Scoping for the design of a methodological tool for enhancing the sustainability and suitability of national MSP in NMC countries

Draft Situational Report Tanzania

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Acronyms

AB	Algoa Bay
ABCoDyM	Algoa Bay Collaborative Dynamic Model
ABNJ	Areas Beyond National Jurisdiction
AU	African Union
BMU	Beach Management Unit
CBD	Convention on Biological Diversity
CFMA	Collaborative Fisheries Management Area
COP	Conference of the Parties
DEA	Department of Environmental Affairs
DFD	Department of Fisheries Development
DFNR	Department of Forestry and Non-Renewable Natural Resources
DMR	Department of Marine Resources
EBA	Ecosystem-Based Approach
EBSA	Ecologically or Biologically Significant marine Area
EEZ	Exclusive Economic Zone
GEF	Global Environment Facility
GII	Gender Inequality Index
GIS	Geographical Information System
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone Management
IOC	Intergovernmental Oceanographic Commission
IUCN	International Union for Conservation of Nature

KBA	Key Biodiversity Area
LMMA	Locally Managed Marine Area
MARPOL	International Convention for Prevention of Pollution from Ships
MCDGEC	Ministry of Community Development, Gender, Elderly and Children
MEL	Monitoring, Evaluation and Learning
MKUKUTA	Mpango wa Kukuza Uchumi na Kupunguza Umasikini Tanzania
MPA	Marine Protected Area
MPR	Marine Parks and Reserves
MPRU	Marine Parks and Reserves Unit
MSP	Marine Spatial Planning
MSPA	Marine Spatial Planning Act
NBSAP	National Biodiversity Strategy and Action Plan
NEPSUS	New Partnerships for Sustainable Projects
NGO	Non-Governmental Organisation
NICEMS	National Integrated Coastal Environment Management Strategy
NSGRP	National Strategy for Growth and Reduction of Poverty
OECM	Other Effective area-based Conservation Measure
OUV	Outstanding Universal Value
PPA	Privately Protected Area
SADC	Southern African Development Community
SARChI	South African Research Chair Initiative
SDGs	Sustainable Development Goals

SCP	Systematic Conservation Plan
SEMA	Specific Environmental Management Act
SES	Social-Ecological Systems
STMT	Spatial and Temporal Management Tools
SWIOFish	South West Indian Ocean Fisheries Governance and Shared Growth project
TANAPA	Tanzania National Parks Authority
TCMP	Tanzania Coastal Management Partnership
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNDP	United Nations Development Programme
VCC	Village Conservation Committee
VFC	Village Fisheries Committee
VUI	Visual User Interface
WIO	Western Indian Ocean
WIOMSP	Western Indian Ocean Marine Spatial Plan
WWF	World Wildlife Foundation

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1.Introduction

This situational report provides an overview of the governance context of Tanzania including the ecological, socio-cultural, economic and political factors (challenges and resources) that may impact on and be impacted by the development and implementation of marine spatial planning (MSP) in the country. In order to assess how Spatial and Temporal Management Tools (STMTs) should and could inform the design and implementation of MSP in Tanzania, the report also reviews the current STMTs (e.g. marine protected areas (MPAs), integrated coastal management (ICM), locally managed marine areas (LMMAs) etc.) currently in use in the country as well as supporting legislation. The review also identifies current weaknesses and enablers in implementing these STMTs in the current governance context in general. It also considers lessons from regional MSP processes such as the regional Western Indian Ocean (WIO) strategy for MSP and an MSP pilot project in South Africa that could inform MSP development in Tanzania.

2. Governance context: social-ecological lens

This situational report uses an ecosystem-based approach (EBA) and departs with a social-ecological systems (SES) lens. An EBA is a framework that can underpin the development of integrated ocean management and MSP, where the health of marine environments are recognised as the foundation for preserving the system (Friedrich et al., 2020). A SES approach recognises that human and natural systems are intrinsically and inextricably linked, and therefore promotes systems thinking to define management processes that can adequately consider this complexity (see Virapongse et al., 2016).

The overarching SES and EBA approaches recognise the complexity of ecological systems and therefore recognise the need to consider social, ecological, political and economic factors when working towards sustainable area-based ocean governance processes in MSP (see Domínguez-Tejo et al., 2016).

2.1 Ecological context and implications for MSP

Tanzania's coastline is approximately 2300 km in length and includes five coastal regions (Tanga, Pwani, Dar es Salaam, Lindi and Mtwara) and three large islands (Mafia, Pemba and Zanzibar). The coastline contains several diverse ecosystems including estuaries, mangrove forests, beaches, coral reefs, seagrass beds, and the deltas of large rivers such as the Rufiji, Pangani, Wami and Ruvuma. These coastal districts cover about 15% of the nation's total land area but support approximately 25% of the population, or eight million people. By 2025 it is projected that the coastal population will increase to 20 million (Torell 2004).`About two thirds of the coastline has fringing reefs, often close to the shoreline, broken by river outlets such as the Rufiji Delta, Pangani, Ruvuma, Wami and Ruvu (TCMP 2000). The continental shelf is 5.8 km wide, except at the Zanzibar and Mafia channels where the continental shelf reaches a width of about 62 km. The nation's total estimated shelf area is 17,500 km2. The Exclusive Economic Zone (EEZ) (shared with Zanzibar) has an estimated area of 223,000 km2 (TCMP 2000:1).

Due to population growth and a rising demand for natural resources and economic growth, Tanzania's coastline and waters are under significant pressure. Dynamite fishing, coral and sand mining, salt production and mangrove clearing, have led to coral reef destruction, mangrove depletion, and declining fish stocks. Unfortunately these activities are seen as important income generators (TCMP 2000). These destructive practices have in turn resulted in soil and beach erosion as well as a decline in coastal forests from 59,300 to 1050 km2. Fish catches have also dropped significantly over the years (32% drop between 1990-1994) indicating a clear sign of overfishing. Another concern is that during the past two decades, coastal forests have declined (Torell, 2004).

Figure 1: Map of Tanzania and its Coastal Districts (Torell et al. 2004)

2.2 Socio-economic and cultural context and implications for MSP

Tanzania is characterised by low incomes and low income inequality, ranking 163 out of 189 countries in 2019 on the United Nations Development Programme (UNDP) Human Development Index (UNDP 2021). Average life expectancy is 65.5 years, expected years of schooling is 8.1 years and the mean years of school attendance is 6.1 years (UN 2021). Tanzania also ranked 140 out of 162 countries in 2019 for Gender Inequality Index (GII) which reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity (UNDP 2020). Generally poverty rates are higher in rural areas than in large cities such as Dar es Salaam. In 1999 the government Development Vision 2025 (1999-2025) for Mainland Tanzania which is guided by three principal objectives: (1) achieving quality and good life for all; (2) good governance and the rule of law; and (3) building a strong and resilient economy that can effectively withstand global competition (DV 2025).

There are a number of criticisms levelled at the Vision however, primary among them that there is nothing new in the Vision 2025 that was not covered in the Arusha Declaration, within the globalized context of policy-making, local policy- making organs in poorer countries often play a passive role in directing their

own policies, the ongoing presence of corruption and weak civil society organizations (e.g. opposition parties) as well as growing inequality in the country (Mallya, 2010).

In 2005 the Tanzanian government released its National Strategy for Growth and Reduction of Poverty (NSGRP), popularly known as "Mpango wa Kukuza Uchumi na Kupunguza Umasikini Tanzania ('MKUKUTA')[1] which broadly called for private-sector led, shared growth as the main engine for poverty alleviation (IMF 2011). In order to build a competitive economy attention was focused on actions to stimulate the private sector, focusing on three primary cluster outcomes: (1) Growth and reduction of income poverty; (2) Improvement of quality of life and social wellbeing; and (3) Good governance and accountability. Tanzania has seen three iterations of MKUKUTA (I, II and III). Due to socio-economic challenges such as poverty and unemployment, coastal management programs such as the Tanzania Coastal Management Partnership (TCMP) of 1997 chose to focus some of its effort to create mechanisms for addressing emerging economic opportunities. The TCMP therefore committed to developing investment guidelines for mariculture and tourism (Torell, 2004).

Tanzania is globally recognized as a destination for nature-based tourism. With the country's rich ecological and cultural assets, the tourism sector is seen as providing significant and long-term economic opportunities for the country in the form of job creation (especially for women who make up 72% of all workers in the tourism sector), generating foreign exchange earnings, providing revenue to preserve and maintain the country's natural and cultural heritage, and expanding the tax base to finance development expenditures and poverty-reduction efforts. Due to the world-wide pandemic in 2020, there was a 72% drop in the tourism sector's revenues in 2020 (from 2019 levels), resulting in the closure of businesses and layoffs (World Bank, 2021). Käyhkö et al. (2019) argue that ecotourism often does not benefit local communities in Tanzania and Zanzibar, instead competes with their interests and livelihoods (e.g. fishing grounds and boat-based tour operators or scuba dive boats). If Tanzania does choose to push nature-based tourism, then current ocean and coastal management tools will need to both enable and coordinate this development while ensuring the sustainable use of its natural beauty at the same time. MSP development in the country will also be constrained by current socio-economic challenges such as poverty and inequality and authorities will therefore have to find ways of aligning ecosystem-based MSP to national development directives.

2.3 Political context and implications for MSP

In March 2021, President Samia Suluhu Hassan was sworn in as Tanzania's sixth, and first woman, president, following the death of President John Pombe Magufuli in the same month. Under the new presidency, the government has prioritized efforts to clamp down on corruption, improve public infrastructure systems, improve public administration and accountability, and improve management of public resources for improved social outcomes (World Bank, 2021).

[1] MKUKUTA is mainly for Mainland Tanzania whereas the Poverty Reduction Strategy for Zanzibar popularly known as "Mpango wa Kupunguza Umaskini Zanzibar ('MKUZA') (https://www.socialwatch.org/es/book/export/html/15763)

The 2020 Worldwide Governance Indicators show Tanzania has been somewhat stagnant in most governance indicators between 2012 and 2019 with the exception for control of corruption and political stability/absence of violence (World Bank, 2021). Political stability and less corruption are key characteristics of creating an enabling environment for a successful MSP. The strongest decline in governance indicators has been in the rule of law, governance effectiveness, and voice and accountability whereby political, media and civil society organization's freedoms have continued to be curtailed (World Bank, 2021). Effective governance and the freedom of the media and civil society is essential to being able to develop and sustain effective MSP processes. The state will have to focus efforts on not only creating more freedom and mobility for civil society but look to increasing governance capacity to operate effectively and serve Tanzanianas with transparency and justice.

3. Current ocean governance STMTs and supporting legal frameworks

There are several existing spatial and temporal management tools (STMTs) in Tanzania that can support the development of a MSP process. There have also been previous initiatives related to MSP, such as the 2011 project on developing Environmentally Sensitive Area Maps. According to the Western Indian Ocean Marine Spatial Plan (WIOMSP) strategy, these were developed through the Global Environment Facility (GEF)-supported Western Indian Ocean (WIO) Marine Highway Development Coastal and Marine Contamination Prevention Project, and the maps include base maps, logistics and operation resources maps, shoreline sensitivity maps, biological resources maps and human resource use maps. There are three types of environmental sensitivity maps; tactical maps, strategic maps and operational maps.

According to the WIOMSP, current initiatives to MSP include: (i) under the support of the Oil for Development Programme which aims to update existing spatial data and environmentally sensitive area maps, atlas maps of Tanzania coastal resources (onshore, offshore and terrestrial maps, and to provide online dissemination of geospatial data and environmentally sensitive area maps through the Geonode Platform); (ii) coastal marine dataset study conducted by the consultancy COWI for all government and private institutions; (iii) collection of some datasets to update previous work on environmentally sensitive area maps; (iv) documentation of geospatial data and creation of metadata; (v) storage of documented datasets into a network attached storage; and (vi) development of the Geonode platform.

Tanzania is still in its initial stage of national mainstreaming of MSP however, and now needs sustained support from all partners, including local communities, sectors, intergovernmental and non-governmental organisations (NGOs) to finalise its national work plan for MSP and begin implementation.

3.1 Integrated Coastal Zone Management

Internationally, Tanzania is a signatory of the UNCLOS (1982), the International Convention for Prevention of Pollution from Ships (MARPOL), Bamako Convention, CBD (1992) and the 2030 UN Agenda for Sustainable Development. Nationally, Tanzania has several laws making up the legal framework for managing coastal and marine resources, including the **National Integrated Coastal Environment**

Management Strategy (NICEMS) (2003), the **Environmental Management Act (2004)** and **the National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020**.

The NICEMS (2003) provides an overview of six issues facing the marine and coastal environment in Tanzania and sets out an integrated coastal management (ICM) approach to respond to these challenges. The challenges are listed as: i) improvement of the wellbeing and livelihoods of all beneficiaries of coastal resources; ii) environmental planning and management of key economic opportunities; iii) managing geographical areas of concern and critical habitats; iv) supporting local initiatives decision-making for intersectoral developments and harmonosing national interests with local needs; v) information availability for decision-making; and vi) inadequate human and institutional capacity. The development of the ToR for the MSP will have to consider whether these issues have been adequately met or if they should inform the development of the MSP framework in Tanzania.

The NICEMS outline eight principles and attributes for ICM. These can be summarised as follows:

I. *Coastal development decisions shall be consistent with the government's priority of poverty alleviation and food security*
II. *Local stewardship and decision-making shall be promoted and supported as required by the Local Government Reform Programme. In cases where there is a clear and explicit national interest that overrides local decisions, a consultation process shall occur to find an equitable balance among the interests.*
III. *Integrated approaches to the development of major new economic uses of the coast shall be promoted to optimize benefits and minimize negative impacts. Coastal development and management of economic opportunities shall be guided in a way that is compatible with national development goals and local needs, and protects the environment.*
IV. *Development and conservation interests shall be balanced by protecting areas of high biodiversity and cultural/historic importance and identifying and steering large-scale economic developments to suitable areas. v. Scientific information shall be used to inform decision-making and re-adjust policy implementation as new information becomes available.*
V. *The capacity of Tanzania to sustainably manage the country's coastal resources shall be increased and strengthened by providing information and knowledge to resources users, decision-makers and other stakeholders.*
VI. *Coastal management activities shall proceed incrementally and in-step with the available human and institutional capacity.*
VII. *Tanzania shall adhere to the relevant regional and international ICM conventions to which it is a Party (NICEMS 2003:4)*.

Integrated coastal zone management (ICZM) in Tanzania is currently regulated by several different policies and acts, as will become evident from the following sections.

3.2 Locally Managed Marine Areas / Collaborative Fisheries Management Areas

Co-management of marine resources in Tanzania can be traced back to the 1990s with the Tanga Coastal Zone Conservation and Development Programme established in 1994 (Rocliffe et al. 2014). Six collaborative management areas, known as locally managed marine areas (LMMAs), were established between 1997 and 2001 with no-take-zone that were policed collaboratively between local communities and fisheries officers. According to Rocliffe et al. (2014):

> '*Ecological monitoring since 1999 showed that these closures – the first on the East African coast to be established and actively managed by local fishing communities – had higher densities of fish and invertebrates, leading to positive impacts on local livelihoods*.'

In 2014, 4,096.5km2 were designated LMMAs in Tanzania, locally referred to as collaborative management areas or Collaborative Fisheries Management Areas (CFMAs), covering a 3.5 larger area than MPAs (Rocliffe et al. 2014). Managed marine areas made up 37.6% in 2014 (Rocliffe et al. 2014), therefore reaching the Aichi target of 10%. Mainland Tanzania has 10 MPAs, covering 13% and 12 LMMAs, covering 45.8%, making a total of 58.8% (Rocliffe et al. 2014).

These are formal LMMAs, and according to Rocliffe et al. (2014) they have 'high' success and 'high' potential. Key local-level institutions include Beach Management Units (BMUs) and the key enabling legislation is the **Fisheries Act of 2003** and its principal regulations of 2009. In Zanzibar LMMAs have been ranked with 'medium' success and 'medium-low' potential. Key local institutions include Village Fisheries Committee (VFC) and Village Conservation Committee (VCC) and the supporting legislation is the **Environmental Management for Sustainable Development Act (1996)** and the **Marine Conservation Unit Regulations** (Rocliffe et al. 2014).

There were 179 BMUs in 2014, 68 with management plans and 39 with legal recognition through by-laws, which give communities the power to control **gear restrictions**, **licencing** and otherwise manage local fisheries resources (Rocliffe et al. 2014). These BMUs often establish CFMAs to get increased power and rights over the areas. The CFMAs protect fishing grounds of one or several BMUs and get recognition by first consulting with neighbouring BMUs before establishing a coordination committee (Rocliffe et al. 2014). Once a management plan is drafted and approved by the relevant BMUs, the CFMA can get legal recognition through a District Council by-law. The six current CFMAs have been established across 21 BMUs by the help of the World Wildlife Foundation (WWF) Tanzania in the Mafia, Fiji and Kilwa districts of central Tanzania (Rocliffe et al. 2014).

3.3 Marine Protected Areas

Marine protected areas (MPAs) refer to designated coastal and marine areas that have put in place restrictions in terms of fishing, user group access, gear type use and/or extraction periods (Ratsimbazafy et al. 2019). There are fully and partially protected areas, where the former are often referred to as 'no-take zones' meaning that no fishing, extraction or collection from these areas are allowed (Marine

Reserves), whilst the latter allow for normal activities but under certain restrictions (Marine Parks). MPAs in Tanzania can be divided into two categories, namely Marine Reserves and Marine Parks, and are mainly regulated by the Marine Parks and Reserves Unit (MPRU) under the **Marine Parks and Reserves (MPR) Act of 1994**, whilst some are proclaimed under the Tanzania National Parks Authority (TANAPA) under the **TANAPA Act No. 14 of 1959**, and Mangrove Forest Reserves under the **Forestry Act No. 14 of 2002** (UNEP, 2021).

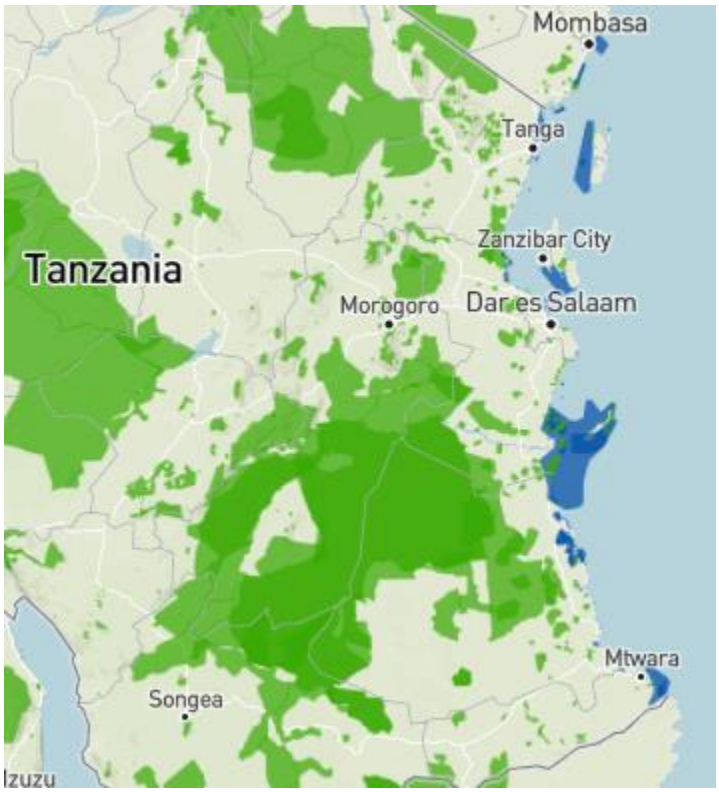

Figure 2. Marine protected areas (in blue) in Tanzania (Protected Planet 2021).

According to Rocliffe et al. (2014), Tanzania has 13% MPA coverage, with 0% effective MPAs. For Zanzibar, Rocliffe et al. (2014) estimates 11.2% MPA coverage with 25% effective MPAs. According to the Nairobi Convention, however, Tanzania has only protected 2,042km2 through their 18 MPAs, resulting in 0.92% of their EEZ. This is also supported by the recent MPA Outlook report on the WIO region, arguing that the total area covered by formal MPAs represents 1% of the country' EEZ (UNEP, 2021:189).

Despite several debates and scepticism among the effectiveness of MPAs (Kaiser 2005; Singleton and Roberts 2014; O'Leary et al. 2018), benefits (Kelleher 1999; First 2009) include, among others:

- Conservation of biodiversity, mostly for critical or attractive habitats of threatened or endemic species;

- Increased fisheries productivity through insurance against stock collapse; buffer against recruitment failure; increase in densities and average size of individual species; increase in species reproduction; more spillover and spawning potential; and increased genetic variability;
- Increased knowledge of marine science through information disclosure, implementation of the precautionary principle, provision of sites for research;
- Creation of safe environments for overexploited species;
- Protection of cultural diversity.

Most MPAs in Tanzania are managed by the MPRU and their main functions are according to the MRP Act of 1994: 'protection of biodiversity and ecosystem functions; controlling over-exploitation of resources and activities in sensitive habitats; and facilitating responsible utilization of coastal and marine resources' (UNEP, 2021:189). Machumu and Yakupitiyage (2013) highlight that MPAs in Tanzania are promoted to mitigate anthropogenic impacts such as overfishing and marine resource extraction, not emphasising cultural and traditional fishing practices or relations to the ocean and coast. Nevertheless, according to the United Nations Environmental Programme (UNEP) (2021:189), the MPRU approach to manage MPAs is co-management and participatory management approaches where 'local community members and other key stakeholders are involved at different levels of management such as planning; decision-making and implementation of conservation activities; benefit sharing and evaluation'.

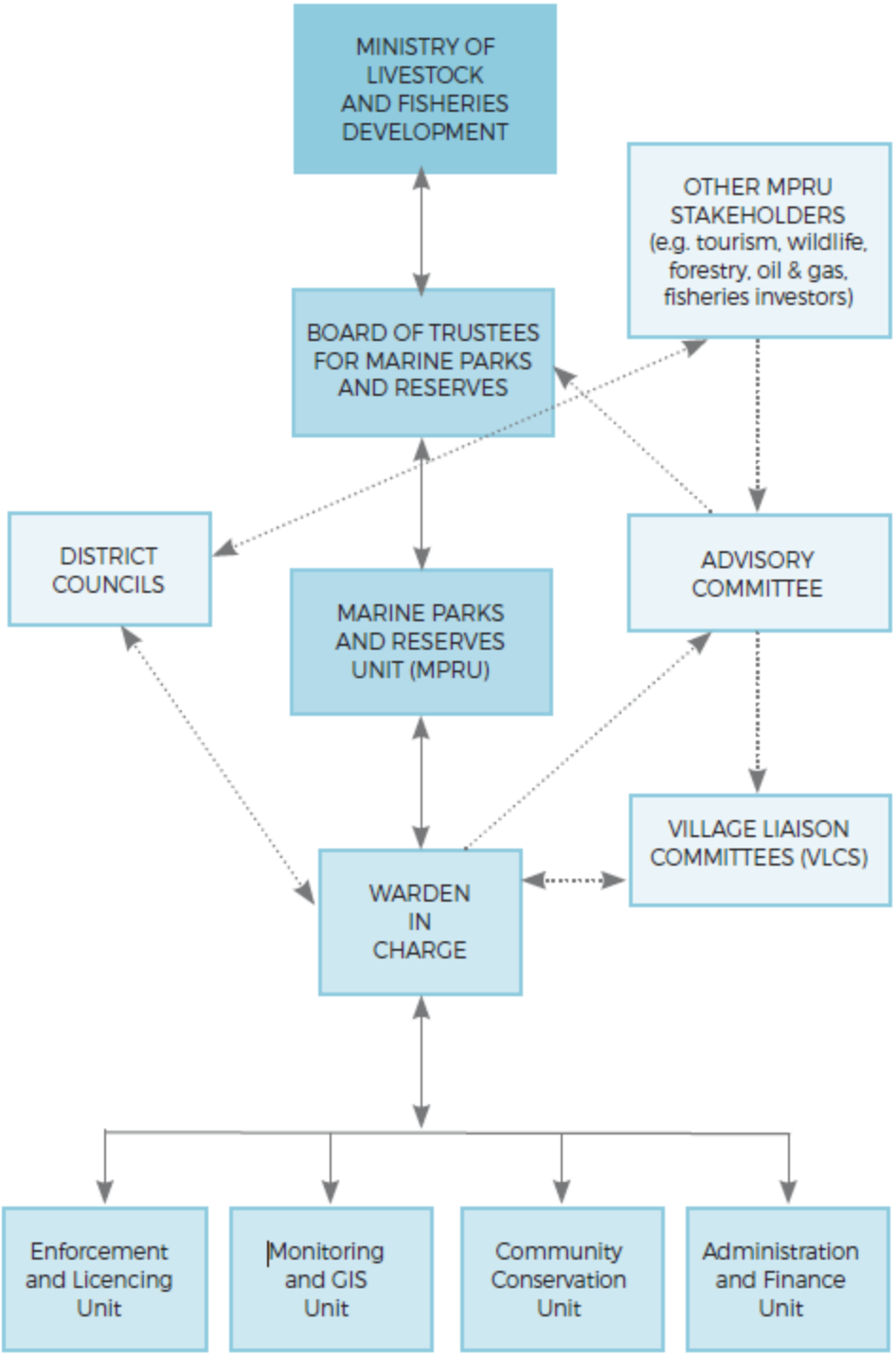

Figure 3. Organisation of MPRU in Tanzania (from UNEP 2021:191).

According to UNEP (2021:192), MPAs in Tanzania presents the following opportunities:

- Presence of tourism attractions/values.

- Diversified source of revenue from oil/gas exploitation projects, tourism investments, user fees, donations.
- Existence of statutory organs (Board of Trustees, Advisory Committees and Village Liaison Committees) at different levels, which support implementation of MPAs activities.
- Support from government and conservation partners (development agency and local/ international NGOs).
- Appropriate policies and laws which support conservation activities.
- Peace and political stability.
- Retention of user fees in the repository account (Conservation and Development Trust Fund).
- Existence of the NICEMS framework that provides links and supports partnership between and within different sectors promoting sustainable coastal development.

However, the MPA Outlook (UNEP 2021:192) also highlights the following risks and threats:

- High levels of poverty among resource users.
- High dependence on natural resources by local communities.
- Potential negative ecological impacts from oil/gas exploration/production (see Case Study, after Table 1).
- Use of unsustainable and highly damaging harvesting methods (blast fishing and beach seine).
- Government scaling down funding due to its high expectations of revenue collection by MPAs.
- Migration of people from inland to coastal areas including the MPAs.
- Political patronage (in most cases weak punishment given to offenders not commensurate with severity of their offences).
- Disconnect between science and management policy.

Currently, the WWF and the Blue Action Fund are working on a project called 'strengthening marine protected areas management in Rufiji, Mafia and Kilwa district in Tanzania' which should inform how MSP can support current MPA management in the country.

3.4 Key Biodiversity Areas

A key biodiversity area (KBA) is defined as 'a site that contributes significantly to the global persistence of biodiversity' (IUCN 2016) and often translates into an area that has several unique species or is home to one particular species that cannot be found anywhere else or only survives in a few locations. KBAs are recognised as locations that are important for the overall health of the planet and the International Union for Conservation of Nature (IUCN) (2016) recognise 11 criteria within 5 categories that need to be met in order to be considered a KBA. These can be summarised as follows:

A. Threatened biodiversity
    a. Threatened species;
    b. Threatened ecosystem types
B. Geographically restricted biodiversity
    a. Individual geographically restricted species

   b. Co-occurring geographically restricted species
   c. Geographically restricted assemblages
   d. Geographically restricted ecosystem types
C. Ecological integrity
D. Biological processes
   a. Demographic aggregations
   b. Ecological refugia
   c. Recruitment sources
E. Irreplaceability through quantitative analysis (IUCN 2016).

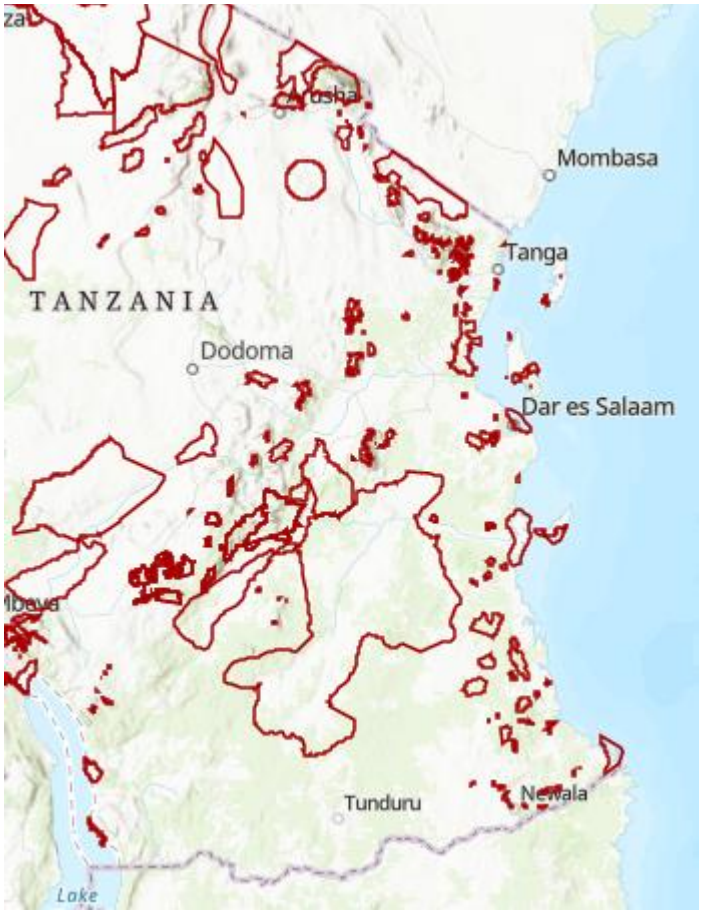

Figure 4. Key biodiversity areas on the coast of Tanzania, as identified by the Key Biodiversity Areas project (KBA 2021).

According to the KBA Project, Tanzania has 153 KBAs where 25% are protected, 45% are partially protected and 30% are not protected (KBA 2021). Of the identified trigger species, 42 are fishes. Some of the main coastal KBAs include Mnazi Bay (99% protected), Mafia Island (99% protected), Rufiji Delta (92% protected), the Dar es Salaam Coast (7% protected) and the Bagamoyo District Coastal Forests (93% protected) (KBA 2021). Overall, Tanzania has quite extensive protection of its coastal and marine KBAs.

3.5 Ecologically or Biologically Significant Marine Areas

Ecologically or biologically significant marine areas (EBSAs) are defined as 'geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics' (CBD Secretariat 2009). The scientific criteria of identifying EBSAs were developed by an expert workshop in the Azores in 2007 and were adopted by the Conference of the Parties (COP) to the CBD in its 19th meeting in Germany in 2008 (CBD Secretariat 2009). The aim of developing these criteria was to 'maintain, protect and conserve global marine biodiversity through conservation and protection of its components in a biogeographically representative network of ecologically coherent sites' (CBD Secretariat 2009). The criteria are as follows:

- Uniqueness or rarity;
- Special importance for life-history stages of species;
- Importance for threatened endangered or declining species and/or habitats;
- Vulnerability, fragility, sensitivity, or slow recovery;
- Biological productivity;
- Biological diversity;
- Naturalness.

Recognised EBSAs in Tanzania include the Pemba Channel, Tanga Coelacanth Marine Park, Unguja on Zanzibar, Rufiji-Mafia-Kilwa, Pemba Bay-Mtwara (part of the Mozambique Channel), the Mozambique Channel and the Northern Mozambique Channel (CBD Secretariat 2016).

3.6 Marine World Heritage Sites

The UN Educational, Scientific and Cultural Organisation (UNESCO) asserts that world heritage sites are recognised through Outstanding Universal Value (OUV) and these were expanded to marine areas with the Everglades National Park (USA) in 1979 and the Great Barrier Reef (Australia) in 1981. OUV in marine areas translates to unique geological processes, exceptional marine biodiversity, singular ecosystems or 'incomparable beauty' (Duarte et al. 2021).

Today, the marine world heritage list extends to 50 ocean areas across 37 nations, where 22 of these are recognised for their invaluable blue carbon ecosystems such as mangroves and seagrass beds (Duarte et al. 2021). Tanzania is home to both of these two ecosystems, particularly near the Rufiji River Delta, and although they are not currently among the marine world heritage sites, there could be future opportunities.

3.7 Other effective area-based conservation measures

Protected areas have been subject to the creation of significant policy and definities for conservation efforts (Dudley 2008). Other effective area-based conservation measures (OECMs) often act as the complementation of area-based management efforts such as MPAs, LMMAs and ICZM, but for private

land conservation purposes. OECM is listed on the CBD Aichi Target 11 as effective for private land conservation (Mitchell et al. 2018). OECM is defined in the draft *Guidelines for Recognising and Reporting Other Effective Area-based Conservation Measures* (IUCN WCPA 2018) as 'a geographically defined space, not recognised as a protected area, which is governed and managed over the long-term in ways that deliver the effective in-situ conservation of biodiversity, with associated ecosystem services and cultural and spiritual values'.

The CBD also recognises that OECM and Privately Protected Areas (PPA) are both effective for private land conservation (Jonas et al. 2021). The IUCN defines a protected area as 'a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values' (Dudley 2008).

The CBD Decision 14/8 (CBD 2018) set out four criteria for identification and recognition of OECMs, such as:

(1) The area is not recognised as a protected area;
(2) The area is somehow governed and managed;
(3) The area achieves sustained and effective contribution to in-situ conservation of biodiversity;
(4) Associated ecosystem functions and services and cultural, spiritual, socio-economic and other locally relevant values are respected, upheld, and supported.

Some countries have initiated the distinction of OECMs and PPAs to determine the appropriate types of private land conservation agreements to apply, such as, for instance, Australia and South Africa, aiming at building national reserve systems that include protected areas of public, private and indigenous governance types (Taylor et al., 2014) or to meet national policy objectives (Mitchell et al., 2018).

Tanzania currently has no recognised OECMs (Protected Planet 2021). OECM can present important additional means as an opportunity to recognise and support the diverse contributions of indigenous people and territories of local communities, as well as areas for nature conservation (IUCN-WCPA 2019; Jonas et al. 2021).

4. Constraints to STMTs

There are some factors that constrain the effective implementation of STMTs in Tanzania and therefore the potential for successful development and implementation of MSP in the country. It is worth noting that many of these constraining factors are not unique to Tanzania but have been identified in other island and coastal nations, especially in the WIO region and the global south more broadly. In general, the current constraints for development and implementation of MSPs in Tanzania are related to the lack of awareness among diverse stakeholders, no existence of a formal and functional stakeholder engagement strategies, inexistence of MSP policies and frameworks, limited institutional capacity, poor integrated governance structures, lack of data, GIS infrastructure and funding (pers.comms. M. Pentzel, Sept. 2021). Conflicts between the establishment of marine areas and resource uses despite legislation in place is also common in the country, whereas economic priorities normally gain prominence (for instance, oil and gas

operations and mining activities within MPAs, despite the existence of Act No. 29 prohibiting mining activities within MPAs) (UNEP 2021).

4.1 Knowledge gaps

Lack of broader understanding of the social-ecological systems and alternative livelihoods and **lack of awareness among the stakeholders regarding MSPs** was identified as one of the constraints for the development and implementation of MSPs. Destructive local practices related to fishing activities (for instance, dynamite fishing, coral mining, and mangrove clearing), has caused mangrove depletion, coral reefs destruction, decline of fish stocks (Torell 2004; Rocliffe et al. 2014). Overfishing is another key concern for marine fisheries, with one-third of all fish stocks overfished (FAO 2016).

Data availability and the need for new data on the key environmental and marine issues with the relevant information, high quality resolutions and appropriate coverage and **Limited access to data and information relevant to MSP (**Pers. comms. M. Pentzel, Sept, 2021) are other gaps**.** There is a need for capacity building through training on MSP implementation, data collection, development of innovative tools for MSP activities, and the development of frameworks for stakeholder engagement and conflict resolution among the diverse actors at national and local levels (WIOMSP 2021).

4.2 Institutional gaps

There is a need for **institutional reform** and policy amendment or development among sectors at local, regional and national scale, as well as between the WIO countries. Normally, the existing national policies are related to cross-scale sectors and not specific to MSP. The **lack of coordination of interventions among the different sectors** poses institutional constraints, along with the compartmentalization of government maritime agencies. There is also limited common vision on the use of sea areas as well as maritime borders. **Limited trust** between stakeholder groups can also hinder effective collaboration among Government agencies, civil society organizations and NGOs.

4.3 Capacity gaps

Local management capacity is normally inadequate, with limited capacity for local communities to effectively manage their marine resources (Samoilys et al. 2017). There is also a **high dependence on external support from local and international NGOs** to manage and implement coastal management initiatives which **limits local autonomy** of local communities (Samoilys et al., 2017). Despite the progress observed in the WIO region, there is a need for improved capacity and awareness for the implementation of MSP, but also for the development of policy and legislation related to national and regional MSPs.

There is also **no formal stakeholder engagement strategy** in place and **no geographical information system (GIS) infrastructure support** (Pers. Comms. M. Pentzel, Sept. 2021), including trained GIS and spatial analysis technicians, softwares and tools to interpret and generate the data necessary to inform policy development.

4.4 Funding gaps

Limited and unsustainable financing represents huge constraints for the design, implementation for STMTs in general (Per. comms. M. Pentzel, Sept. 2021). Access to long-term funding through the identification of innovative financing mechanisms is imperative for effective and sustainable MSP in the WIO region. The ability of many resource management groups to enforce rules and regulations can be undermined by these funding limitations and discourage local coastal communities from participating in these initiatives due to the lack of incentives, equitable sharing benefits and restriction on the access to natural resources (UNEP 2009).

4.5 Governance gaps

Despite the recognition by the Government of the need for an integrated approach to manage the coastal area of Tanzania, there are numerous challenges that undermine the development and implementation of MSPs. Despite having a large EEZ, estimated at 223.000km2, its strategies address mostly inland issues in Tanzania (NICEMS 2000), with the fishers not having access to adequate fishing fleet for deep sea exploitation in the EEZ (NEPSUS 2017).

To address traditional and emerging challenges on governance of water resources, **new integrated and innovative tools and techniques are needed** (Mongi et al. 2015). Its effectiveness depends to a large extent on their **accessibility and use by stakeholders** at each governance scale. In addition, the development and implementation of these tools and techniques should consider technological and institutional aspects at various governamental scales to avoid failures and waste of resources (Mongi et al. 2015).

4.6 Legislative gaps

Legislation is generally **uncoordinated and conflicting** (Samoilys et al. 2017). This poses constraints to regulate marine spatial areas and to the integration of development agendas while ensuring local human wellbeing. The **lack of existing MSP policy and frameworks** also constrains the design and implementation of MSPs (Pers. comms. M. Pentzel, Sept. 2021).

5. Enablers to STMTS

Although not exhaustive, a number of primary enablers have also been identified linked to the effective design and implementation of STMTs in Tanzania. As with constraints, enablers often overlap and enhance each other.

5.1 Improved governance

According to Torell et al.'s (2004) 'orders of outcomes' framework in the context of building an enabling environment at the national scale for ICM, there are first order outcomes which include **creating local and national constituencies** for coastal management; **adopting management plans,** policies, and strategie

and **formalizing a coastal management mandate with implementing authorities**. Supporting the establishment of local and provincial committees for coastal management is important as literature points to the benefits of local residents co-managing the coastal and marine areas they rely on in terms of livelihood needs (Gonzalez-Bernat and Clifton, 2017). Second order outcomes include the successful application of conflict mediation activities (Torell 2004).

MSP is often celebrated as an ocean governance tool which can solve conflicts between different ocean users (Tuda et al. 2014). However, we argue that in order for **MSP** to be effective, MSP should be used less as an approach to conflict management and more as **a tool to find common ground** on certain ecological, economic and social development issues. For example, both governments and local communities seek reduced poverty, increased livelihood opportunities and equality for all. It has been demonstrated that if different stakeholder groups focus on their commonalities in terms of goals, as opposed to their differences, then MSP is more effective in both the short and long term (see the case of Haida Gwaii in Canada in Jones et al. 2017).

5.2 Increased capacity building and secure funding

As noted above, **capacity development** is required in areas such as **conflict resolution, financial management, project planning and marine ecology** (Rocliffe et al. 2014). It should be noted that current literature speaks much to increasing the capacity of local coastal communities (Lucrezi et al. 2019) to effectively be able to participate in MSP processes but increasing the capacity of implementing authorities to be able to listen to and then act on what local communities share with them is just as important. For this to happen, implementing authorities require skills, time, resources and political will to engage with stakeholders at the grassroots level.

Effective capacity development cannot occur without **adequate and secure funding**. Torell et al. (2004) identify secure funding for ICM implementation, for example, as one of their first order outcomes in their order of outcomes framework.

More to come...

5.3 Increased localised incentives

Local incentives normally encourage people to participate in management and conservation measures. Livelihood diversification can contribute to reducing the dependence on natural resources by providing options for livelihoods (Ellis 1999). The Pwani project, a **project- supported livelihoods and micro-credit activities** in Tanzania was designed to integrate natural resource conservation, health gender equity, livelihood diversification, and food security activities, creating a positive feedback loop to improve wellbeing. The project focused on poor households, supporting them to escape the poverty trap and participate in the broader coastal management framework (Torell et al., 2017). These initiatives can contribute to learning and knowledge exchange, although the income sources may often remain low, unsustainable and dispersed (Phung Ha and Van Dijk 2013).

5.4 Learning and knowledge exchange mechanisms

Learning and knowledge exchange mechanisms are central to enable MSPs. Tanzania is a country member in the South West Indian Ocean Fisheries Governance and Shared Growth project (SWIOFish) which aims to improve management effectiveness of selected priority fisheries at national, regional and community levels. Under this project, support will be provided on regional integration around fisheries management, while expanding the approach beyond research to promote shared growth through harnessing the value of coastal and marine fisheries (UNEP 2021[2]).

Former **traditional management systems and practises** have generated many taboos and costumes that potentially limit fishing pressure and enforce protected fishing habitats. This includes dietary restrictions and prohibitions for some species or periods, due to religions and customary beliefs (Samoilys et al., 2017). Fisher communities were formally engaged in collaborative management systems Through the Fisheries Act No. 22 of 2003 and Fisheries Regulations of 2005 for BMUs.

5.5 Increased collaboration

Natural resources, especially coastal and marine resources are widely spread across areas beyond the established boundaries. As a result, communities seeking to sustainability manage these resources need collaboration among each other as well as with Government and NGOs and **partnerships** can be successful enablers for the establishment of MSPs. There are opportunities to create mechanisms to strengthen **community engagement and involvement as co-designers** for the implementation of MSPs (Samoilys et al., 2017; WWF 2021).

Collaboration between government institutions and departments can be achieved with the establishment of specific working groups, creation of committees and offices for Blue Economy and MSPs agendas (WIOMSP 2021). Nevertheless, this collaboration needs to be in line with the Global goals. The Intergovernmental Oceanographic Commission (IOC) of UNESCO and the European Commission's Directorate-General for Maritime Affairs and Fisheries have adopted the Joint Roadmap to accelerate Maritime/Marine Spatial Planning processes worldwide. The main objectives are to **strengthen institutional capabilities** in relation to MSP and the Sustainable Blue Economy and, to strengthen institutional coordination for the adoption of a roadmap (MSP Roadmap 2021[3]). Tanzania is one of the countries that have been demonstrating encouraging processes of implementation at a local scale through data collection and online portal development. National training on MSP and Sustainable Blue Economy has been held in the country, including transboundary aspects and opportunities (UNESCO 2021).

[2] https://wedocs.unep.org/

[3] http://www.mspglobal2030.org

5.6 Gender mainstreaming in STMTs

Recent findings point to the fact that women and their coastal activities are neither acknowledged nor accounted for in coastal management in Tanzania which is concerning given the fact that many coastal harvesters are women in the form of seaweed and cucumber farmers (de la Torre-Castro et al., 2017). For example, seaweed farming is significant for export and tax revenues for Zanzibar but no strong consideration to the fact that most farmers are women exists among coastal authorities. Seagrass beds, a critical cash income base for both men and women in Zanzibar, are absent from management plans. The same was found for coastal forests which have enormous subsistence importance. Mangroves are well established on mainland Tanzania as well as Zanzibar as having great value but no gender policies exist for the management of these coastal resources. mainly men related Male-dominated activities (e.g. fishing) seem to be the primary focus of management attention which could result in socio-ecological catastrophe if female-dominated activities are not accounted for.

De la Torre-Castro et al. (2017) suggest practical ways to integrate gender in coastal management in Tanzania which can also support the way MSP could develop in the country. 1) The first is that gender could be relatively easily integrated into the organizational structures of the Department of Marine Resources (DMR) and the Department of Fisheries Development (DFD) by including gender perspectives/analyses in the artisanal fisheries subdivision, community village committees and seaweed farming sections. 2) The second mechanism could be to create links with other relevant governmental organizations such as the Department of Forestry and Non-Renewable Natural Resources (DFNR) (Gender inclusive REDD forestry), the Ministry of Agriculture (Gender sensitive land use policy) and the Ministry of Community Development, Gender, Elderly and Children (MCDGEC) (Gender budgeting, Gender focal person, and Gender sensitization).

De la Torre-Castro et al. (2017:72) argue that ‘MSP is concerned with spatial issues in which several activities take place, multiple actors and sectors co-exist and competition over resources is present. Considering women's participation will add value, relevance and legitimacy to the MSP process. Users must be at the center of MSP, not only men but all involved actors. It is widely acknowledged that participation and empowerment increases the likelihood of management success’.

6. MSP development supporting existing STMTs inTanzania

Building on the constraints and enablers identified above, we have outlined a list of possible ways in which MSP development in Tanzania can support existing STMTs. It takes a lot of time, energy and funds to establish management approaches and as a result it is sensible to start with what already exists, such as CFMAs, the WWF / Blue Action Fund MPA management project in Rufiji, Mafia and Kilwa and the WIO Mangrove Network, which should inform how MSP can support current MPA management in the country. Therefore, MSP development should aim to draw on and support the strengths and successes of each STMT in terms of the following objectives.

6.1 Understanding the linkages/connectivity between STMTs

6.2 Identifying mechanisms for enhancing the contribution of STMTs' for:

6.2.1 Local and national economies

- Finding common ground on social, cultural, economic and environmental priorities and objectives
- Supporting the identified MKUKUTA cluster outcomes, namely i) Growth and reduction of income poverty; ii) Improvement of quality of life and social wellbeing; and (iii) Good governance and accountability.
- Focus on access to employment - particularly youth employment - MKUKUTA II states that growth should generate decent jobs in the mineral, tourism and agriculture sectors: Jobs should pay well enough to lift people from poverty, and strategies for labour market regulations are indicated.[4]

6.2.2 Local and sectoral development priorities

- Community-based conservation
- LMMAs

6.2.3 Science and education

6.2.4 Social needs

- ...high income growth embedded in an environment of good governance is needed to sustainably reduce income poverty and to improve service delivery. As Tanzania is characterized by low incomes and low income inequality, broadly shared growth will have to be the main engine for poverty alleviation (World Bank, 2006:2)

6.2.5 Identifying marginalised but integral stakeholders

6.3 Understanding the role of STMTs in buffering or mitigating climate change impacts

- The need for more data
- Interventions to address climate change
- Focusing on the mangrove network and the coral reef rescue initiative

[4] https://efdinitiative.org/story/sustainable-growth-key-tanzanias-mkukuta-2011-20150

- MKUKUTA review also noted that climate change is severely affecting agriculture production, as well as growth and poverty.
- “We suggest policies to support adoption of crop varieties and livestock breeds that are resistant to climate change.
- Climate change also affects the energy supply.
- "We highlight the need to have alternative sources and gradually reduce Tanzania´s dependence on hydropower,” says Mduma.
- The volumes of water fluctuate and are erratic due to several droughts over the last ten years. Therefore the new MKUKUTA recommends speeding up the exploitation of natural gas and other energy sources such as wind and solar. Off-grid distribution – small hydro or thermal plants – seems to be the best strategy for villages far away from the national grid.
- “We also need to intervene against the health effects of climate change, such as disease outbreaks. Climate change is likely to influence outbreaks of zoonotic diseases, which attack animals, as well as the spread of malaria where it is not endemic. Such outbreaks will have implications for human resources and budgets, and eventually for growth and poverty reduction,” says Mduma.[5]

6.4 Developing a MSP legislation that coordinates the role of various STMTs

- Informed by stakeholders from the start
- Harmonisation of current legislation

6.5 Establishing a cross-ministerial and departmental MSP Working Group on STMTs

- With stakeholders from different sectors

6.6 Developing blue economy investment portfolios and related guidelines

- The importance of securing financing
- Develop guidelines of blue economy activities to make sure these are streamlined with environmental, social and cultural objectives and priorities
- Buffering effects of CC → Beyond attracting tourists, the country’s landscapes and seascapes produce a wide range of ecosystem services, including carbon sequestration and biodiversity co-benefits that are not efficiently priced and often generate little or no financial return. The global climate crisis has created significant demand for investment in these forms of natural capital, and Tanzania is well positioned to take advantage of nature-positive investment opportunities. The additional revenue derived from global climate programs could be an opportunity to ease the government’s fiscal constraints while also supporting the livelihoods of local communities (World Bank 2021).

[5] https://efdinitiative.org/story/sustainable-growth-key-tanzanias-mkukuta-2011-2015

7. Lessons from current regional processes

Tanzania also stands to learn from current regional MSP processes such as the WIOMSP (Western Indian Ocean Marine Spatial Plan) and the Algoa Bay Project in South Africa. Below we highlight primary lessons from each process.

7.1 Western Indian Ocean Marine Spatial Plan

To achieve the vision and goals of the African Union (AU) Blue Economy Strategy (AU-IBAR 2019), MSP has been recognised as one of the many tools that can support the advancement towards a sustainable and inclusive blue economy. Within the Nairobi Convention, one of the priority areas of the work programme 2018-2022 has been to develop MSP in the WIO region to reach the Aichi Biodiversity Targets and the UN Sustainable Development Goals (SDGs). During the Nairobi Convention MSP in WIO meeting in March 2019 it was requested to work with partners to develop a regional strategy. The WIOMSP strategy is the result of this work, and involved situational assessment through stakeholder mapping and engagement, consulting the technical working group with two representatives from each country and reviewing existing strategies, research, regional and national political, legal, social and economic contexts and structures. The WIOMSP strategy highlighted the following strategic priorities:

- Stakeholder engagement processes that bring big industry and smaller interest groups together;
- Harmonisation of legal instruments for blue economy practices;
- Contextualisation of the global blue economy narrative for the WIO region;
- Cross-sectoral governance;
- Improved mapping of biophysical environment and human activities;
- Improved management of different sectoral activities and conflict;
- Multilateral stock management plans;
- Management and protection of Areas Beyond National Jurisdiction (ABNJ);
- Increased ocean protection of EBSAs to reach the AU Agenda 2063 goal of 10%.

Building on these priorities, the strategy emphasised the following implementation guidelines:

- Adoption and implementation of the WIOMSP strategy when completed;
- Political will, government transparency and accountability;
- Binding multilateral agreements;
- Ecosystem-based approaches to support SDG achievement;
- Supporting legal framework;
- Nested plans and co-development of area plans;
- Identification of priorities;
- Capacity development for financial planning; communication; in-country MSP expertise; knowledge management;
- The development of guidelines and tools;

- Monitoring, evaluation and learning (MEL).

Following the strategic priorities and the implementation guidelines prior to the science-to-policy meeting feedback, the WIOMSP strategy developed the following recommendations for the WIO countries which can be incorporated into a Tanzanian context:

7.1.1 Strategic Recommendations

1. Agree to ratify and adopt the marine spatial planning strategy for the region to achieve improved governance of the WIO.
2. Agree to harmonise in-country MSP development in support of regional ocean use and planning.
3. Secure funding and develop capacity for regional and in-country MSP.
4. Develop regional partnerships with regional economic communities (e.g. the Southern African Development Community (SADC)), regional fisheries management organizations and other regional communities (e.g. the IOC).
5. Ensure that MSP follows an ecosystems-based approach, according to the 'Malawi Principles' and the IOC-UNESCO steps.

7.1.2 Technical Recommendations

These are actions for the MSP Technical Working Group, which could also be coordinated at country-level.

6. Harmonise in-country MSP processes with the regional strategy.
7. Promote an enabling policy environment for development of in-country MSP legislation.
8. Assist with establishment of in-country cross-sectoral forums/committees/working groups to provide integration of sectoral policies and to assist with the MSP process.
9. Develop in-country knowledge management systems that contribute to, and benefit from, a regional knowledge management system.
10. Develop a communication and stakeholder engagement plan to ensure co-development and support for the area plans.

7.2 Algoa Bay Project

The Algoa Bay (AB) Project is working towards a co-developed MSP as called for by the Department of Environmental Affairs (DEA) Marine Spatial Planning Act (Dorrington et al. 2018). The MSP Act (2018) provides a framework for MSP in South Africa (Dorrington et al. 2018). In accordance with this, the AB Project is a South African Research Chair Initiative (SARChI) led community of practice and was established in September 2017.

The Project aims to identify natural areas of highest priority that need to be kept natural to support long-term sustainable non-destructive use and secure the bay's marine and coastal ecological, heritage, recreational and aesthetic values. The outputs of the Project will contribute fine-scale data and planning

products to the Marine Area Plan for the East coast of South Africa. The primary recipient of project outputs will be the National MSP Working Group, which has been tasked with producing four Marine Area Plans (West, South and East coasts of South Africa and the Prince Edward Islands).

The project is divided into two phases. Phase I focuses on the development of a bioregional plan (systematic conservation plan) and a legal/governance framework. Phase II will focus on the development of a socio-economic plan, with the ultimate goal being a co-developed, integrated MSP for the Bay (Dorrington et al. 2018; Figure 5).

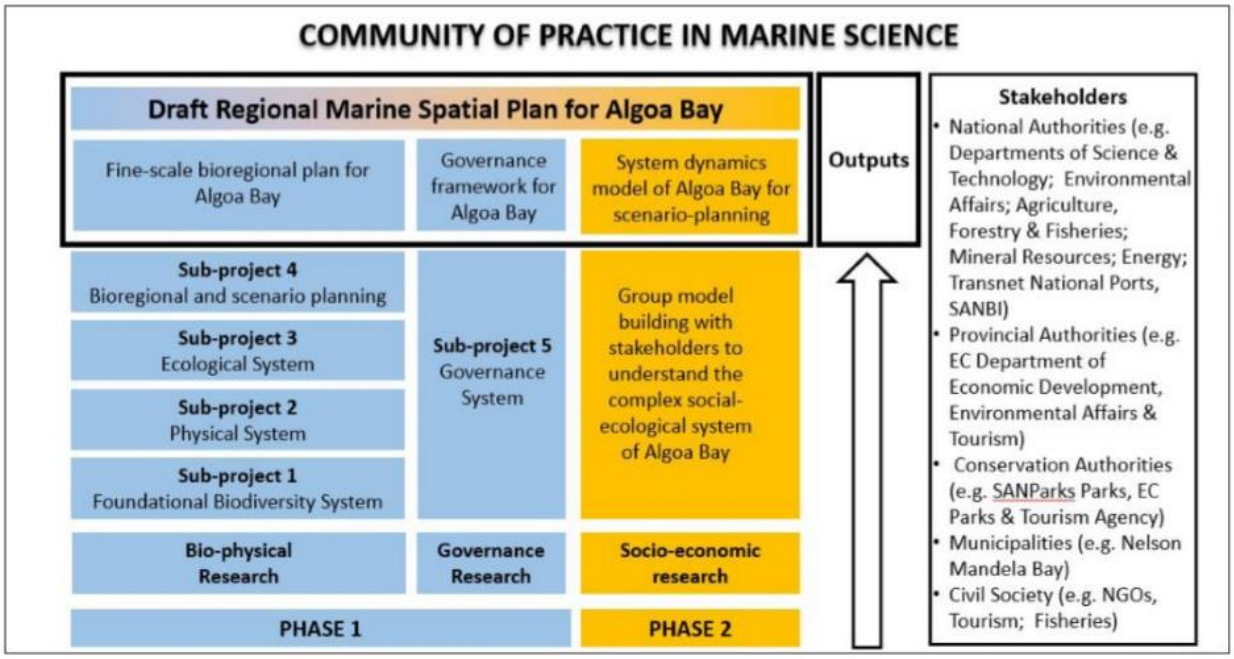

Figure 5. Research plan for the Algoa Bay Project (Dorrington et al. 2018: 3).

7.2.1 *What* to manage and conserve: systematic conservation plan

The systematic conservation plan (SCP) is a fine-scale biophysical plan of AB that identifies priority areas for biodiversity features and non-consumptive human use. Spatial datasets were created using available data from previous projects in the Bay and then knowledge gaps were supplemented through involvement with experts on their local and experiential knowledge of the Bay (Figure 6).

Figure 6. Systematic Conservation Planning process summary (Algoa Bay Project 2019).

The SCP analyses comprised 137 distinct biodiversity features, including:

- Marine and coastal ecosystems, with key island and reef habitats.

- Priority areas for marine top-predators which included shark, seabird, turtle and cetacean species, as well as important areas for various linefish species.
- EBSAs.
- Areas that support ecological processes, such as squid spawning areas, areas important for fish larvae and cross-realm (marine and terrestrial) linked habitats, including the littoral active zone and estuary mouths.
- Areas with important coastal and marine features within AB's Marine Protected Areas and coastal portions of terrestrial Protected Areas.
- The areas of the Bay which are in the best ecological condition.

The users whose requirements were built into the planning process included:

- Recreational coastal and water-based activities, such as recreational beaches, dive sites, popular bird- and cetacean-watching sites, kiteboarding areas, stand-up paddleboarding areas, life-saving competition and training areas, competition and training areas for triathlons and open-water swimming (including the economically beneficial IRONMAN African Championship), surf ski areas and yachting routes/areas.
- Recreational fishing areas, including shore-based fishing, ski-boat fishing, fishing competition areas, kayak-based fishing and spearfishing.
- Subsistence fishing.
- Coastal and marine heritage sites as identified by the South African Heritage Resources Agency (SAHRA), which includes shipwrecks, historically sites, and shell middens (key archaeological sites).

The SCP identified the following Priority Areas for Algoa Bay (Figure 7):

- Highest Priority Natural and Semi-Natural Areas inside MPAs
- Highest Priority Natural and Semi-Natural Areas Not in MPAs
- Other Parts of MPAs

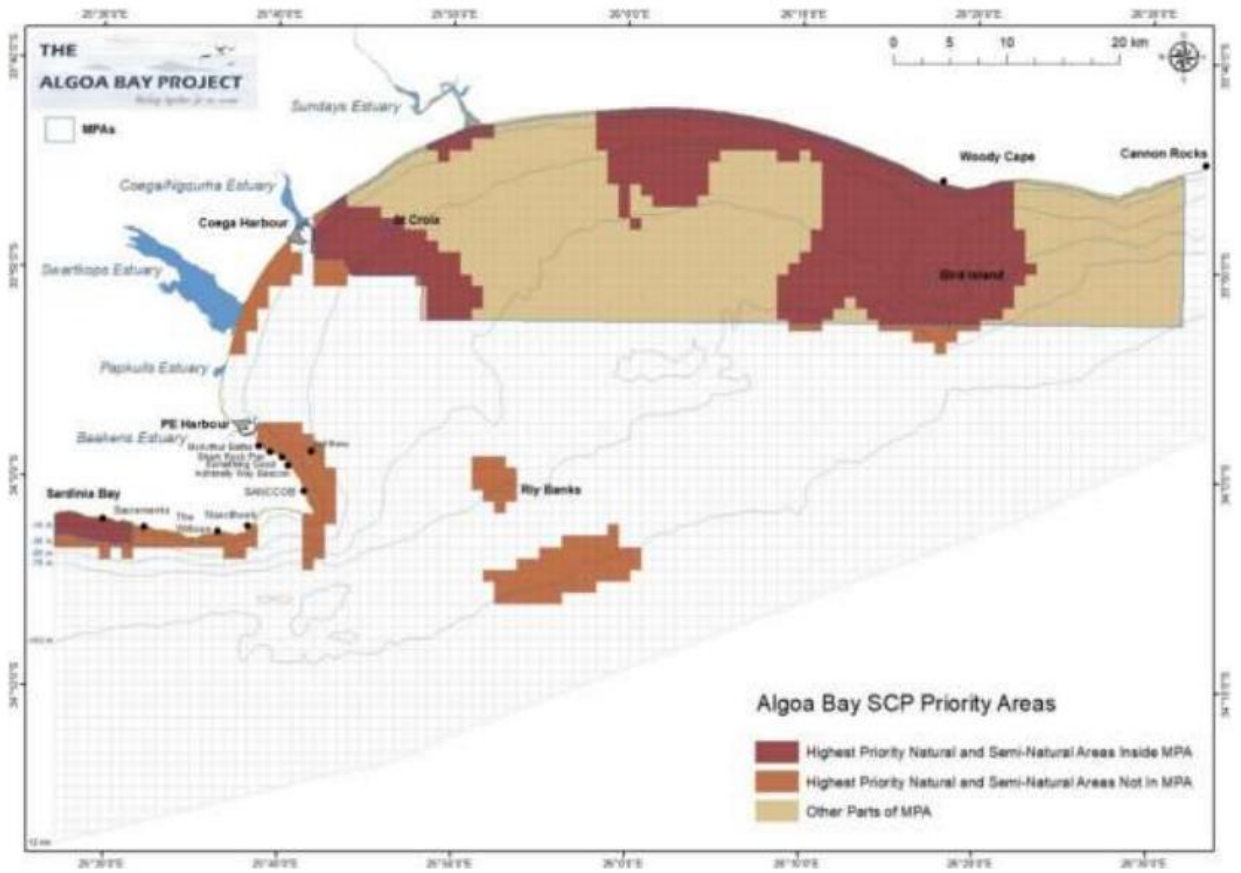

Figure 7. Algoa Bay Systematic Conservation Planning (SCP) Priority Areas.

These areas are highest priority natural areas which should be kept in this state to support long-term sustainable non-destructive use and secure the Bay's marine and coastal ecological, heritage, recreational and aesthetic value. It is anticipated that these areas will serve as an input into future formal Marine Spatial Planning processes in AB (Algoa Bay Project, 2019).

7.2.2 *Who* and *how* to include: stakeholder analysis and involvement

As part of the governance research (sub-project 5), a rapid stakeholder analysis was carried out for the Bay. A stakeholder analysis is a process that (1) identifies individuals, groups or organisations that will either affect or be affected by certain decisions or initiatives, such as a MSP. A stakeholder analysis also (2) provides understanding and context to these stakeholders and the ways in which they may or may not be affected by decisions and actions. Thirdly (3) a stakeholder analysis categorises stakeholders in order to prioritise them for a project so as to know who, how and when to engage these groups (Rivers et al. 2019).

The result of this stakeholder analysis was a map of AB stakeholders (Figure 8) according to Mitchell et al.'s (1997) salience framework where salience is understood as important to a project as measured by three relationship attributes: power, legitimacy and urgency.

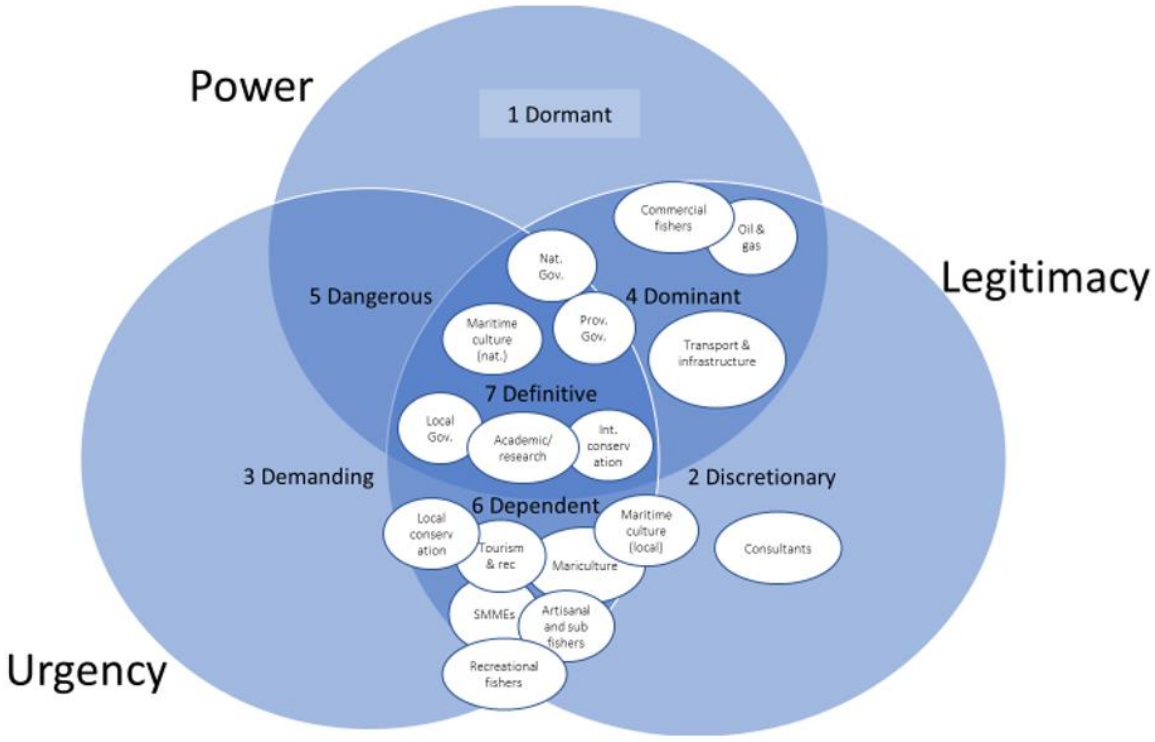

Figure 8. Algoa Bay stakeholder salience diagram (Rivers et al., 2019).

The main finding of this analysis was that stakeholder groups are dynamic and may change categories as they gain or lose power, urgency or legitimacy. The utility of this framework is its ability to account for the dynamic nature of social actors, transitioning from one category of stakeholder to another as they gain or lose power or their claims on a management area become more or less urgent, for example.

MSP is ultimately concerned with the governance of marine areas which is essentially about managing how humans use marine resources. Depending on how much power, legitimacy and urgency each group has, adopting a collaborative approach to developing a MSP assumes stakeholders will ultimately drive decisions on the allocation of space for a particular use or combination of uses of marine resources (Maguire et al. 2012). As they are central to the MSP process (planning, implementing and monitoring), they are the agents of change and therefore the future success and sustainability of a MSP for the Bay relies on them. Stakeholder engagement and the management of stakeholder relationships cannot therefore be an add-on but is deeply integral to achieving transformative, effective, integrated, adaptive and sustainable ocean governance. It is therefore critical that sufficient resources are allocated to meaningfully engage with stakeholders. This includes enough resources and capacity (funding and time) to build trust with individuals and groups, which may at times limit the efficiency of project activities and time frames but will ultimately enable the development of a truly shared and collaborative governance plan for the Bay.

A stakeholder analysis then identified the constraints and enablers to stakeholder involvement within the AB Project to date (Rivers et al. 2021).

Figure 9. Stakeholder groups engaged with to date in the AB MSP, as defined by human uses of the Bay (Rivers et al. 2021:6).

Enablers to stakeholder involvement include:

- Alignment of project objectives with stakeholder interests;
- Concrete activities like the SCP and the CoDyM pilot where stakeholders are able to give concrete inputs;
- Iterative feedback and information sharing;
- Investment in building relationships with stakeholders; and
- Strong leadership in the Project.

Constraints to stakeholder involvement include:

- Stakeholder confusion and conflation of different research projects and government initiatives in the Bay;
- Buy-in from certain sectors such as provincial government and the private sectors;
- Unclear stakeholder involvement approach;
- Potential conflicts between sectors;
- Stakeholder frustration at not having ultimate decision-making power and seeing immediate action;
- Inconsistent communication with stakeholders;
- Challenges in obtaining relevant data;
- Bureaucratic processes that lead to project delays and data gaps

Summarised recommendations for improved stakeholder involvement include:

- Clear and consistent communication;
- Clear, adaptable, capacitated stakeholder involvement approach;
- Mechanisms for conflict resolution and equality;
- Manage expectations, capacitate stakeholders and motivate for their meaningful involvement;
- Maintain momentum and prevent stakeholder fatigue with regular feedback and updates;
- Transparency, reciprocity and avoiding overlap in data collection;
- Be aware of bureaucratic processes and engage them early (e.g. ethics approval) to prevent project delays or data gaps; and
- Clear communication and roles required between AB team.

Three cross-cutting themes ran throughout these recommendations:

1. Understanding context and power;
2. Being adaptable (by being reflexive); and
3. Acknowledging the importance of learning processes for MSP in South Africa.

Stakeholder involvement was initiated early in the AB Project including a stakeholder inception meeting in 2018, another up-date and feedback meeting in November 2019 and another is planned for 2021[6]. The various research projects undertaken and currently being carried out under the broader Project are engaging with stakeholders on a continuous basis with the aim of data collection and collaboration.

7.2.3 *Deciding* how to manage and conserve: AB CoDyM

The aim of the AB Collaborative Dynamic Model (AB CoDyM) Pilot Project (initiated in 2019) is to use a collaborative planning process to build common understanding and decision-making between marine sectors and stakeholders in AB. The pilot also offers a model for in-depth, systematic stakeholder involvement to enable collaboration across different sectors (see Figure 11).

[6] Due to the Covid-19 pandemic, no stakeholder meeting was held in 2020. Stakeholders received an email instead, updating them on Project progress.

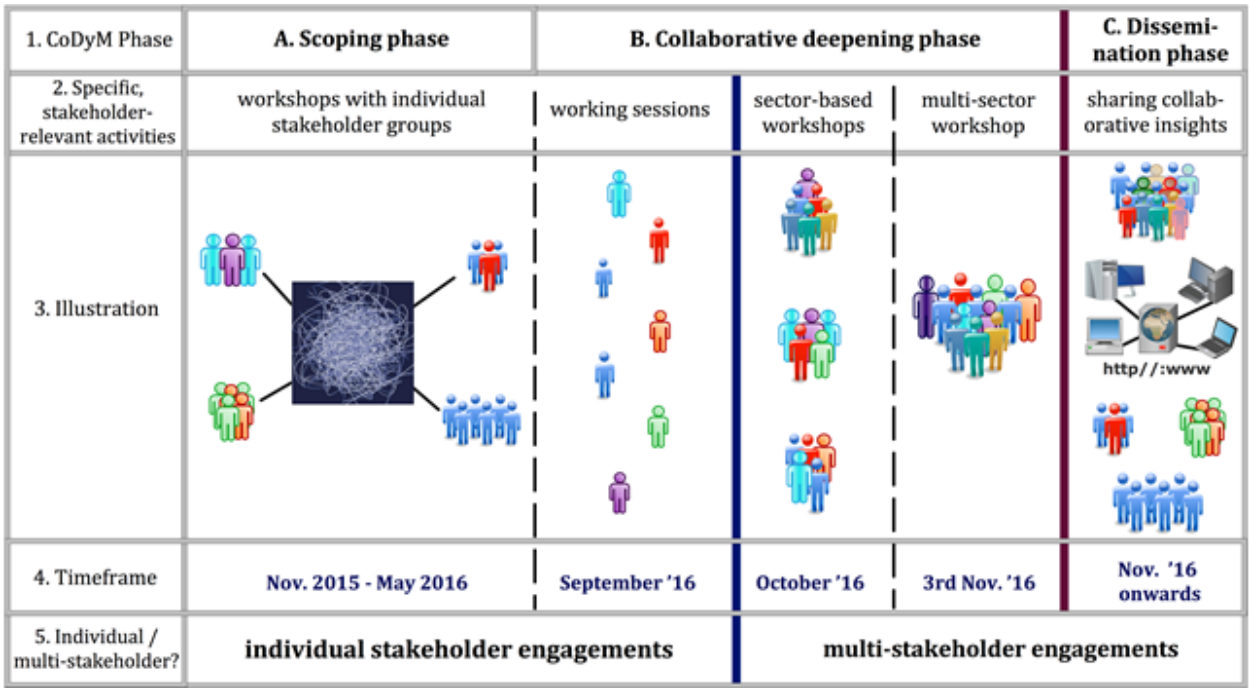

Figure 11. CoDyM methodological framework for stakeholder engagement (Clifford-Homes et al. 2019)

The goal of the pilot is to achieve a holistic understanding of the interconnections between the sectors in Algoa Bay and provide decision support by creating a tool that dynamically simulates the overall uses of the Bay (Figure 12). The tool and its individual actors are captured in a visual user interface (VUI), or a decision-support tool, for both technical and non-technical stakeholders. Ultimately, it attempts to develop a collaborative agreement on human usage of the Bay.

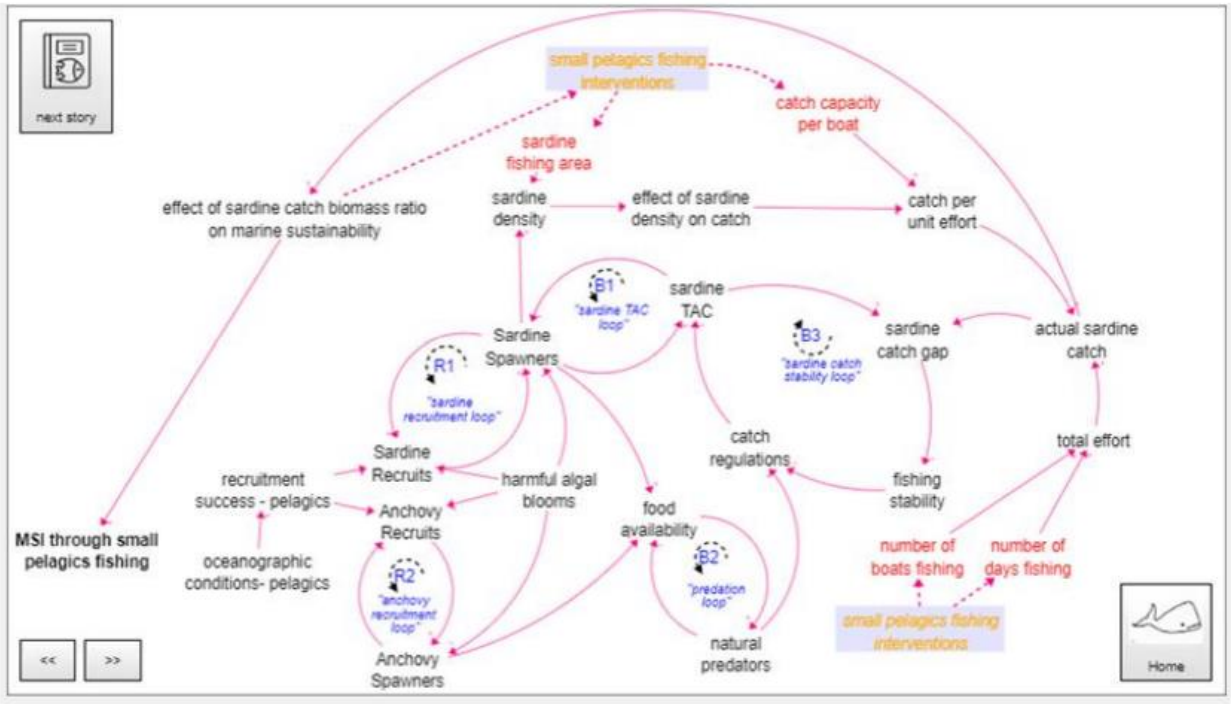

Figure 12. Simplified causal-loop-diagram (CLD) of the small-pelagic fishery in Algoa Bay (Vermeulen et al. 2020)

7.2.4 *How* to manage and conserve: legal MSP framework

The team guiding the legal focus of MSP development on the AB Project focussed on the legal stipulations of stakeholder participation within MSP which is effectively a participatory process as well as the potential conflicts that may arise between South Africa's MSP legislation (the Marine Spatial Planning Act (MSPA), 2018) and the environmental authorisations, permits and licencing requirements provided under specific environmental management Acts (SEMAs). This is significant because, when the MSPA comes into operation, any 'permit, permission, licence or any other authorisation issued in terms of any other law must be consistent with the approved marine area plans' (Metuge, 2021). This research found that the requirement of sustainability and due regard for the precautionary approach[7] is a common denominator between the provisions of the MSPA and the NEM:BA (Biodiversity Act), the NEM:PAA (Protected Areas Act) and the NEM:AQA (Air Quality Act). The research all found that there will be potential conflicts between the MSPA and various provisions in the SEMAs at the time when the former comes into operation. The lesson from this is that a legal analysis of existing legislation will have to be undertaken to identify possible conflicts with MSP legislation in Tanzania.

[7] The precautionary approach states that firstly "the reality that damage to the environment by human activity is often more extreme than anticipated and sometimes impossible to remedy and, secondly, the limited scope of predictability of the gravity and impact of human activity on the environment" (Metuge 2021:94).

7.2.5 *What* else to include and integrate: Socio-economic data

An interdisciplinary team of spatial planners, economists, anthropologists, GIS specialists, statisticians and modelers currently meet once a month to discuss different sets of socio-economic data that is being collected as well as to how to represent and incorporate this often-marginalised data into a holistic MSP for Algoa Bay. Economists are valuing ecosystems services in the Bay while social scientists are investigating how local and inidgenous knowledge can be integrated into coastal and ocean management.

8. Conclusion

- In the particular case of Tanzania, MSP can be attractive since the country has a long tradition working with ICZM. MSP is thus a natural further step, both conceptually and practically (de la Torre Castro et al. 2017:72)

More to come…

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Appendices: list of documents that needs to be reviewed and consulted

- Tuda et al. 2020. Polycentricity and adaptive governance of transboundary marine socio-ecological systems, Ocean and Coastal MAnagement