✓	✓	✓	X	X	X	X
Boating, diving , photography	✓	✓	✓				X
Crabbing (trapping)	✓	✓	✓	X	X	X	X
Harvest fishing for aquarium fish, coral	Permit	Permit	Permit	X	X	X	X
Harvesting fishing for sea cucumber, etc	Permit	Permit	X	X	X	X	X
Limited collecting	✓	✓	✓	X	X	X	X
Limited spearfishing (snorkel only)	✓	✓	✓	X	X	X	X
Line fishing	✓	✓	✓	X	X	X	X
Neting (other than bati netting)	✓	✓	X	X	X	X	X
Research (limited impact research	Permit	Permit	Permit	Permit	Permit	Permit	Permit
Shipping in designated shippping areas	✓	Permit	Permit	Permit	Permit	Permit	X
Tourism program	Permit	Permit	Permit	Permit	Permit	Permit	X
Traditional use of marine resources	✓	✓	✓	✓	✓	✓	X
Trawling	✓	X	X	X	X	X	X
Trolling	✓	✓	✓	✓	X	X	X

Figure 7.4: Zoning Planning in the Great Barrier Reef Marine Park, Australia

fits, including benefits to society. The park allows commercial and recreational activities, including some extractive industries, though not mining or drilling for oil.

The multiple-use zoning network provides high levels of protection in no-take zones and very small no-go zones for one-third (117,000 km²) of the Marine Park. The design of these zones maximizes the protection of biodiversity while minimizing the impacts on all other users, including fishermen. The zoning network governs all human activities, providing high levels of protection for specific areas, while still allowing other uses.

Zoning is only one of many spatial management tools used in the GBR. Other spatial layers that overlay the underlying zoning include statutory Plans of Management in key areas, site plans, special management areas and other spatial provisions (e.g. Defence Training Areas, shipping areas, agreements with Traditional Owners). Non-spatial management arrangement include bag limits, size limits and various permit conditions, and temporal management arrangements include seasonal closures at key fish spawning times or temporary closures for short term activities like military training.

Key lessons learnt about zoning and MSP in the GBR

GBR uses zoning by objective rather than zoning by activity

If zoning is used to address all existing activities, it is preferable that zoning be by *objective* rather than by each *individual activity*. The difference between zoning by objective rather than zoning by activity is best explained by an example; a *no-trawling* zone may indicate clearly an activity is prohibited (i.e. all trawling is banned in that zone), but it may not be clear as to why it is banned or what other activities may be allowed or not allowed.

It is also important to note that in each of the zones that have multiple parts in their objective (for example, providing for both conservation and reasonable use), there is a clear hierarchy within the objective, with the second part always being subject to the first (i.e. reasonable use can only occur subject to ensuring conservation).

It can take many years to implement an effective zoning framework

The first zoning plans were progressively developed for parts of the Marine Park in the early 1980s, but it was not until 13 years after the outer boundary of the Marine Park was first declared that the entire GBR was zoned (ie.1988). From 1988 until mid-2004, less than 5% of the entire GBR was zoned in highly protected 'no-take' zones.

Zoning does not imply that an activity may be undertaken without any controls

Activities such as aquaculture or harvest fishing that may or may not have an impact MAY be permitted to occur in that zone but only after undergoing a detailed permit assessment process. The assessment determines whether the specific proposal (such as the actual aquaculture method or proposed location of the harvest fishing) is compatible with the zone objective and meets all the necessary permit criteria.

There is a need to consider the adjacent lands for fully effective marine conservation

Management of the marine realm alone, without working in close partnership with the adjoining coastal waters and catchments, is unlikely to result in effective marine conservation.

The challenge of integrating the land-sea connections recognises that land-sea planning should involve explicit conservation objectives for processes that connect the land and the sea as well as explicit ways of accounting for threats that originate in one realm and affect the other.

Many of the current initiatives undertaken within GBRMPA and other agencies, such as the mapping of coastal ecosystems, the identification of key areas within catchment basins, and working with farmers to minimise their impacts on water quality, are specifically aimed at addressing this land-sea interface and the adjoining coastal waters and catchments.

Zoning may deliver some results very quickly while others may take decades to become apparent

The current management/planning framework has delivered conservation benefits for the entire GBR ecosystem but equally flow-on social and economic benefits for adjacent communities and industries— including the commercial fishing, recreational fishing and tourism industries that rely on the GBR for their livelihoods.

Adaptive management is a key aspect of managing any marine area; it is also important to recognise that some management actions need to be in place for a reasonable period of time to be effective or to enable a reasonable assessment of their effectiveness. Adopting an adaptive management approach also enables managers to be flexible and to expect, and deal with, the unexpected (e.g. climate change was not even considered an important marine issue a decade ago).

Adaptive-management approach is an essential part of effective ecosystem-based management

Many of the reasons why the GBR is a good working example for MSP relate to how management has evolved and adapted, and despite the jurisdictional complexities, continues to be well integrated (e.g. complementary legislation for all State and Federal waters) with good cooperation with most sectors.

Zoning is undoubtedly an important management tool for effective management of the GBRMP. However to remain effective, it must be periodically reviewed, especially considering the enormous changes over the 39 years since the GBR Marine Park came into effect; these include:

i. Rapidly changing patterns of use
ii. Technological change
iii. Social-economic changes
iv. Political changes
v. And most importantly, recognising marine ecosystems are dynamic natural systems subject to a myriad of environmental changes.

Any successful management regime must be adaptable and be able to incorporate such changes and as new information becoming available or as circumstances change. Irrespective of whether a change in marine management results from new data, 'in-the-field' experience, or as a result of external circumstances, all management practices must be periodically reviewed and updated where appropriate.

LEGAL AND POLICY INSTRUMENTS IN MAINLAND

Policy Instruments
The Constitution of the United Republic of Tanzania, 1977
DRAFT Deep Sea Fisheries Policy (2022)
National Five Year Development Plan 2021/22 – 2025/26
The Tanzania Development Vision (2025)
National Environmental Policy (2021)
Wildlife Policy of Tanzania (1998, revised in 2007)
National Environmental Master Plan for Strategic Intervention (2022-2032)
National Policies for National Parks in Tanzania (1994)
National Forest Policy (1998)
National Integrated Coastal Environment Management Strategy (NICEMS)
National Biodiversity Strategy and Action Plan (2015)
National Fisheries Policy (2015)
National Transport Policy (2003)
National Energy Policy (2015)
National Tourism Policy of Tanzania (1999)
Primary Legal Instruments
Territorial Sea and Exclusive Economic Zone Act (No. 3 of 1989)
Deep Sea Fishing Authority Act (No. 1 of 1998)
Deep Sea Fisheries Management and Development Act (No. 5 of 2020)
Tanzania Land Survey Act (No. 18 of 1997)
Environmental Management Act (No. 20 of 2004)
Marine Parks and Reserves Act (No. 29 of 1994)
National Parks Act (No. 11 of 2003)
Wildlife Conservation Act (No. 5 of 2009)
Forest Act (No. 7 of 2002)
Local Government (District Authorities) Act (No. 7 of 1982)
Local Government (Urban Authorities) Act (No. 8 of 1982)
Fisheries Act (No. 22 of 2003)
Tanzania Shipping Agencies Act (No. 14 of 2017)
Merchant Shipping Act (No. 21 of 2003)
Tanzania Ports Authority Act (No. 17 of 2004)
Petroleum Act (No. 21 of 2015)
Tourism Act (No. 29 of 2008)
Secondary Legal Instruments
Marine Parks and Reserves (Declaration) Regulations, 1999
Fisheries (Amendment) Regulations, 2009
Fisheries (Amendment) Regulations, 2020

LEGAL AND POLICY INSTRUMENTS IN ZANZIBAR

Policy Instruments
The Constitution of Zanzibar (1984)
DRAFT Deep Sea Fisheries Policy (2022)
Zanzibar Development Plan (ZADEP) 2021-2026
Zanzibar Development Vision 2050
Zanzibar Blue Economy Policy (2022)
Zanzibar Environmental Policy (2013)
The Forest Policy for Zanzibar (1996)
National Land Policy of Zanzibar (2018)
Zanzibar National Transport Policy (2008)
Zanzibar Development Vision (2050)
Zanzibar Energy Policy (2009)
Zanzibar Oil and Gas (Upstream) Policy (2016)
Zanzibar Tourism Policy (2018)
Primary Legal Instruments
Territorial Sea and Exclusive Economic Zone Act (No. 3 of 1989)
Deep Sea Fishing Authority Act (No. 1 of 1998)
Deep Sea Fisheries Management and Development Act (No. 5 of 2020)
Zanzibar Environmental Management Act (No. 3 of 2015)
Fisheries Act (No. 7 of 2010)
DRAFT Zanzibar Fisheries Bill (2022)
DRAFT Marine Resources Conservation and Management (2022)
DRAFT Zanzibar Fisheries And Marine Resources Research Institute (2022)
Zanzibar Maritime Authority Act (No. 3 of 2009)
Regional Administration Act (2014)
Local Government Act (2014)
Maritime Transport Act (No. 5 of 2006)
Zanzibar Ports Corporation Act (No.1 of 1997)
Oil and Gas (Upstream) Act (No. 6 of 2016)
Zanzibar Tourism Act (No. 9 of 2009)
Secondary Legal Instruments
Marine Conservation Unit Regulations (2013)

ORGANISATIONS CONSULTED

Deep Sea Fishing Authority (DSFA)
European Union (EU)
GIZ
Institute of Marine Sciences, University of Dar es Salaam (IMS)
International Union for Conservation of Nature (IUCN)
Kikosi Maalum cha Kuzuia Magendo (KMKM)
Marine Parks and Reserves Unit (MPRU)
Milele Foundation
Ministry of Blue Economy and Fisheries (MoBEF)
Ministry of Defense and National Service (MoDNS)
Ministry of Energy (MoE)
Ministry of Finance and Planning (MFP)
Ministry of Foreign Affairs and East African Cooperation (MFAEAC)
Ministry of Infrastructure, Communications and Transportation (MICT)
Ministry of Lands, Housing and Human Settlement Development (MLHHSD)
Ministry of Livestock and Fisheries (MLF)
Ministry of Minerals
Ministry of Natural Resources and Tourism (MNRT)
Mwambao Coastal Communities
National Environmental Management Council (NEMC)
Nelson Mandela African Institution of Science and Technology (NM-AIST)
NOVIA UAS
Petroleum Utility Regulatory Authority (PURA)
President's Office Regional Administration and Local Government (PO-RALG) - Mainland
President's Office Regional Administration, Local Government and Special Department - Zanzibar
Prime Minister's Office (PMO)
Sea Sense
State University of Zanzibar (SUZA)
Tanzania Commission for Science and Technology (COSTECH)
Tanzania Fisheries Research Institute (TAFIRI)
Tanzania Forest Services Agency (TFS)
Tanzania Petroleum Development Corporation (TPDC)
Tanzania Ports Authority (TPA)
Tanzania Shipping Agencies Corporation (TASAC)
Tanzania Telecommunications Company Limited (TTCL)
The Blue Ventures
The Germany Embassy
The United Nations Development Programme (UNDP)
The United Nations Environment Programme (UNEP)
UN Women
Vice President's Office (VPO)

Western Indian Ocean Marine Science Association (WIOMSA)
Wildlife Conservation Society (WCS)
WWF, Tanzania
Zanzibar Association of Tourism Operators (ZATO)
Zanzibar Commission for Tourism (ZCT)
Zanzibar Disaster Management Commission (ZDMC)
Zanzibar Environmental Management Authority (ZEMA)
Zanzibar Fisheries Company Limited (ZAFICO)
Zanzibar Lands Commission (ZLC)
Zanzibar Marine and Fisheries Research Institute (ZAFIRI)
Zanzibar Maritime Authority (ZMA)
Zanzibar Petroleum Regulatory Authority (ZPRA)
Zanzibar Planning Commission (ZPC)
Zanzibar Ports Corporation (ZPC)

POSSIBLE SECTOR-SPECIFIC SPATIAL MANAGEMENT TOOLS

SECTOR	SPATIAL MANAGEMENT TOOL
MARINE TRANSPORTATION	Mandatory Vessel Traffic Routes
	Ship Routes/Fairways
	Vessel Traffic Separation Schemes
	Areas To Be Avoided (by vessels)
	Precautionary or Prohibited Areas
	Particularly Sensitive Sea Areas (PSSAs)
	Lightering Areas
	Moving Safety (Buffer) & Security Zones Around LNG Tankers
	Pilot Boarding Areas
	Safety Zones Around Oil Spill Response Operations
PORTS	Safety Zones Around Vessels and Terminals
	Anchoring & No-Anchoring Grounds or Areas
	Security Zones in Ports and Waterways
	Offshore Port Zones for Oil or LNG Transfers
FISHING	Fishery Closures Areas, including Seasonal Closures
	No Trawl Areas
	Critical Habitat Designations
	Artificial Reef Areas
OFFSHORE AQUACULTURE	Offshore Areas Designated for Aquaculture
OIL & GAS	Oil & Gas Lease or Concession Areas
	Areas Withdrawn from Leasing
	Safety Zones Around Offshore Installations
RENEWABLE ENERGY	Wind Farms, Wave Parks, & Tidal Energy Lease or Concession Areas
	Safety Zones Around Wind Farms, Wave Parks, Tidal Facilities
PIPELINES & CABLES	Pipeline Rights-of-Way or Areas
	Communications Cable Rights-of-Way
	Energy Transmission Cable Rights-of-Way
	Cable Lines (not always in Rights-of-Way)
SEWAGE	Sewer Lines and Diffusers
DREDGING	Dredging Sites or Areas
MILITARY	Dredged Material Disposal Areas or Sites (Active & Inactive)
	Military Operations or Exercise/Training Areas (“Hot Zones”)
	Danger, Restricted, or Security Areas
	Missile Testing Ranges
	Submarine Operating Areas
	Water Space Management for Submarine Operations
	Sonar Operating Zones
	Security and Safety Around Naval Ships
	Unexploded Ordinance Areas

SECTOR	SPATIAL MANAGEMENT TOOL
RECREATION	
	Wildlife Viewing Areas
	Personal Watercraft Areas
	Passenger Submarine Operating Areas
MARINE PROTECTED AREAS	Marine Nature Reserves or Ecological Reserves (no take, no access, no impact zones) (IUCN Category 1A)
	Marine Wilderness Areas (Category 1B)
	Marine Parks (Category II)
	Marine Monuments (Category III)
	Habitat/Species Management Areas (Category IV)
	Protected Seascapes (Category V)
	Managed Resource Protected Areas (Category VI)
NATURE CONSERVATION	Fish Spawning Areas
	Fish Nursery Areas
	Marine Mammal Breeding Areas
	Marine Mammal Feeding Areas
	Marine Mammal Migration Routes
	Marine Mammal Stopover Areas
	Seabird Feeding Areas
	Sea Grass Beds
	Coral Reefs
	Wetlands
HISTORY & CULTURE	Protected Archaeological Areas, e.g., Ship Wrecks
	Submerged Archaeological Sites
RELIGION	Ceremonial Sites
	Sites for Collecting Food/Materials for Ceremonies
	Taboo Areas
RESEARCH	Scientific Reference Sites

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Data Audit for Marine Spatial Planning

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
1. BASE MAPS					
1.1 Terrestrial Base Map					
NatGeoStyleBase v10.81	Global	Raster	https://tiles.arcgis.com/tiles/P3ePLMYs2RVChkJx/arcgis/rest/services/NatGeoStyleBase/MapServer	arcgismapserver	
Satellite imagery	Global				
1.2 Marine Base Map					
GEBCO 2022 Grid	Global	ESRI ASCII	https://www.gebco.net/ /	GEBCO / British Oceanographic Data Centre	Open source
(General Bathymetric Chart of the Oceans)					
Admiralty Hydrographic Charts	EEZ	Raster	UK Hydrographic Office	UKHO	Subscription
Coastal geographic features	Mainland	Vector (Point)		IMS	
2. ADMINISTRATIVE BOUNDARIES					
2.1 LGA Boundaries					
Regional Boundaries	Mainland Tanzania	Vector (Poly)	www.gadm.org		Open source
Tanzania border and coastlne indictative	URT	Vector (poly)			Open Source
Urban Areas	Mainland Tanzania	Vector (Poly)	www.gadm.org		Open source
Districts, villages etc	Mainland Tanzania	Vector (Poly)	www.gadm.org		Open source
Tanzania districts	Mainland Tanzania	Vector (Poly)	National Bureau of Statistics	IMS	Open source
Contour layers for Unguja	Unguja Island	vector (line)		Ministry of Land, House and Settlement	
Cadastral Surveyed Plots layers for Unguja	Unguja Island	vector		Ministry of Land, House and Settlement	
Buildings layers of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
Roads layers for Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
Control Points of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
Benchmarks of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
Shehia boundaries of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
District boundaries of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
Regional boundaries of Unguja Island	Unguja Island	vector		Ministry of Land, House and Settlement	
Coral Reefs, Streams, Mangroves, Wells, Caves and bridges and Electrical Lines	Zanzibar	vector		Ministry of Land, House and Settlement	
Coastal line of Unguja Island	Unguja Island	Vector		Ministry of Land, House and Settlement	
	Mainland Tanzania	Vector (Poly)	2021 Survey	Ministry of Lands (Check)	
2.2 Marine Base Map					
Coastline	Mainland Tanzania	Vector (Line)	Digitised from Google Earth	IMS	
Islands	Mainland Tanzania	Vector (Poly)	Digitised from local maps	IMS	Open source
Internal waters	URT	Vector (Poly)	Digitised from coordinates deposited with UNDOALOS	IKI project will give to VPO Mainland and Zanzibar	Open Source
Territorial Sea (URT)	URT	Vector (Poly)	Digitised from coordinates deposited with UNDOALOS	IKI project will give to VPO Mainland and Zanzibar	Open Source
Exclusive Economic Zone	URT	Vector (Poly)	Digitised from coordinates deposited with UNDOALOS	IKI project will give to VPO Mainland and Zanzibar	Open Source
Maritime boundaries	URT	Vector (Poly)	Digitised from points included in bilateral boundary treaties	IKI project will give to VPO Mainland and Zanzibar	Open Source
Bathymetry Zanzibar	Zanzibar	Vector (line)			
Bathymetry inshore	Zanzibar		Digistised from Navigational charts	Dr Zakaria, ZAFIRI	Open source

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
3. MARINE LIVING RESOURCES					
3.1 Marine & Coastal Habitats					
Seabed classification	Global Seafloor Geomorphic Features	Vector (Poly)	_ftn1	http://www.bluehabitats.org/?page_id=58	Open source
Coral reef distribution	URT	Vector (Line)	TanSea/ IMS database	IMS	On Request
Coral distribution	Global	Vector (Poly)	https://data.unep-wcmc.org/datasets/1	World Conservation Monitoring Centre	Open Source
Allen Coral Reef Atlas	Global		https://allencoralatlas.org		Open Source
Coral reef benthic composition	Tanga, DSM, Mafia, Kilwa		20 yrs of in-water surveys	WCS	Online Mermaid
Coral reef benthic composition	Mafia, Kilwa		20 yrs of in-water surveys	WWF	On request
Coral reef benthic composition	Zanzibar		20 yrs of in-water surveys	IMS	On request
Benthic composition - general	PECCA Zone 3		In-water rapid surveys	WCS	On request
Seagrass distribution	Global	Vector (Poly)	https://data.unep-wcmc.org/datasets/7	World Conservation Monitoring Centre	UNEP-WCMC General Data License
Seagrass distribution	Mainland Tanzania		Ongoing research project	"University of DSM Dr Blandina Lugendo"	
Seagrass distribution	Zanzibar MCAs	Vector (poly)	Current research project	Dr Zakaria, ZAFIRI	
Mangrove distribution	Zanzibar	Vector (Poly)	"Digitized from 1990 aerial maps Merged with satellite data of 2000"	Institute of Marine Sciences (IMS)	Open Access
Mangrove distribution	Zanzibar	Vector (Poly)	Ministry of Agriculture survey, 2012	ZAFIRI (Dr Zakaria)	
Mangrove Distribution	Mainland	Vector (Poly)	NAFORMA Survey, 2015	TZ Forest Service	On request
Coastal wetlands??					
Coastal forests??					
Sand					
Mud					
Rocky reef					
Ecological Sensitivity Atlas	Mainland Tanzania	Maps	https://ims.udsm.ac.tz/tansea/	TanSea	On request

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
3.2 Marine Biodiversity					
Various taxa	All TZ maritime waters (& land)		Various sources	TZ National Biodiversity Portal (TANBIF) hosted at COSTECH	Online
Locations of sawfish rostra in coastal villages	Mainland Tanzania	Map	Braulik et al.(2020)		
Humpback whale sightings	Mainland Tanzania	Vector (Point)	Digitised from citizen observation reports since c.2018 (SAMAKI)	IMS	On request
Ceataceans			Braulik et al 2017		
Dolphin sightings	Mainland Tanzania	Vector (Point)	Digitised from field observation	IMS	On request
Dugong sightings	Mainland Tanzania	Vector (Point)	SeaSense and others	IMS	On request
Dugong live sightings & mortalites		not digistised	SeaSense	SeaSense	
Marine mammal nursery areas			observations and Fisheries Annual reports		
Turtle Tracks		not digistised			
Turtle nesting sites	Mainland Tanzania	Vector (Point)	Can be digitised from project data	SeaSense	
Important Bird Areas (IBA)	Mainland Tanzania	Vector (Poly)	Birdlife International	http://datazone.birdlife.org/site/requestgis	On request
Important Bird Areas	Tanzania	Vector (Poly)	unknown	Department of Fisheries, Marine Conservation Nassor Aballa Nassor	Open Access
Shark landings	Zanzibar, DSM, Tanga		Landings data collected by WCS	WCS	Not yet analysed
Shark sightings	Mainland Tanzania	Vector (Point)	Digitised from field observation Matt Richards	IMS	On request
Fish spawning aggregation sites	Mainland Tanzania				
Benthic organisms (??)					

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
Coelacanths - locations where landings reported	Mainland Tanzania	Vector (Point)	Digitised from field observation	IMS	On request
Whale Sharks	Mainland Tanzania	Vector (Point)	Digitised from interviews with fishers	IMS	On request
Whale Sharks Occurance Map	Mafia Island	Map	Rohner et al. (2020)		
3.3 Marine Conservation					
MPAs (Parks/Reserves)	Mainland Tanzania	Vector (Poly)	Various sources	IMS	On request
National Park Saadani	Mainland Tanzania	Vector (Poly)	Tanzania National Parks		Open access
Pemba Marine Conservation Area (PECCA)	Pemba, Zanzibar	Vector (Poly)	MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	Open Access
Mnemba Island Marine Conservation Area	Unguja, Zanzibar		MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	
Tumbatu Marine Conservation Area (TUMCA)	Unguja, Zanzibar		MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	
Changu-Bawe Marine Cons Area (CHABAMCA)	Unguja, Zanzibar		MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	
Menai Bay Marine Conservation Area (MBCA)	Unguja, Zanzibar		MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	
Tanga Coelacanth Marine Park	Tanga	Vector (poly)		Spatial Data will be given to VPO Mainland and Zanzibar	Open access
Tanga Habitat Mapping	Tanga		WIOMSA	MPRU WIOMSA	
Mafia Island Marine Park	Mafia Island	Vector (poly)		Spatial Data will be given to VPO Mainland and Zanzibar	Open access
Mnazi Bay & Ruvuma Estuary Marine Park	Mnazi Bay & Ruvuma Estuary	Vector (poly)		Spatial Data will be given to VPO Mainland and Zanzibar	Open access
RAMSAR Wetland Sites	Mainland Tanzania	Vector (Poly)	RAMSAR Wetlands Sites	https://rsis.ramsar.org/	Open accees
Rufiji Mafia Kilwa RAMSAR boundary	Mainland Tanzania	Vector (Poly)	"MEP consultants Is this correct?"	MoBEF, Department of Fisheries	On request

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
No Take Zones (see below)					
Chumbe Island Coral Park (CHICOP)	Unguja, Zanzibar		MEP Consultants, 2021	MoBEF. Nassor Abdulla Nassor nassorabdulla@gmail.com	
Kwanini Marine Protected Area	N Pemba, Zanzibar		Kwanini Foundation	Kwanini Foundation	
DRAFT NE Coast and marine Plan	Zanzibar			Urban planning lands	
National (Forest) Reserves					
Locally Managed Marine Areas (management zones)					
Community Conservation Association Areas					
World Database on Protected Areas	Global	Vector (poly)		www.protectedplanet.net	
Global					
MODIS-AQUA SST	Global	NETCDF	NASA's OceanColor Web	http://oceancolor.gsfc.nasa.gov/cgi/l3	On request
		Level-3 standard mapped image (SMI)			
		https://oceancolor.gsfc.nasa.gov/docs/format/			
MODIS-AQUA Chlorophyll concentration	Global	NETCDF	NASA's OceanColor Web	http://oceancolor.gsfc.nasa.gov/cgi/l3	Open access
		Level-3 standard mapped image (SMI)			
		https://oceancolor.gsfc.nasa.gov/docs/format/			
Net Primary production	Global	HDF5	· Oregon State University	http://www.science.oregonstate.edu/ocean.productivity/standard.product.php	

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
			Additional studies and data being analysed from the 2018 Nansen cruise		
Ocean currents	WIO	TBC	Acoustic Doppler Current Profiler (ADCP) measurements made during both the 2008 and 2018 Nansen cruises.	· CSMZAE	
Ocean Current Profile (atmospheric pressure, winds, wave spectra, and salinity)	Global	TBC	Various surface current monitoring systems operated via GOOS, IFREMER, NOAA and others using satellite sensors. A variety of different sensor types can be applied in different ways to measuring surface currents.	· NOAA – Global drifter array data. (http://www.aoml.noaa.gov/ phod/dac/gdpdrifter.php) - http://www.oscar.noaa.gov, http://podaac.jpl.nasa.gov	
WORLD Ocean Atlas, Salinity, Temperature, Density, Conductivity, Mixed layer depth, Dissolved Oxygen, Percent Oxgen Saturation, apparent Oxygem Ultilisaton, Silicate, Phospate, Nitrate.	Global	Assci Grid	NOAA https://www.ncei.noaa.gov/access/world-ocean-atlas-2018/	2/5/2022 downloaded CSIRO from NOAA donna.hayes@csiro.au	Open Access
4. MARINE ECONOMIC USES					
4.1 Fisheries					
Fish landing sites	Mainland Tanzania	Vector (Point)	Digitized from field observations and Google Earth	IMS	On request
Fishing ports					
Octopus fisheries	Mainland Tanzania		TAFIRI	TAFIRI/ Dr Semba/Dr Kishe	
Octopus fisheries	Zanzibar		Mwambao MCCN	Mwambao MCCN	
Artisanal fishing patterns	Mkinga, Tanga, Pangani, Bagamoyo, Lindi		SWIOFish study	TAFIRI	
Artisanal fishing patterns	Mafia, Kilwa, Lindi, Mtwara		Mapped by C Muhando for BG	IMS / BG	From 2026

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
Artisanal fishing patterns	N Mkinga CFMA, PECCA zone 3		Participatory mapping by WCS	WCS	On request
Artisanal fishing patterns	Tanga Municipality/ Chongoleani		Mapping by EACOP project	EACOP	
Spatial and temporal map of ringnet fishing effort	TZ Internal & territorial waters	CSV	TAFIRI	TAFIRI	
Shark Net Fishing Loactions	TZ Internal & territorial waters	CSV	TAFIRI	TAFIRI	
Longline Fishing Locations	URT	CSV	DSFA	DSFA	
Spatial and temporal map of SST fronts	TZ Internal & territorial waters	Map	TAFIRI	TAFIRI	
Spatial Map of seasonal upwelling	Mainland Tanzania	CSV	TAFIRI	TAFIRI	
Spatial and seasonal ringnet CPUE	Mainland Tanzania	CSV	TAFIRI	TAFIRI	
Spatial and Seasonal catchs of Makeral, Anchovy and sardines.	Mainland Tanzania	CSV	TAFIRI	TAFIRI	
Stock Assessments Small Pelagics					
Stock Assessments Octopus					
Stock Assessments Prawns					
EEZ fisheries	EEZ		Daily vessel catch reports to DSFA	DSFA	
EEZ fisheries	EEZ		Daily vessel catch reports to DSFA	TAFIRI/ Dr Shaghude/ DSFA	
Offshore Fishing PFA	Mainland Tanzania	CSV	TAFIRI	TAFIRI	
Offshore Catch Componosition, catch rate, Length/Weight	Mainland Tanzania				
LLG fishing effort by year	Mainland Tanzania		TAFIRI	TAFIRI	

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
CFMA's	Mainland Tanzania	Vector (Poly)	Digitised from maps produced by TAFIRI (Mussa Ngosha, GIS specialist) WWF (Langen Matthew, GIS specialist).	IKI will make available to contributing agencies and VPO (Mainland and Tanzania)	Open Source
BMUs locations	Mkinga, Tanga, Pangani, Bagamoyo, Lindi	Vector (Point)	TAFIRI	TAFIRI	
BMUs locations	Kigamboni, Mafia, Kibiti, Kilwa, Mtwara	Vector (Point)	WWF	WWF	
Fishing areas (gear specific) ??					
Temporal/spatial closures ??					
Fish/prawn farms sites	Mainland Tanzania	Vector (Poly)	Digitized from Google Earth	IMS	On request
Seaweed farm locations	Zanzibar - selected sites		Digitised by Mwambao	Mwambao MCCN	
Sea Cucumber farm Sites	Zanzibar	Vector (point)	TanSea	IMS	on request
4.2 Ports & Shipping					
Shipping routes – AIS data as a proxy	Global	Lat/Long; x/y; ASCII	AIS data	https://www.marinetraffic.com/en/ais/home/centerx:47.6/centery:-11.7/zoom:4	Subscription
Ports & harbours	Mainland Tanzania	Vector (Point)	Digitised from Google Earth	IMS	On request
Ports	Zanzibar				
Lighthouses	Mainland Tanzania	Vector (Point)	Digitised from observations (SAMAKI Project)	IMS	On request
Aids to Navigation					
Fuel transfer and storage sites					
(No)-Anchoring areas					
Dredging areas					
Dumping areas	Zanzibar				
Incidents	Zanzibar	text lat lon	Log book data	Zanzibar Maritime Authority	
Conventional vessel movements	TZ maritime waters	AIS tracks	FleetMon	Zanzibar Maritime Authority	
Conventional vessel movements	TZ maritime waters	AIS tracks	Sea Vision AIS	TASAC	
Fulcrom Maritime LRIT	Zanzibar				

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
4.3 Extraction					
Offshore oil and gas concessions	URT	Vector (Poly)	PURA	PURA	TBC
Well-drilling sites	URT	Vector (Poly)	PURA	PURA	TBC
Sub-sea pipelines	Mainland Tanzania	Vector (Line)	PURA	PURA	Open souce
Others(??)					
4.4 Subsea Cables					
Telecommunications cables	SAFE Submarine Cable System - Segment 8	PDF			
Electrical cables					
4.5. Marine & Coastal Tourism					
Hotel/resort areas	Mainland Tanzania	Vector (Point)	Digitised from field observations & Google Earth	IMS	On request
Hotels	Zanzibar	Vector (point)		Department of Fisheries, Marine Conservation Nassor Aballa Nassor	
Small island concession areas	Zanzibar			ZIPA / MoBEF	
Marinas					
Ecotourism sites (e.g whale watching)					
High amenity beaches					
Diving and snorkelling sites	Mainland Tanzania	Vector (Point)	Digitized from field observations	IMS	On request
Water sports areas					
Sportfishing	URT	Vector (Point)	Digitized from field observations	IMS	On request
4.6 Cultural Heritage					
Cultural heritage/historical sites	Mainland Tanzania	Vector (Point)	Digitised from field observation	IMS	On request

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
4.7 Other					
Bathymetry 5m contours	Zanzibar	Vector (line)	GEBCO contours produced by MEP consultants	Department of Fisheries, Marine Conservation Nassor Aballa Nassor	Open access
Bathymetry 100m	Zanzibar	Vector (poly)	GEBCO poly produced by MEP consultants	Department of Fisheries, Marine Conservation Nassor Aballa Nassor	Open access
Outfalls and intakes					
Saltpan areas	Mainland Tanzania	Vector (Poly)	Digitised from field observation	IMS	On request
Zanzibar Mapping Initiative - Pemba Island Orthophoto, 7cm 2017	Zanzibar, Pemba Island	Raster	ZMI and the Revolutionary Government of Zanzibar – Commission for Lands.	http://www.zanzibarmapping.org/#data	Creative Commons – Attribution 4.0 International (CC by 4.0)
Zanzibar Mapping Initiative - Unguja Island Orthophoto, 7cm 2017	Zanzibar, Unguja Island	Raster	ZMI and the Revolutionary Government of Zanzibar – Commission for Lands.	http://www.zanzibarmapping.org/#data	Creative Commons – Attribution 4.0 International (CC by 4.0)
Dar es Salaam Satellite Imageries, 30cm 2018 - DigitalGlobe	Dar es Salaam	Raster	DigitalGlobe	Climate Risk Database https://geonode.resilienceacademy.ac.tz/	License CC-BY-NC 4.0 International (CC-BY-NC 4.0)
Dar es Salaam Satellite Imagery, Q1 2018 - Planet	Dar es Salaam	Raster	Planet.	Climate Risk Database https://geonode.resilienceacademy.ac.tz/	License CC-BY-NC 4.0 International (CC-BY-NC 4.0)
Dar es Salaam Satellite Imagery, Q3 2017 - Planet	Dar es Salaam	Raster	Planet.	Climate Risk Database https://geonode.resilienceacademy.ac.tz/	License CC-BY-NC 4.0 International (CC-BY-NC 4.0)
Dar es Salaam Satellite Imagery, Q4 2017 - Planet	Dar es Salaam	Raster	Planet.	Climate Risk Database https://geonode.resilienceacademy.ac.tz/	License CC-BY-NC 4.0 International (CC-BY-NC 4.0)
" Dar es Salaam Drains"	Dar es Salaam	Vector (Poly and Point)		Climate Risk Database https://geonode.resilienceacademy.ac.tz/	License CC-BY-NC 4.0 International (CC-BY-NC 4.0)
Dar Es Salaam Catchments	Mainland Tanzania	Vector (Poly)	https://hydrosheds.cr.usgs.gov/	Climate Risk Database https://geonode.resilienceacademy.ac.tz/	open source

Theme	Spatial Coverage	Data Format	Data Source	Data Holder/Location	Access
Military installations					
KMKM (coastguard/military police KMP)	Zanzibar	Vector (point)	KMKM		KMKM
5. PORTALS					
ZANSEA	Zanzibar			SUZA	Open source