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Financing Mechanisms for Sustainable Blue Economy Development in Mozambique

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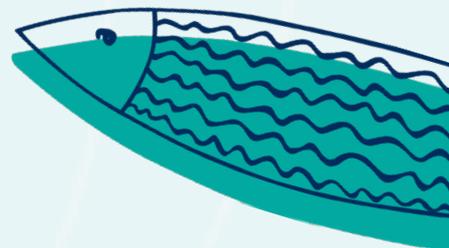
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Financing Mechanisms for Sustainable Blue Economy Development in Mozambique

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List of Acronyms

ADNAP	National Fisheries Administration	MCS	Monitoring, Control and Surveillance
AFD	Agence Française de Développement	MDB	Multilateral Development Bank
AfDB	African Development Bank	MEF	Ministry of Economics and Finance
ANAC	National Administration for Conservation Areas	MICULTUR	Ministry of Culture and Tourism
CPUE	Catch per Unit Effort	MIMAIP	Ministry of Sea, Inland Waters and Fisheries
CTA	Confederation of Economic Associations	MIMEC	Ministry of Foreign Affairs and Cooperation
DEPI	Directorate of Studies, Planning and Infrastructure	MIREME	Ministry of Energy and Natural Resources
DFI	Development Finance Institution	MPA	Marine Protected Area
DFID	Department for International Development	MSME	Micro, Small and Medium Enterprise
DWFN	Distant Water Fishing Nation	MSP	Marine Spatial Plan (general)
EEZ	Exclusive Economic Zone	MSY	Maximum Sustainable Yield
EIA	Environmental Impact Assessment	MITA	Ministry of Land and Environment
EIB	European Investment Bank	NGO	Non-governmental Organisation
EMS	Environmental Management Systems	NORAD	Norwegian Agency for Development Cooperation
EU	European Union	ODA	Official Development Assistance
FAO	Food and Agriculture Organisation	OECD	Organisation for Economic Co-operation and Development
FDI	Foreign Direct Investment	PNDT	National Plan for Territorial Development
FNDS	National Sustainable Development Fund	POEM	Marine Spatial Plan (Mozambique)
FUNAE	Energy Fund	PoIMar	Sea Policy
GDP	Gross Domestic Product	R&D	Research & Development
GEF	Global Environment Facility	RFMO	Regional Fisheries Management Organisation
GFW	Global Fishing Watch	RJUEM	Legal regime for the national maritime zone use
GGDC	Good Governance Development Contract	SDG	Sustainable Development Goals
GNI	Gross National Income	SOE	State-owned Enterprise
GoM	Government of Mozambique	SWIOFISH	South West Indian Ocean Fisheries Governance and Shared Growth Project
HDI	Human Development Index	UEM	University Eduardo Mondlane
IDEPA	Institute for the Development of Fisheries and Aquaculture	UN	United Nations
IFAD	International Fund for Agricultural Development	UNDP	United Nations Development Programme
IIF	National Institute for Fisheries	UNEP	United Nations Environment Programme
IMF	International Monetary Fund	WB	World Bank
INAHINA	National Institute for Hydrography and Navigation	WCS	Wildlife Conservation Society

Executive Summary

The purpose of this report is to inform the development of “financing mechanisms for Mozambique’s sustainable blue economy” and assist the blue economy development fund, ProAzul, in developing blue economy financing strategies. It is one of several World Bank projects under the PROBLUE multi-donor trust fund programme to further the development of Mozambique’s sustainable blue economy.

The approach to this report has been to ensure that the financing mechanisms options proposed are informed by international best practice and importantly are customised to Mozambique’s local context and blue economy investment priorities. The report placed a strong emphasis on the “enabling environment” which in turn ensures an effective implementation of financial mechanisms. This report draws from a review of existing studies and reports as well as from consultations with government officials, investors and non-government and private sector organisations operating in Mozambique. The report acknowledges that due to Covid-19, its findings and proposed investment opportunities may need adjusting, once the impacts of Covid-19 are fully assessed. As far as practical, however, the report has attempted to anticipate what these might be.

The first part of the report focuses on understanding Mozambique’s context, challenges and needs for a sustainable blue economy. The second reviews a range of key financing mechanisms and their potential applicability to Mozambique, which are further elaborated through a small set of investment priorities, derived from a longer list of potential opportunities outlined in Annex 3. The report is structured as follows:

- **Chapter 1** offers an introduction to the concept of the blue economy and sets the scene;
- **Chapter 2** provides an overview of the current socio-economic and environmental landscape of Mozambique, including efforts at progressing a blue economy agenda, key blue economy actors and initiatives;
- **Chapter 3** discusses the challenges facing Mozambique to advance its blue economy agenda;
- **Chapter 4** proposes strategies to address those challenges;
- **Chapter 5** describes the generally available financing mechanisms for a sustainable blue economy that may be relevant to Mozambique;
- **Chapter 6** explores criteria on which to assess potential blue economy investment opportunities, and
- **Chapter 7** elaborates financing mechanisms for four selected blue economy investment opportunities.

Further information and more detailed assessments of stakeholders and investment opportunities are detailed in a series of annexes.



Key Findings

1 *Local context for sustainable blue economy development*

Mozambique is endowed with ample natural resources, three deep seaports, abundant marine biodiversity and a relatively large potential labour pool. It is also strategically located, bordering six countries—four of them landlocked and hence dependent on Mozambique as a conduit to global markets. In addition, the country's strong ties to South Africa underscore the importance of Mozambique's economic, political, and social development to the stability and growth of the region¹. Despite its natural wealth, Mozambique is a Low-Income Country with a Gross National Income (GNI) per capita of only USD 460 dollars (World Bank 2018) with about 70 percent of the population (30,366,000 million, 2019²) in rural areas. The majority of the country's population is considered poor, with significantly higher levels of poverty in the more rural central and northern parts of the country (World Bank, 2020c).

The economic development of Mozambique is dominated by extractive industries and associated sectors, a large informal rural small-scale agriculture and fisheries sector, and limited physical infrastructure outside urban/port corridors. Economic growth of the last decade has not translated into sustained development outcomes for most of Mozambique's rural population, calling for a greater focus on inclusive and sustainable development supported by strong economic policy reforms and diversification of economic activities (World Bank 2019c). Vulnerability to external shocks (commodity prices & natural hazards, and now Covid-19) combined with systemic governance issues have weakened investor confidence, however recent macroeconomic reforms and debt management are improving this situation (IMF 2019).

With a coastline of 2,700 km, one of the longest in Africa, an EEZ of 578,986 km² as well as 13,000km² of inland waters and several biodiversity hotspots, looking to the ocean for future development is an obvious pathway. Despite a great source of wealth, present and future, the coastal and marine environment is at risk from over exploitation, habitat loss, marine pollution and coastal erosion which are compounded by the impacts of climate change (e.g. Cabral et al 2017). This in turn results in declining ocean health and the livelihoods of dependant coastal communities, which ultimately impacts on the economy.

In recent years, the Government of Mozambique (GoM) has made good progress in developing ocean related policies (e.g. Sea Policy and Strategy), legislation (Legal Regime for the National Maritime Zone Use - RJUEM), establishing institutions for policy implementation (MIMAIP and ProAzul Fund) and initiating a marine spatial planning (POEM) process, consistent with international and regional trends including the 2030 sustainable development agenda and the recent Africa Blue Economy strategy 2019. In particular, the establishment of ProAzul, a platform that acts as a gateway and link between stakeholders, providing information about the financing needs of projects aimed at the development of the blue economy, has been a key development. ProAzul focuses in particular on screening, monitoring and realization of potential opportunities for the blue economy in Mozambique, where it could be focusing in particular on ports and related infrastructure; mineral and hydrocarbon resources; fishing and aquaculture; culture, tourism and sport; maritime transportation and shipping industry; energy, and research and development.

¹ WBG country partnership program Fy17-FY21.

² World Population Review. 2020 growth rate 2.93% per annum.

2 The enabling environment

Translating policy prescriptions into practical implementation nevertheless faces significant challenges from operationalizing governance arrangements and transparent and accountable processes, building a strong knowledge infrastructure and technical skills, to establishing a favourable environment for private sector participation and investment and attracting long term finance for implementation. The report proposes a number of practical steps to address these challenges, taking advantage of existing processes (e.g. POEM and its consultative Committee) proposed governance mechanisms (e.g. the establishment of a high level ministerial National Sea Council), strengthening others (e.g. ease of doing business reform) or filling gaps (e.g. setting up a blue economy satellite account to track blue economy financial flows). See table below for summary of key challenges and opportunities.

Table 1 - Enabling environment: Summary of challenges and opportunities for blue economy development in Mozambique

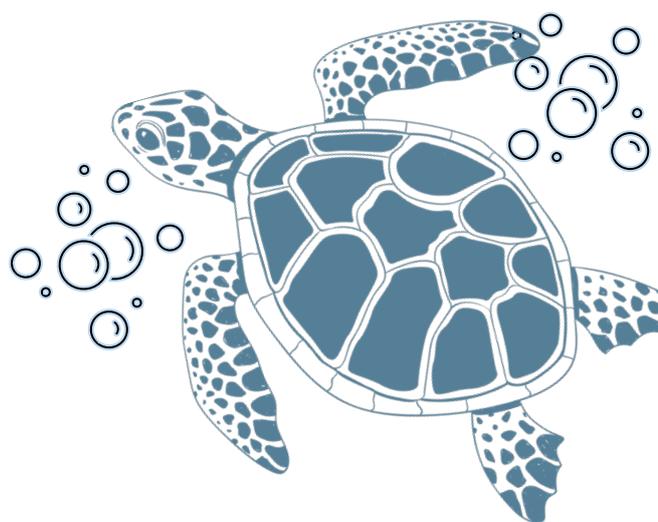
CHALLENGES	OPPORTUNITIES/STRATEGIES
Mainstreaming a national blue economy agenda	Growing Blue conference, POLMAR, POEM, African Union Blue Economy
Governance Lack of Institutional coordination across blue economy sectors, legitimacy of blue economy mandates Lack of a POLMAR Implementation plan	POLMAR National Sea Council & Technical Committee ProAzul Fund as gateway for cross sectoral collaborations on blue economy project development (Pro Azul Blue Economy Roadmap) POEM and its stakeholder Consultative Committee POLMAR M&E
Knowledge Lack of an integrated knowledge infrastructure	Coordination across government institutes and the University Development of an ICT and Research and Innovation strategy Domestic and international Partnerships MDB and donor programmes (e.g. SWIOFISH)
Administrative capacity for POLMAR and blue economy implementation	Technical, institutional capacity building and resources
Finance Lack of tracking of blue economy financial flows, monitoring and reporting Investor confidence (hidden debt crisis) Financing gap/Decline in FDI	Blue economy satellite account Positive trends in debt/GDP ratio IMF bill of health LNG proceeds/Innovative financing mechanisms (see mechanism chapter – pag, 45)
Private sector participation Large poorly organised informal sector, low competitiveness and business skills Difficult business environment High cost of capital	SMEs associations, vocational training, IFAD PRODAPE rural programme (access to finance) Ease of doing business reform
Limited access to physical infrastructure in rural areas (energy, transport, services)	Target infrastructure development around Port/rail corridors & economic zones, expend access to low cost solar energy
Vulnerability to natural disasters (cyclones, floods, Covid-19)	Nature-based infrastructure

3 **Financing mechanisms**

A large number of mechanisms for financing sustainable development exist, and as momentum for the sustainable blue economy grows, an increasing amount of work has been done in exploring how these mechanisms may be applied for marine and coastal zones and economic sectors. In this chapter, a selection of these mechanisms, based both on the most prominent blue economy financing mechanisms currently (e.g. blue bonds) as well as what may be best suited to Mozambique, are discussed.³ For each mechanism, a general overview of their structure is provided, alongside a consideration of how these mechanisms may be applied in a Mozambican context. The instruments are broken down by practitioner and capital type, and cover elements of corporate finance, investors, public finance and insurance.

Corporate finance includes capital made available by corporations, including multinationals, that may use different types of capital for financing sustainability – here, two notable examples are discussed: Corporate Social Responsibility (CSR) and use of corporate capital for compensation funds. Investors are here described as entities working specifically with investment capital to finance projects focused on sustainability, and are therefore distinct from corporate actors or public finance, which will be described in the next section. Investors can be both return-seeking, as in the case of Impact Investment, as well as non-return seeking, as in the case of Conservation Trust Funds and Revolving Loan Funds. Public finance entails the resources and instruments available for financing by the public sector, ranging from quite traditional instruments and their application (Market Based Instruments such as taxes and levies) and use of Sovereign Wealth Fund proceeds to more innovative approaches such as Blue Bonds, Debt Conversions and Carbon Credits. The insurance sector as a source of financing has a key role to play in enabling finance for the sustainable blue economy – notably in the context of risk financing and reducing the coverage gap for insurance. Key insurance mechanisms for consideration here include Parametric Insurance and Risk Pools.

Many of these mechanisms are able to be blended with other capital types to maximise returns and open up additional investment opportunities. The below table summarises the mechanisms examined in this report.



³ Note that many other instruments exist, and the *Ocean Finance Handbook* (Friends of Ocean Action, 2020) may be a helpful source of additional information.

Table 3 - Summary of blue economy financing mechanisms in Mozambique

MECHANISM	RETURN-SEEKING?	CAPITAL PROVIDERS	SCALE (USD)	MOZAMBIQUE POTENTIAL	ABLE TO FINANCE THE INFORMAL SECTOR?	CONSTRAINTS IN MOZAMBIQUE	EXAMPLES IN MOZAMBIQUE
Corporate finance							
Corporate social responsibility investment	No	Multinational corporations working in Mozambique	Approximately 23.5 million per corporation per annum	Conservation-linked projects and social impact projects	Yes	Availability of multinationals and access to decision-makers	Vale port investment in Cabo Delgado
Compensation funds	No	Multinational corporations working in Mozambique	Variable fines and fees depending on incident	Conservation-linked projects	Yes	Legal framework for compensation	In the context of oil and gas spills built with limited capacity on implementation
Investors							
Impact investment	Yes, market	Impact investors	Individual projects typically 500,000 – 2,000,000	Small-to-medium scale ventures at post-seed and series A funding rounds	Yes	Ease of doing business and investor interest	From international sources (e.g. Aqua-spark), domestic capacity highly constrained
Conservation Trust Fund	No	Philanthropy, impact investors, donor capital	Typically endowed in 10-20 million range	Conservation-linked projects, small-scale community fisheries projects, small-scale tourism	Yes	Availability of capital	BIOFUND is leading example
Revolving Loan Fund	No	Philanthropy, impact investors, donor capital	Up to 3,000,000	Conservation-linked projects, small-scale community fisheries projects,	Yes	Availability of capital	Substantial historic activity both through Celim as well as MIMAIP through SWIOFish

				small-scale (eco) tourism			
Public finance							
Market based instruments	No	Public capital	Dependent on instrument	Use of proceeds could be applied to any sector identified as a strategic priority	No	Policy commitment to blue economy and political willingness to change existing balance of market instruments	Existing taxes for coastal and ocean users including fishers, ports and tourism operations
Sovereign wealth fund	No	Sovereign	Billions – trillions depending on age of the fund	Use of proceeds could be applied to any sector identified as a strategic priority	No	Establishment and operationalisation of the fund	Currently being established to manage oil and gas revenues
Sovereign blue bond	Yes	Sovereign	>50 million	Renewable energy, fisheries, sustainable ports/shipping	No	Limited fiscal space and scale	No current examples in Mozambique
Debt conversion	No	Sovereign, brokered by third party intermediary	>50 million	Conservation-linked projects	Not directly	Creditor willingness and quantifiable projects to benefit	No current examples in Mozambique
Carbon credits	Yes	Global carbon market	NA	Mangrove conservation and restoration; nature-based and green infrastructure	No	Global strength of carbon market and price of carbon	Significant experience in REDD+ financing, IUCN currently working to assess blue carbon potential
Insurance							
Parametric insurance	Yes	Insurance firms/sovereign insurance facilities	Dependent on what is being insured	Coastal and marine tourism, nature-based infrastructure and coastal resilience	Not directly	Global market volatility and price premiums from insurance firms	Initial momentum underway through Mozambique's participation in the African Risk Capacity
Risk pools	No	Insurance firms/community-based insurance	Dependent on what is being insured	Community-based fishing, tourism	Yes	Access to financial services in remote communities	Limited exploration of risk pooling though no structural barriers to implementation

4 **Investment opportunities for further elaboration and financing**

With these enabling mechanisms and potential financing mechanisms in mind, 12 investment opportunities were first explored. They were broad ranging, owing to the multisectoral and multidimensional nature of the sustainable blue economy (they are detailed in Annex 3). These opportunities were then assessed and prioritised for further elaboration and financing against objective criteria including financial viability and risk, policy compatibility, social inclusion, environmental benefits and resilience and economic diversification and scalability. Four investment opportunities were prioritised by ProAzul. Two of these opportunities, the *blue cluster* and *blue economy sustainable economic zone*, are enablers of broader development of the sustainable blue economy, and may be integrated due to their close inter-linkages; the third is concerned with economic diversification and the financing of an emerging sustainable aquaculture sector, and the fourth focuses on establishing and managing a coastal natural infrastructure (including MPA networks) as an essential contribution to climate resilience and a sustainable blue economy. For each of these opportunities, the financing mechanism(s) described include potential return, scale, timeline, key stakeholders and capital providers, potential risks as well as the role of government and ProAzul.

It should be noted that these opportunities are intended as thought starters to help the GoM identify and assess development opportunities in the blue economy, rather than deals or transactions ready for financing. For each, further upfront work to understand and parameterise the opportunity is required. As a principle, the focus lies with blue economy investment opportunities that deliver diversification, sustainability and inclusiveness within and across blue economy sectors as well as demonstrate the value-adding of an integrated and sustainable blue economy taking advantage of synergies, addressing common challenges and achieving positive outcomes across sectors. They offer potential roles for both public as well as private sources of capital.

Key features of these opportunities are summarised below:

Snapshot overview – Blue Cluster

Description: the Mozambican blue cluster would include three closely related components: an incubator, focused on building entrepreneurial skills for start-up businesses and their entrepreneurs and networks for young Mozambicans to develop blue economy businesses; an accelerator to provide mentoring and investor matchmaking to promising start-ups in exchange for a seed investment, and the services of the ‘cluster’ to provide market insight and advocacy for the interests of the blue economy private sector.

Scale: Approximately US\$ 1.65 million (650k grant funding, 1 million investment capital)

Timeframe: 5 years for initial funding round

Instrument(s): Combination of grants for cluster and incubator and seed finance provided by venture capital/impact funds in exchange for % equity stake in start-ups in accelerator

Return potential: NA for cluster and incubator, typically 25-48% IRR for accelerators (likely lower for Mozambican blue economy context; further study required)

Key risks:

- Insufficient entrepreneurs to populate the Blue Cluster
- Perceived risk of investment in Mozambique limiting fundraising potential
- High cost of doing business in Mozambique

Next steps: Survey appetite for a blue economy incubator, accelerator and cluster and develop business plan on which to begin fundraising.

Snapshot overview – Expanding a commercial sustainable aquaculture sector

Description: Aquaculture Development Strategy (2020-2023) has identified the development of a commercial aquaculture sector as one of its priorities for investment and a means to diversify its economy and revenue base.

Scale: TBA,

Timeframe: 5-10 years

Instrument(s): A combination of public finance as grants and concessional lending to strengthen policy, institutional & technical capacity, market-based incentives (e.g. tax rebate, land and subsidised loans) and private investment as DFI/PPP and commercial loans and global capital for commercial aquaculture operations

Return potential: license fees; domestic and export sales of fish/aquaculture products; tax revenue.

Key risks:

- Climate change impacts on physical assets e.g. droughts, floods, water quality issues;
- Availability of skills and knowledge;
- Access to credit, land, energy and transport;
- Commodity prices and consumer preferences;
- Ability to ensure compliance to regulations and license conditions;
- Investor confidence in Mozambique, credit worthiness, COVID-19

Next steps: Government in consultation with industry and development partners to review the enabling environment and map out the sector's key stakeholders, needs, potential market, investment opportunities and financing options.

Snapshot overview – Coastal natural infrastructure for a resilient and sustainable blue economy

Description: Mozambique is highly vulnerable to natural disasters which affect both people and the economy. Investing in coastal natural infrastructure protects coastlines social and economic assets, ocean resources and livelihoods and will reduce recovery expenditure and contribute to build a sustainable blue economy.

Scale: US \$150-200 million¹ (estimated).

Timeframe: 10 years (2030)

Instrument (s): A combination public finance (grants concessional lending, market-based instruments, credit schemes, debt conversion, sovereign wealth fund); and private finance (Conservation Trust Funds and CSRs); and insurance (parametric insurance)

Return potential: Initially low, mostly as revenue from taxes and fees (tourism, fisheries); over time reduced expenditure of disaster recovery (% of GDP) from climate risks; sale of tourism products, export earnings, cash flows.

Key risks:

- Knowledge infrastructure and capabilities (e.g. credit scheme, parametric insurance)
- Coordination across government and partnerships;
- Fiscal space, creditor willingness (debt conversion)
- Possible use conflicts, and Stakeholder support; High costs of management (compliance, surveillance)
- Reputational and security issues (e.g. tourism)

Next steps: MIMAIP/ProAzul to facilitate a dialogue with government and partners on a strategic pipeline of projects and engage with MEF on mapping financing options and requirements consistent with the POEM and PNDT

Snapshot overview – Blue economy sustainable economic zone

Description: Development of a virtual sustainable economic zone combining the sustainability-linked opportunities of a sustainable special economic zone with the scaling opportunities of a virtual economic zone.

Scale: Public capital investment in development of new sustainable virtual economic zone; scale to be developed

Timeframe: 3 years to establishment; potentially indefinite operation

Instrument(s): Public capital investment – tax incentives and reduction or elimination of customs fees, import duties and income tax

Return potential: NA

Key risks:

- Standards for sustainability may be too high for enterprise participation in VSEZ
- No progress on private sector reforms
- Limited engagement from MEF/Investment Council/APIEX to collaborate to develop innovative zone

Next steps: ProAzul to conduct a scoping assessment of the potential benefits of a special economic zone dedicated to the blue economy, draft a concept of what this may look like and develop eligibility criteria for participation based on sustainability standards



Next Steps and Key Recommendations

The report proposes a series of steps the GoM could consider to advance financing mechanisms for a sustainable blue economy focusing on the enabling environment and financing mechanisms for identified priorities, mindful that the blue economy remains a relatively new concept in Mozambique's policy community.

⇒ **Enabling Environment:**

- a) Operationalizing a Ministerial level National Sea Council urgently to provide leadership and multisectoral strategic guidance and facilitate whole-of-government POLMAR implementation and blue economy development;
- b) Develop a blue economy satellite account to track blue economy domestic and external financial flows in the Ministry of Economy and Finance to clearly show the contribution of relevant sectors to the country's economy, facilitate budget allocation for blue economy implementation and allow for greater donor harmonisation;
- c) Develop a blue economy knowledge infrastructure, linked to the platform to be developed for the marine spatial planning process (POEM), including technical and financial data;
- d) Develop a directory of available public investment opportunities and current and future pipeline blue economy projects and activities to help effective targeting of public finance, and as a means to leverage private finance;
- e) Implement key recommendations and reforms to the private sector and investment policy featured in a parallel study on Mozambique's private sector:
 - a. Review and align investment law to align with international investment policy commitments to improve predictability and enforceability of investor rights;
 - b. Introduce mechanisms to help investors navigate regulations and procedures and address grievances, entailing the establishment of an investment ombudsman and of functioning One-Stop-Shops (World Bank, in draft).

⇒ **Financing Mechanisms for Selected Investment Opportunities:**

A number of financing mechanisms for the development of the blue economy in Mozambique may be viable, with key lessons to be drawn from international examples as well as potential existing stakeholders and resources to leverage. Some key activities for Mozambique, notably for ProAzul, to consider in the context of developing finance for the sustainable blue economy include:

1. Develop an investment strategy in collaboration with MEF, and development partners to resource the implementation of POLMAR and ProAzul's blue economy roadmap and establish a directory of financial experts and organisations to advise on the choice and design of appropriate financing mechanisms, hosted and curated by ProAzul;
2. Review current market-based instruments, to identify opportunities to earmark a greater percentage of revenue raised from blue economy sectors to improve sustainability and redirecting perverse incentives towards beneficial uses of coastal ocean resources in support of a sustainable blue economy;
3. Explore the legal requirements needed for the establishment of an oil spill compensation fund and update international agreements as needed;
4. Ensure sustainable blue economy is integrated as a priority in the investment policy of the proposed Sovereign Wealth Fund;
5. Explore with the MEF the possibility of a debt conversion to capitalise an independent trust fund for the long-term financing of the protection of Mozambique's coastal and

marine environments and the development of a resilient and sustainable blue economy;

6. Explore the establishment of a sustainable blue economy-specific arm to the existing Conservation Trust Fund *BIOFUND*, including potential for oil & gas company-derived CSR;
7. Promote Mozambique's participation in the African Risk Capacity (ARC) for blue economy purposes and marine natural hazards;
8. Foster linkages with key international stakeholders (e.g. Willis Towers Watson, the Ocean Risk and Resilience Action Alliance - ORRAA - and others) to build partnerships for developing risk financing in Mozambique.
9. Explore the possibility of seeking GCF accreditation to facilitate public investment in climate resilience and mitigation.

The analyses undertaken in this report to identify financing mechanisms for a sustainable blue economy demonstrates the importance of the local context and a suitable enabling environment for identified investment opportunities to be effectively realised. The review of the range of financing mechanisms available and broad applicability to the Mozambican context and the elaboration of the four prioritised opportunities provide a first cut of what is possible, and the potential opportunities that exist as well as the steps to consider to realise them. Nevertheless, realising these investment opportunities will require strong leadership, coordination, time as well as further feasibility analyses, technical and financial advice, and collaborations and partnerships with both local and international actors. The report analysis and recommendations can inform whole-of-government conversations and provide the basis for the development of a blue economy investment strategy, which is integrated, coordinated and customised to Mozambique's sustainable blue economy needs.



1. Introduction

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What is the Blue Economy?

The blue economy refers to the sustainable use of ocean resources for economic growth and improved livelihoods and jobs, while preserving the health of ocean ecosystems. In Mozambique, this could include the development of a healthy and prosperous fishing industry, effective control of waste and toxic run-off, promotion of alternative marine livelihood activities such as small-scale eco-tourism enterprises, and the sustainable and effective management of a burgeoning off-shore extractive industry. With extensive coastal resources and 540,000 km² of Exclusive Economic Zone, Mozambique is well positioned to benefit from the blue economy if it is able to sustainably manage and protect its valuable marine environment. (World Bank 2019 communities, livelihoods, fisheries, governance growth and the blue economy)

Why the Blue Economy?⁴

Mozambique has 2,700 km of coastline, one of the longest coastlines in Africa, with an EEZ of 578 986 km² as well as 13,000km² of inland waters. 66% of Mozambicans (over 19 million people) live by the coast. The Mozambique Channel is characterized by extensive currents rich in phytoplankton, which support abundant and diversified fishing grounds. Small-scale artisanal fishers represent 90% of the landed catch. Despite a relatively low direct contribution to Mozambique’s GDP (estimates varying between 2-4 percent), fisheries’ social value is considerable. The sector represents a major source of food and nutrition for the country’s population and is a vital job market, providing an important source of income for 87% of households which is used to finance other activities, such as agriculture and informal trade in basic necessities (WB SWIOFISH, POEM 2020).

⁴ There is no one agreed definition of Blue Economy. For the purpose of this report, the World Bank definition is used (2017) “*the sustainable use of ocean resources for economic growth, improved livelihoods and jobs and ocean ecosystem health*”. <https://www.worldbank.org/en/news/infographic/2017/06/06/blue-economy> [accessed 20 July 2020]

The Mozambique Channel is a major local and international transport link. Mozambique's three deep-water container ports (Maputo, Beira and Nacala) are strategically located and connected to inland road and rail corridors, providing a gateway to the rest of the world for Mozambique's hinterland as well as neighbouring landlocked countries, including Botswana, Zambia, Malawi and Zimbabwe. Ports have the potential to become hubs for services and related manufacturing sectors, offering a potential source of employment including vessel construction, logistical, storage and transportation services. Mozambique's main exports include minerals (coal, oil and liquid gas) (47 %) and Aluminium (27%) with fisheries products only 1.3% of total exports (Trade Economics 2018)⁵. The recent discovery of liquefied natural gas (LNG) resources in the northern region of Cabo Delgado offer significant opportunities for economic development and government revenue.

The Mozambique Channel is also an important biodiversity hotspot, featuring fringing coral reefs in the northern region (35% of the Indian Ocean region IOR), mangrove forests and sea grass meadows in the central region. Mozambique features over 3,00km² of mangrove forest (Shapiro, 2018), and parabolic dune systems and perched lakes in the south. Despite this ecological diversity, only 2% of Mozambique's maritime space is under protection (USAID, 2019a). Protected areas include (but are not limited to) the Environmental Protection Area of the Primeiras e Segundas archipelago in the north and the Ponta do Ouro partial Marine Reserve, Maputo Province - in the south.

Mozambique's unique coastal and marine assets are a major potential attraction for international tourism. With 2.87 million visitors in 2018 representing revenue of US\$ 241 million to the economy, marine and coastal tourism development offers opportunities for future growth and employment. Most of the tourism activity is in the Maputo region closest to South Africa (where 65% of visitors are from) (TPF & Bidesign, 2020). Looking to the future, the rich biodiversity of the Mozambique Channel may be a source of commercially valuable genetic resources for pharmaceuticals, cosmetics and the food industry.

Although a great source of wealth, present and future, the coastal and marine environment is at risk from over exploitation, illegal, unreported and unregulated (IUU) fishing, habitat loss, marine pollution and coastal erosion which are compounded by the impacts of climate change (e.g. Cabral et al 2017). This in turn results in declining ocean health but also the health and livelihoods of dependant coastal communities, which ultimately impacts on the economy. The rapid growth of artisanal catch from 62% in 2006 to 92% of the total 340,210 tons in 2017⁶ (DEPI) is compounded with extremely low licensing rates in artisanal fisheries. For instance, recorded rate in 2019 for districts covered by the SWIOFish1 project, some of the most important fishing areas in the country, were around 27 percent.

Approach and Report Structure

Our overall approach to the project has been guided by current global trends and principles in sustainable development, the blue economy, climate resilience and sustainable financing models, as well as by the need to identify and recommend customized financing solutions which add value to existing investments and are grounded in the Mozambican local and regional development context. Solutions must also be focused on improving the livelihoods of Mozambicans as well as the protection of the country's coastal and marine assets. For the purpose of this project, the World Bank definition of the blue economy has been adopted to reflect the current status of Mozambique's blue economy development, and as a result the report includes a discussion of the country's offshore liquefied natural gas (LNG) prospects in the sectors (see box below).

⁵ <https://tradingeconomics.com/mozambique/exports-by-category> [accessed 20 July 2020].

⁶ Note that while this reflects an absolute increase in catch this is likely also a result of improved data collection systems from artisanal catch in recent years.

Ahead of assessing financing opportunities, an important aspect of our approach is to characterize the landscape and existing blue economy initiatives underway in Mozambique as well as the “enabling environment” for investment. It consists of the country legal and policy environments, socio-economic and financial landscape and governance arrangements. Those settings are critical to build the confidence of investors, but also to ensure financing solutions are feasible, promote transparency and accountability, sustainability and inclusive distribution of benefits across Mozambicans overall. Thus, this report includes a discussion of the challenges facing the development of the blue economy in Mozambique; the most important needs to overcome these challenges, and the related investment opportunities.

Great importance has been placed on stakeholder consultations at the initial stage of the project as a source of information to get an understanding of the local blue economy institutional landscape and key challenges and opportunities from a range of perspectives.

Impacts of Covid-19

This report is based on a review of publicly available information on the socio-economic financial and environmental status of Mozambique from a range of sources. Initial in-person consultations with key actors from government, private sector, international organizations and civil society operating in the country were planned to validate and inform the characterisation of the local landscape of Mozambique. Unfortunately, due to the coronavirus pandemic and travel bans, several changes to our methodology were necessary. In-country travel was no longer possible. Staff of the ProAzul development fund, the main local partner and one of the beneficiaries of the project outcomes, provided significant support in arranging remote calls with government and stakeholders. In addition, a number of stakeholders (see annex 2) that were identified as being particularly relevant to include in the initial outreach and interviews were unfortunately unable to be contacted, in part due to our remote interview arrangement and in part likely as a result of a change in priorities and availability for key individuals in government during the pandemic. As a result, a number of gaps in understanding, notably with respect to specific particulars of the opportunities for investment, are likely to remain.

Moreover, and more importantly, the impacts of Covid-19 on the policy landscape and the priorities of both government as well as the donor community in Mozambique are only just being felt, and the full impact of the pandemic on the economy and society are not yet clear, though likely to be significant. All consideration of potential opportunities, as well as the necessary investment into the enabling environment in Mozambique, should be viewed in light of these changing circumstances.

2. Landscape Overview

Key Points

This chapter provides a broad overview of Mozambique's recent history, economy and some of the key stakeholders working on the blue economy in country. Mozambique has had a history of political unrest since independence, which still impacts on its economic and social development. Economic growth is dominated by extractive industries and associated sectors, poorly developed marine based sectors, a large informal rural subsistence agriculture and fisheries sector, and limited physical infrastructure outside urban/ports corridors.

Economic growth of the last decade has not translated into sustained development outcomes for most of Mozambique's rural population, calling for a greater focus on inclusive and sustainable development supported by strong economic policy reforms and diversification of economic activities.

External shocks (commodity prices & natural hazards) combined with systemic governance issues have weakened investor confidence, however recent macroeconomic reforms and debt management are improving this situation. The impacts of the Covid-19 pandemic are yet to be fully evaluated.

In recent years, the GoM has made good progress on developing ocean related policies (e.g. POLMAR), legislation (legal regime for the National Maritime Zone use (RJUEM), establishing institutions for policy implementation (MIMAIP and ProAzul Fund) and initiating a marine spatial planning (POEM) process, but is short still of a POLMAR implementation plan to operationalise the policy.

Investors in Mozambique range from international organisations and bilateral development partners, to private sector and non-government organisations, each with a different focus and contribution. Private sector participation in the economy, especially by MSMEs, is still constrained by complex and lengthy government procedures and financial and skill capacity. Non-governmental organisations have focused on strengthening marine conservation capacity, community-based livelihood and climate resilience projects as well as collaborating on the development of policy and regulations.

Socio-economic, Environmental and Political Circumstances of Mozambique

Mozambique became independent from Portugal in 1975. Following a 15-year troubled period of civil war, the country stabilized in the mid 1990's. However, insurgencies have taken place twice in Maputo, often occur in the Sofala area and are currently ongoing in the northern province of Cabo Delgado. The majority of the country's population is considered poor, with significantly higher levels of poverty in the more rural central and northern parts of the country (World Bank, 2020c). About 70 percent of the population (30,366.000 million, 2019 estimated at 31,020.00 in 2020⁷) live and work in rural areas, which is likely to remain the case for the foreseeable future – making a focus on rural growth imperative (World Bank, 2020c).

Mozambique is endowed with ample arable land, water, energy, and gas and mineral resources; three deep seaports; and a relatively large potential labour pool. It is also

⁷ World Population Review. 2020 growth rate 2.93% per annum.

strategically located, bordering six countries—four of them landlocked and hence dependent on Mozambique as a conduit to global markets. Coral reefs, seagrass meadows, sandy and rocky shores, and estuaries are found along Mozambique’s 2,750 kilometre coastline. Coral reefs cover an area of about 1,860 km². These are mainly fringing reefs, and are found almost continuously in northern Mozambique as far south as the Primeiras and Segundas islands. Mangroves cover about 300,000 hectares (Shapiro, 2018) of Mozambique’s coast, with major areas located along the swamp coast in central Mozambique, centred on the Zambezi River Delta and near the port city of Beira (USAID, 2019).

Mozambique is a Low-Income Country with a Gross National Income (GNI) per capita of only USD 460 dollars (World Bank 2018) ranking 44th out of 54 African countries. Though poverty remains pervasive and, due to population growth absolute numbers are growing while it is proportionately reducing, the 2020 Rural Income Diagnostic shows a considerable reduction in national poverty to 48.4% of the population in 2015, down from 60.3% in 2003 (World Bank, 2020c) - though poverty remains disproportionately high in female-headed households. Inequality is increasing, as illustrated by the deteriorating trend of the World Bank Gini coefficient from 0.4 (1996) to 0.47 (2015). Mozambique ranked 181st out of 188 countries in the 2017 Human Development Index (HDI) (SDG report for Africa, 2019).

Mozambique’s economy is dominated by extractive industries (megaprojects) and associated services, which contribute most to GDP growth while employing approximately 3% of the population, and “non-megaprojects” including subsistence agriculture and fisheries, offering limited revenue but employing most of the population. Fisheries comprise a direct contribution of approximately 2% to Mozambique’s GDP (World Bank, draft), though much of the country depends on subsistence fishing for their livelihoods (approximately 850,000 households). It should also be noted that fisheries in turn comprises approximately 6% of the agricultural added value (World Bank, 2020c). The sector is marked by low-productivity subsistence-type production patterns and limited value-chains and opportunities for value addition.

Services employed 22% of the labour force in 2016, and increased their contribution to GDP to 55.4% in the same year off the back of public sector expansion, increased urban consumption and provisioning services to megaprojects (African Development Bank, 2018). The main service sub-sectors include wholesale and small-scale retail trade (about 12% of GDP) and transport, storage and communication (about 11% of GDP). Note that due to the scale of Mozambique’s informal sector (see challenges chapter), much economic activity is not captured in these figures.

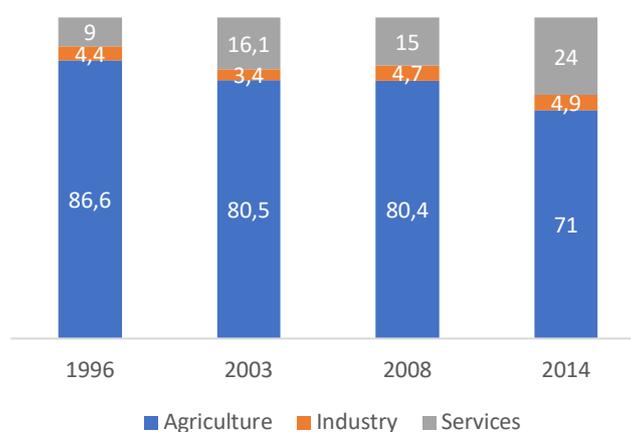


Figure 1 - World Bank: Employment by sector (World Bank, draft). Note that 'agriculture' includes fisheries and aquaculture

After 18 years of average annual real GDP growth above 7%, Mozambique's economic performance has slowed down since 2015, declining to 3.3% in 2017. This was the result of a significant decrease in both services and agriculture growth, as several mega-projects (mainly in the extractive sector, including on-shore natural gas and coal) reached completion, while international donor budget support was significantly reduced following the hidden debt crisis (see box 1), resulting in decreasing demand. This was compounded by a 2015/2016 El Niño-induced severe drought that hit agricultural production, and a decline in commodity prices adversely affecting aluminium and coal exports. Still healing from the economic fallout that followed the hidden debt crisis, Mozambique's economy was set further back in 2019 as Cyclones Idai and Kenneth destroyed housing and infrastructure across Mozambique's central and northern provinces, significantly reducing output (both events destroyed and damaged houses, businesses, and core infrastructure with losses amounting to US\$ 3 billion (World Bank, draft)). During the period 1990-2016, Mozambique was impacted by one hundred natural hazards, which affected over 20 million people, with a death toll of 4,862 that resulted in a cumulative economic loss of 16 percent of GDP (IMF, 2019).

The hidden debt crisis

On April 2016, the Government of Mozambique acknowledged the existence of lending operations hidden from the public, partners and the IMF amounting a total of over USD 2 billion for the development of an integrated maritime security and national tuna fleet capacity. State-backed debts were taken on by three companies – Mozambique Asset Management (MAM, USD535 million), ProIndicus (USD622 million), and Empresa Moçambicana de Atum (Ematum, USD 850 million), the loan sources being respectively VTB Bank (UK), Credit Suisse and VTB, and the European bond market.

The operations violated the budget law and the legal threshold for guarantees provided by the Ministry of Finance, and circumvented the otherwise relatively structured country public financial management systems. A Parliamentary Inquiry Commission and the General Attorney Office deemed the guarantees illegal. As a result, the country defaulted on its debt and the Metical crashed. The IMF cancelled its Standby Credit Facility, while its partners suspended budget support. A subsequent public audit found that nearly USD 1.2 billion (55% of the loans net proceeds) remain unexplained or unaccounted for after the audit conclusion.

In March 2018 the IMF concluded an Article IV consultation together with a Debt Sustainability Analysis which deemed Mozambique in a “debt distress” situation. In the same month, the Government started discussions with creditors, for a rescheduling of the commercial debt. The IMF Article IV report highlighted the importance of fiscal consolidation to complement a debt rescheduling deal with creditors and allow a normalization of the very high levels of interest rates. The Article IV report also lays out a set of Governance reforms, some of which have since been implemented by the government, in order to get the country onto a solid financial footing (AfDB 2018).

Looking ahead, agriculture and extractive industries are expected to drive economic growth in the short term, based on a continued expansion in mining and coal exports, supported by a global recovery in commodity prices. A very sharp acceleration in growth, projected for 2023-24, reflects the anticipated start of LNG production (Mozambique's GDP is forecasted to grow 5.8% in 2020 and 4% in 2021, as a result of gas discoveries off the coast). Discussions on the use of proceeds from LNG investments, including the establishment of a sovereign wealth fund, are currently underway. Other economic activity is conservatively assumed to continue to grow at a steady rate of 4 percent per year (IMF, 2019). Though current contributions of ocean-based activities are not accounted specifically in GDP statistics, consulting firm

Deltares identified a number of key economic figures from most blue economy sectors, listed below.

Table 2 - Key data from established sectors and renewable energy in Mozambique

Sector	Employment	GVA	Contribution to GDP
Fisheries	400,000	USD 387 million	2-4%
Aquaculture	~ 6,422 315 ¹	USD 1.3 million	0.01%
Coastal and Seabed mining	Data not available	Data not available	~0.9% (rise of 4.1% in 2018)
(Oil and) gas	229 ¹ Estimate of 700,000 by 2035	150 Trillion Cubic Feet; the value is an estimate of USD 2 to USD 9 per million cubic feet ² Estimate of USD 95,000 million until 2045	Gas – 3.3%; expected to be 13.25% by 2038
Renewables	Data not available	Data not available	Data not available
Shipping	Data not available	USD 8.5 billion ³	~74% of GDP
Port infrastructure and services	Data not available	Estimate of USD 60 million	~0.5 of GDP
Tourism	350.000	~USD 954 million	6.6%
Coastal Development	Data not available	Data not available	Data not available

(Adapted from: Deltares, draft)

Efforts to Build a Blue Economy

Strategic Context

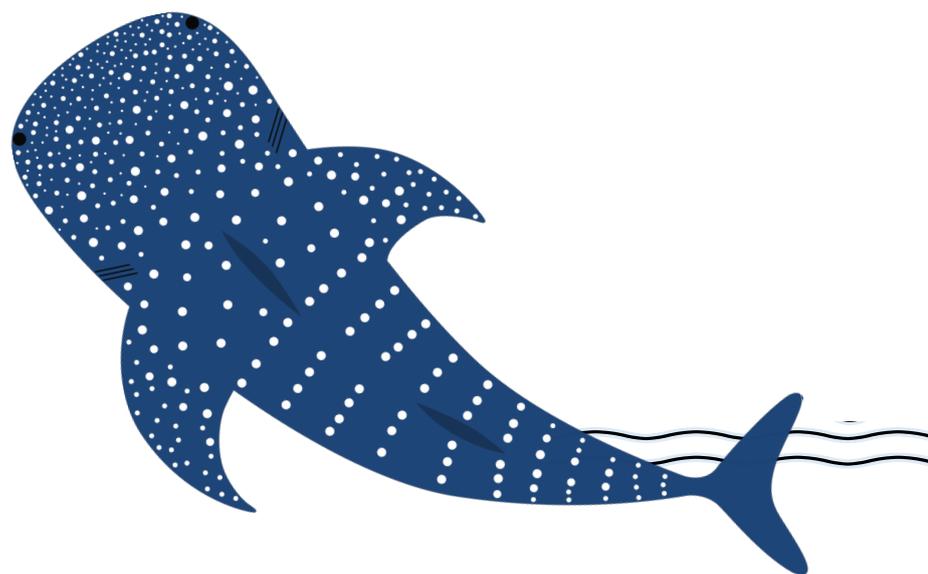
Mozambique's National Development Strategy (2015-2035) led by the Ministry of Economy and Finance on behalf of the Government is the overarching framework for national sustainable development. It is one of the national strategies⁸, implementing the United Nations Sustainable Development Goals agreed to in 2015. Its main goal is to "improve the living conditions of the population through the structural transformation of the economy and the expansion and diversification of its productive base." (National Development Strategy 2015-2035). The Strategy is to be implemented through 4 pillars: the development of human capital and physical infrastructure; research, innovation and technology; institutional coordination and sector development. The Strategy developed by the former government has not been widely shared or used to inform sector strategies and priorities, unlike the Government's 5 year Implementation plans. The current 5-year implementation plan (2020-2024) places a strong emphasis on the establishment of a robust macroeconomic environment, based on sound fiscal and monetary policies and institutional coordination, as a necessary condition for the promotion of economic growth, stability and sustainable development. Although the 5 year plan refers to agriculture, fisheries, aquaculture, maritime transport, manufacturing, extractives and tourism industries, all relevant to the blue economy, it does not refer to a blue economy *per se* as an integrated approach for the sustainable development of the ocean and inland waters and a contributor to the economy and sustainable development.

⁸ Other national strategies implementing the SDGs include the national strategy for adaptation and mitigation and the Intended National Determined Contributions 2015.

Legal and Policy Settings for Blue Economy

The legal framework, which regulates the use of ocean and inland waters, include the Sea law (2019), which specifies the requirements to be satisfied in order to perform maritime activities and navigation within the waters under Mozambican jurisdiction. It is implemented by 2 decrees, decree 35/2007 which approves the regulation of commercial activities to be performed by vessels and decree 21/2017, which establishes the Legal Regime for the National Maritime Zone Use (RJUEM) and including activities such as coastal zone management, land use planning and zoning⁹ (see below). The Law of the Sea, originally from 1996, was updated in 2019 (Law 20/2019) including reference to the government sea policy, the contribution of a sustainable and profitable blue economy (chapter VII article 79) and the establishment of a National Sea Council (article 81) to oversee all aspects of its implementation. Under article 98 of the Constitution, natural resources are the domain of the State, which has significant implications for framing access to resources including marine and coastal resources.

The overarching policy document of relevance to the blue economy is the Sea Policy and Strategy (POLMAR Decree 39/2017). Its vision is *“a safe sea, managed in an integrated and responsible manner, with socio-economic benefits for Mozambique, towards sustainable development”*. The geographical scope of the Policy covers the maritime zones as defined under the Sea Law, and includes inland waters, rivers and lakes. The Policy is underpinned by important values such as sustainability, defined as a *“balance between the exploitation and the sustainability of existing resources at sea; between the conservation of marine and coastal resources and the production of wealth and development; and between man and other living and non-living beings; and Equity “for a fair and supportive distribution of benefits, in order to contribute to overcoming inequalities and promoting equal opportunities for all groups and interests”* (POLMAR 2017). It espouses principles such as the Paying user principle and the holistic principle i.e. *“issues related to the space of marine and coastal ecosystems are interrelated and must be treated as a whole and in harmony with the precautionary principle”* (POLMAR 2017). See Figure 2 for the evolution of sea law, policy and institutions.



⁹ Mozambique ratified UNCLOS in 1997.

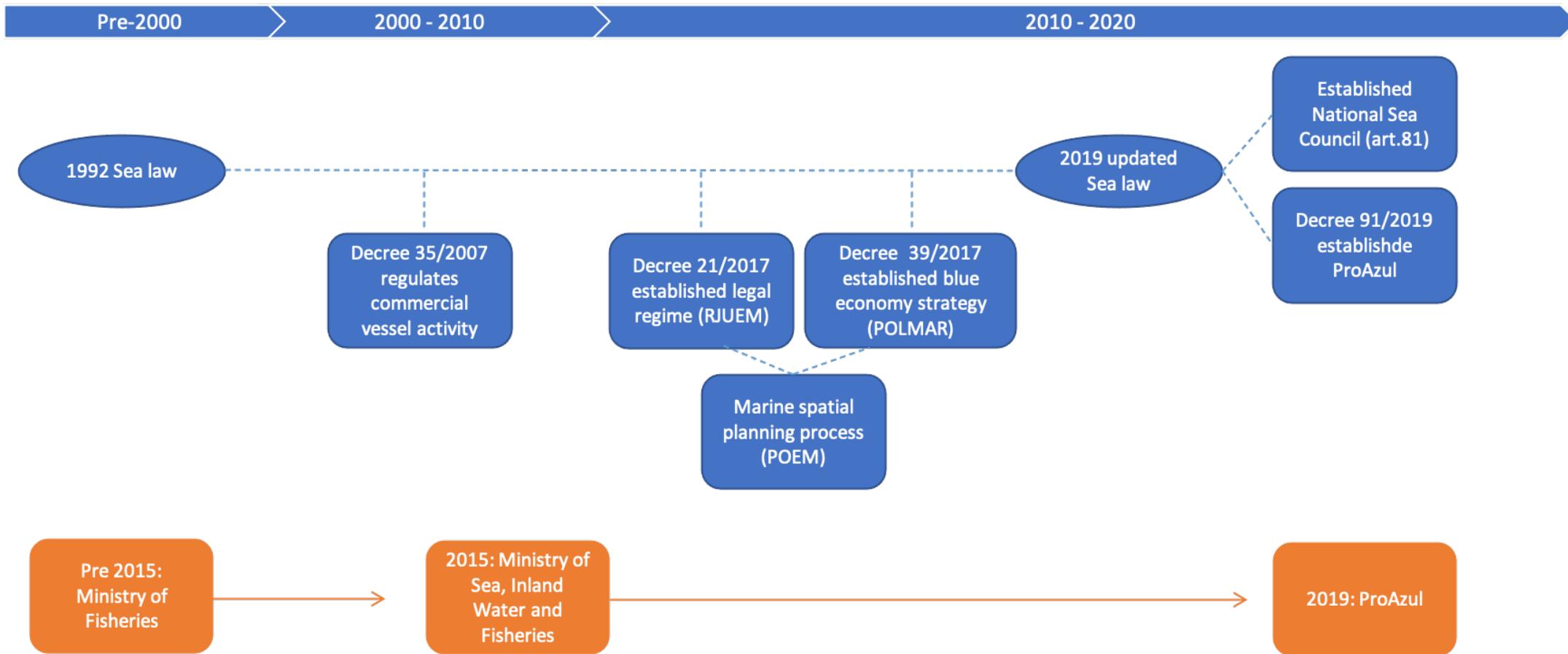


Figure 2 - Evolution of sea law and related policies and institutions (MIMAIP/ProAzul)

The Sea Policy (POLMAR) aims to establish an environment favourable to the development of economic activities and the application of taxation systems for concessions, access and use of natural services of the environment, marine and coastal resources. The Sea Policy and Strategy has seven pillars each identifying issues to be addressed. They include: Governance and legal framework; Inter-institutional coordination; Marine and coastal environment; Economic development; Territorial development; Human capital development and International cooperation. Blue economy sectors included in the Policy include Ports and infrastructure; Shipping and shipping industry; Fishing and aquaculture, Culture, tourism and sport, Minerals and hydrocarbons; and Energy. Although comprehensive in scope, the Policy has yet to develop an implementation plan (or implementation plans) to operationalize its vision and strategic priorities including the specification of institutional arrangements, financing and monitoring and reporting.

In order to implement POLMAR and following a decree establishing a Legal Regime for the Use of the National Maritime Space (RJUEM, 2017), The Ministry of Sea, Inland Waters and Fisheries initiated a 2 year marine spatial planning process (POEM) which applies to “*all maritime zones under national jurisdiction as defined in the UN Convention of the Law of the Sea*”, to include the spatial and temporal distribution of uses and activities existing and potential and natural and cultural values with strategic relevance for environmental sustainability and intergenerational solidarity” (TPF & Biodesign, 2020). The POEM is a participatory process with a consultative committee of key stakeholders. Phase 1 of the POEM report (in draft) released in 2020¹⁰ includes in-depth analyses of trends and forecasts of growth and development of the sectors that occur in the maritime and coastal space. The next phase will include an extensive consultation process to map out potential conflict areas and allocate space to maritime and coastal activities including the protection of the coastal and marine environment. Importantly, the POEM is being developed in coordination and alignment with the National Plan for Territorial Development (PNDT), under the responsibility of the Ministry of Land and Environment (MITA) to ensure alignment of uses and activities between the mainland, the coastal zone, the maritime space and the islands of Mozambique.

Towards the Implementation of a Sustainable Blue Economy

The Mozambique “Growing Blue” conference held in Maputo in May 2019 further developed a national policy dialogue that resulted in the commitment by the government to progress a sustainable blue economy in Mozambique. A side event on financing the blue economy, organised by ProAzul with the World Bank and African Development Bank was hosted to begin exploring financing opportunities for blue economy sectors. Following the “Growing Blue” conference, a number of additional developments in the establishment of Mozambique’s blue economy have taken place, including the creation of the blue economy development fund (ProAzul, see below), though the concept of the sustainable blue economy has yet to be fully embraced and gain momentum across government. In part because a whole of government operational institutional arrangements to advance a blue economy agenda has yet to be established and also as a result of the aforementioned implementation plan for POLMAR implementation not having been yet developed, limiting awareness and opportunities for mainstreaming the blue economy agenda across government.

¹⁰ The POEM released in 2020 consists of 4 volumes, the first volume describing the framework, the second an assessment of the maritime and coastal spaces, the third, a review of uses, activities and functions, and fourth, Options for future development opportunities.

3. Challenges

Key points

Mozambique faces a number of challenges to the development of a blue economy. These are subdivided here across six key areas:

1. Mainstreaming a blue economy agenda – this challenge covers such issues as a lack of a common understanding of what the blue economy means a lack of institutional coordination, lack of clarity on mandates for the blue economy between institutions and unclear priorities for implementation of the POLMAR policy framework
2. Ocean governance and administrative capacity – this covers issues related to maritime security, enforcement and maritime boundaries, as well as the needed human and financial resources for governance, which are limited across government
3. Financing a blue economy agenda – this addresses the financing challenges facing the country, notably following the hidden debt crisis and its ramifications
4. Private sector participation – this looks at challenges related to competitiveness, the scale of the informal economy, the dominance of state-owned enterprises and the challenges to doing business facing Mozambique.
5. Physical infrastructure – this looks at a fundamental constraint to potential investment as a result of missing basic infrastructure – particularly transport and energy infrastructure, as well as coastal defences and their vulnerability to climate change along Mozambique's coast

Despite progress in developing policy, legislation and institutions in support of a sustainable blue economy, Mozambique faces a number of implementation challenges to achieve a sustainable blue economy, many of which must be addressed in part or in full in order to enable investment. These challenges are divided across a number of categories outlined in this chapter – it should be noted that many of these challenges interrelate and, in some cases, compound each other. The key challenges are described across the major areas of concern and the implications of these challenges for the development of a sustainable blue economy are considered. While there are many challenges that touch on the blue economy (including challenges related to social infrastructure such as healthcare and education), here the focus remains with those challenges most immediately relevant to the blue economy. The subsequent chapter on needs and enabling conditions explores some of the potential mechanisms and interventions to address these challenges.

Mainstreaming a Blue Economy Agenda in the Policy and Institutional Landscape

Building ownership and commitment to the implementation of blue economy agenda is a work in progress. Although good progress has been made in the development of policy (POLMAR), legislation (RJUEM), establishing institutions (MIMAIP and ProAzul), and initiating a POEM process, blue economy as a concept remains novel both in politics and government, despite global and regional initiatives articulating blue economy as a framework including the *Blue Economy Conference* held in Kenya in 2018 and more recently in the African Union blue Economy Strategy (2019). In particular, the development of ProAzul, a platform that acts as a gateway and link between stakeholders, providing information about the financing needs of projects aimed at the development of the blue economy, has been a key development. ProAzul focuses in particular on screening, monitoring and realization of potential opportunities for the

blue economy in Mozambique, focusing in particular on ports and related infrastructure; mineral and hydrocarbon resources; fishing and aquaculture; culture, tourism and sport; maritime transportation and shipping industry; energy, and research and development. Following the *Growing Blue* conference held in Mozambique in May 2019, the blue economy and its broad implications for the development of Mozambique are growing in importance and awareness, but uncertainty remains around what it means, how it will be implemented, and by whom.

Following reforms in the Ministry of Fisheries in 2015 and the introduction of a broader mandate as the Ministry of the Sea, Inland Waters and Fisheries, the blue economy narrative has steadily risen up the policy agenda, notable in particular through the development of a new policy for the ocean, POLMAR and the legal regime for the use of the sea (Government of Mozambique, 2019). However, while MIMAIP has taken ownership over the blue economy narrative, in reality many aspects and sectors of the blue economy (conservation, marine renewable energy, shipping and port infrastructure as well as tourism being particularly noteworthy examples) rest with other parts of government, including the Ministry of Land and Environment, Ministry of Transport and Communication, Ministry of Mineral Resources and Energy and Ministry of Culture and Tourism, notwithstanding the central role for the Ministry of Economy and Finance in both financial management and broader development planning. At the same time, while the name of the ministry changed to encompass a broader blue economy mandate in practice much of its expertise continues to rest with fisheries and aquaculture, with less collective experience on broader topics of the blue economy, as well as limited capacity for public-sector driven research into Mozambique's marine environment. In addition, as identified in the introduction, while POLMAR sets out the government's intentions for the development of Mozambique's blue economy, it lacks a clear implementation plan for implementation of the blue economy that specifies the strategic priorities, key sectors and available resources for implementation.

Similarly, while substantial progress has been made in higher education for the sciences, access to technical, vocational education (and, in particular, with a focus on livelihood opportunities in the marine environment beyond fishing) for the blue economy, particularly in more remote regions remain limited, constraining the scope for entrepreneurialism and the development of business skills that enable the development of a blue economy-focused private sector. Nevertheless, it should be noted that several projects, including donor-backed programmes are looking to expand availability of vocational training in Mozambique¹¹.

As a result both of a lack of an implementation plan for POLMAR and the blue economy at a national scale, significant uncertainty remains around MIMAIP's central role in coordinating the implementation of the blue economy with the rest of government. Efforts to coordinate and develop a common understanding, notably through the establishment of a National Sea Council (See Law of the Sea 20/2019), are underway however have yet to be implemented in practice (see next section on institutional coordination).

Ocean Governance

Enforcement of existing legal frameworks at sea remains a challenge in light of limited capacity and resources, and requires the finalising of maritime boundaries¹². Illegal activity, notably with respect to the threat of piracy, IUU fishing and trafficking, remain present in Mozambique's waters and affect national and regional security. This presents risks to investment and challenges investor confidence. Illegal activity in the context of the blue economy can have a direct impact on revenue, society and the environment – notably with respect to IUU fishing,

¹¹ Including for example the World Bank's MozSkills project that focuses on technical and vocational education and training.

¹² Baselines were confirmed (decree 55/2020). A submission was made to the UN Law of the Sea in 2010 for an extension of maritime boundaries to include an area of continental shelf beyond national jurisdictions but this has yet to be finalized.

which places additional pressure on fish stocks and undermines legal fisheries operations, food security, and reduce government revenue.

Similarly, governance for safety-at-sea, notably in the context of the future development of offshore LNG, is set to become a significant area of concern. Mozambique lacks capacity to implement a maritime security strategy, with the 'Polícia Costeira' and navy facing significant capacity and skills constraints given the scale of the country's EEZ.

Building Administrative Capacity

Critical to the development and implementation of a blue economy agenda is the availability of data and efficient information systems to be able to monitor activities and policy impacts in a transparent and accountable way. Overall, Information on results and financial flows are currently not being regularly recorded unless external finance has been provided specifically for this purpose. The Ministry of Economy and Finance, which is responsible for the management of public resources as well as the monitoring of implementation of donor capital, does not track specifically for blue economy-related programming, which compounds the lack of information about the impact of policies and initiatives set at the central level¹³. The lack of widely accessible e-systems for collecting and analysing sector-based key statistics¹⁴ constrains administrative efficiency, transparency and accountability, as well as a greater understanding of the contribution of the blue economy to GDP and development, and hence the importance of ensuring its sustainability. By way of context, the European Union's blue economy strategy is underpinned by the clear understanding of its contributions to the EU's economy and society as a whole provided by EU-wide blue economy indicators.

A final and significant challenge is that there is often a lack of continuity and institutionalization of knowledge within key ministries and government agencies as a result of reshuffles in personnel and ministerial mandates, which are not offset by initiatives to support robust knowledge transfer and capacity building. As a result, expertise on key topics often doesn't correspond with the relevant ministries or agencies when their mandates change or are expanded, reducing capacity to implement thoughtful policy. A noteworthy example is in the conservation of mangrove forests, historically under the purview of the ministry of environment, but subsequent to the establishment of MIMAIP considered an element of MIMAIP's coastal mandate. However, relevant skills and experiences, either through personnel transfer or training related to mangrove conservation were not comprehensively carried across from MTA to MIMAIP.

Financing a Blue Economy Agenda

Historically, Mozambique has relied on substantial donor support for the country's central budget. 40% of the government budget was funded directly by development partners in 2013, though the ODA/GNI percentage has steadily been declining, to 12.9 percent in 2018 (OECD-DAC, 2020). This situation was gradually improving and tapering off in the mid-2010s before the hidden debt crisis of 2016, when Mozambique admitted to US\$ 2.2 billion in undisclosed lending to modernize the domestic tuna fleet and develop maritime security equipment and services. Subsequent to this crisis, the withdrawal of substantial bi- and multi-lateral lending and the cessation of budgetary support, the Mozambican economy dipped into recession and

¹³ A big challenge here is the lack of Rio Markers for ocean-related activity, which track ODA funding for biodiversity, desertification, climate change mitigation and climate change adaptation. Nevertheless, applying similar markers to blue economy programming in order to track funding would be a helpful start. An example approach, though not comprehensive, of such blue economy-related trackers is the EU-funded [Ocean Tracker](#) that tracks international blue economy funding commitments made through the Our Ocean conference.

¹⁴ For example Kenya's monthly publication of Leading Economic Indicators for key sectors and commodities through the Kenya National Bureau of Statistics, or the EU's [Blue Economy Indicators](#).

defaulted on its sovereign debt – as a result, existing plans for development partners to move funding away from central support were delayed, and lending programmes were frozen or cancelled. While Mozambique is steadily recovering from the crisis following sweeping macroeconomic reform and support from the IMF, World Bank and development partners, it has not yet regained the position it held before 2016, and concessional lending remains at a substantially lower level than previously. It is worth noting, however, that for many institutions including IFAD and the World Bank, while concessional lending was reduced or stopped altogether, grant making increased.

The hidden debt crisis also significantly limits the country's fiscal space, and taking on more debt presents risks to debt sustainability and management. While some international actors, notably China, have continued to invest heavily in Mozambique and the region (notably in road infrastructure where one third of road construction has been undertaken by Chinese contractors (Schiere & Rugamba, 2011) and investment continues in the context of the Belt and Road Initiative (Club of Mozambique, 2018), additional borrowing may place Mozambique in a debt trap from which it would be difficult to recover. This limits the available public financing instruments for investment in the blue economy.

This, combined with the recent impact of covid-19 and the likelihood of a significant global recession in 2020, further delays the prospect of improving Mozambique's financial stability. While the likely recession will have an impact worldwide as investors move capital to safer investments, it remains too early to tell what the precise impact of the pandemic will be on both the health of the global economy as well as changes to policy and funding priorities, though initial signs point to a rapid response by multilateral banks to unlock additional resources to respond to the pandemic (demonstrated for example by the provision of an additional US\$160 billion in grants and financial support for 100 countries announced by the World Bank in March 2020 (World Bank, 2020b)).

Finally, and independently of the existing health crisis and debt distress facing the country, as a result of limited institutional presence throughout the country and a substantial informal sector (estimated at 80% of the labour force, Aga et al, 2019) (particularly relevant with respect to small-scale fisheries), the tax base from which the country can draw domestic revenue is not as large as it could be, limiting treasury income for the country.

Greater Private Sector Participation

The private sector faces a number of fundamental obstacles to doing business, which would impact the blue economy. Mozambique is highly reliant on mega-projects such as oil & gas and natural resource extraction, with a focus on exports and limited contribution to fiscal revenue until recently. This also leaves the country exposed to commodity price shocks as well as the potential for Dutch Disease¹⁵, necessitating the diversification of the economy.

A key concern for the private sector is an overall lack of competitiveness (Mozambique ranks 137th out of 141 in the Global Competitiveness Index (World Economic Forum, 2019)). For many sectors, unfavourable competition with politically protected enterprises and a poorly prepared and financed private sector continues to dominate the landscape, though efforts are underway to privatise many of these enterprises and liberalise key sectors, moving them into private ownership, with a new government law and decree aimed at increasing the transparency, accountability and debt management of state-owned enterprises (Law 3/2018). Mozambique ranks 138th out of countries surveyed for ease of doing business, suggesting the

¹⁵ Defined in economics as the relationship between an increase in economic development of one sector (often extractives) at the expense of the broader economy. The key factor is that exports from the prosperous sector drive up the value of the national currency, making exports from other sectors more expensive, depressing their export potential and reducing their competitiveness.

structural challenges to establishing an enterprise, securing a line of credit, enforcing contracts and protecting investors further challenge the establishment of a healthy, formalised and competitive private sector.

A key challenge to the Mozambican private sector is related to scalability – most of the MSMEs, which make up the bulk of Mozambique’s private sector, have very limited managerial capacities and expertise, while facing substantial difficulties in accessing capital, limiting their ability to develop. At the same time, the size of potential markets domestically is very limited and access to international markets requires overcoming high barriers to entry. However, efforts such as those provided by APIEX (the agency for the promotion of investment and export) work to address some of these barriers.

Furthermore, potential foreign investors face substantial barriers to entry to invest in Mozambique’s private sector due to multiple layers of bureaucracy and expense associated with investment (for example the costs and delays associated with export through one of Mozambique’s major ports as a result of packing supervision and phytosanitary checks [World Bank, 2019]). As per a recent banking sector public presentation discussing the likely impacts of COVID-19 on the economy, the participating banks (BIM, ABSA and MozaBANCO) referred to the volume of unpaid credit (70%) as the reason for its scarcity and cost.

In addition, and as previously touched upon in terms of tax revenue, much of Mozambique’s economic activity takes place through the informal sector, estimated to be 89% of enterprises and 30.9% of GDP (Medina & Schneider, 2018). The 2018 Enterprise Survey shows that unfair competition from informal enterprises as among the top-three most commonly mentioned obstacles faced by firms in the formal sector. Efforts to bring the informal sector into the formal taxation system are underway through both the MEF as well as some development partners, notably USAID.

Where significant revenues from international investment have been generated, particularly through the exploitations of natural resources, benefits from foreign investment have not materialized in on-the-ground changes and quality of life improvements in Mozambique’s rural communities (World Bank, draft). Where extractive industries are destined for export, there is limited scope for Mozambican workers to be employed in highly specialised roles by multinational firms working in Mozambique, as a result of limited availability and quality of education. Close to 40% of the formal enterprises in Mozambique have foreign employees as managers or professionals (World Bank, draft)¹⁶.

Similarly, while substantial progress has been made in higher education for the sciences, access to technical, vocational education (and, in particular, with a focus on livelihood opportunities in the marine environment beyond fishing and tourism) in more remote regions away from urban centres remain limited, constraining the scope for entrepreneurship and the development of business skills that enable the development of a blue economy-focused private sector. Nevertheless, it should be noted that several projects, including donor-backed programmes are looking to expand availability of vocational training in Mozambique. A lack of skills and capacity for innovation and development also reduce long-term opportunity for productivity gains, notably prominent among Mozambique’s MSMEs. The lack of formalisation among this cohort in particular, combined with the lack of access to skills training and professionalization, limits growth opportunities for MSMEs, particularly with respect to linking with existing mega-projects that would otherwise allow for the latter’s success to trickle down through locally-owned enterprise to local economies (ILO, 2015).

¹⁶ Many of these challenges facing the private sector are described in greater detail in a forthcoming World Bank Mozambique Country Private Sector Diagnostic (World Bank, draft).

Physical Infrastructure

⇒ **Transport**

Mozambique's limited physical infrastructure presents a significant obstacle to development of a sustainable blue economy, notably with respect to a lack of well-maintained roads which limits the accessibility of regions outside the major cities, notably in the central and northern parts of the country (World Bank, 2020). Worryingly, the quality of Mozambique's transport infrastructure has decreased between 2009 and 2015, with a tripling in the average distance to transport (ibid). This impacts on both the ability for resources to flow into a remote area or community as well as the ability for goods and services to flow out – a key limiting factor, for example, in building export markets for Mozambican seafood products.

Where roads continue to require further investment, Mozambique's ports have enjoyed a period of sustained year-on-year growth, notably across the three main ports of Maputo, Beira and Nacala, with additional ports planned for development, both for container cargo as well as dedicated to the oil and gas developments slated for the north of the country. Recently, a domestic cabotage service was reintroduced, with the potential to scale up Mozambique's domestic shipping significantly (Club of Mozambique, 2019).

⇒ **Access to Public utilities**

Closely related to transport infrastructure is the ongoing need for rural electrification in coastal communities. The lack of electricity in rural communities, though steadily improving (World Bank, 2020) compounds many of the other challenges in this chapter, and prevents productivity increases and development of electricity-dependent value-adding services, notably to primary industries, for example in mechanized processing and refrigeration technology for the seafood sector. Approximately 24% of the population had access to electricity in 2016, though this figure was higher for urban areas (IRENA, 2018).

Furthermore, water availability and sanitation as well as availability of an effective waste management system are similarly limited. Rough estimates show that around 60% of waste is not collected, as municipalities do not have the financial, human and material resources to deal with urban growth and increased production (Dias & Socre, 2014). Of the total waste collected, 23% is disposed of in a sanitary and environmentally appropriate manner, the remainder is destined for open dumps or "controlled" landfills. As a result, plastic and other waste streams continue to flow freely into the environment, including the ocean¹⁷. Broader waste, including industrial pollutants and agricultural runoff, are an additional concern and have the potential to result in harmful algal blooms, marine dead zones, coral bleaching events and other negative impacts in the marine environment and coastal communities' health. These issues are a key area of focus for UNEP's [Global Programme of Action for the Protection of the Marine Environment from Land-based Activities](#) (GPA).

⇒ **Vulnerability to disasters caused by natural hazards**

Due to its location on the western fringes of the Indian Ocean as well as its latitude, Mozambique is subject to extreme fluctuations in weather, notably through periodic droughts as well as flash flooding and tropical storms. The most prominent cyclones in recent history, Idai and Kenneth in March – April 2019, had significant impacts across the east African region, devastating homes, destroying crops and taking lives. Estimates of their impact on central Mozambique include a death toll of 648, leaving close to one million people (3.44% of the total population) without shelter and over US\$3 billion in economic damages. Estimates combining

¹⁷ Efforts are underway to address some of these challenges through Pillar 2 of the World Bank's MOZAZUL programme.

exposure and population data in areas affected by cyclone Idai suggest that about 60% of the affected were poor, exacerbating existing levels of poverty and vulnerability across the population (World Bank, 2019).

As Mozambique's urban settlements are all located along the coast, a high proportion of both the population as well as centres of economic activity and infrastructure hubs are exposed to such extreme weather events - around 70% of the population lives within 100 km of the coast. Compounding the issue, climate change is set to exacerbate the severity and frequency of these natural challenges in the coming years, affecting long-term economic growth, population health and stability.

Coastal erosion is a serious problem throughout central and southern Mozambique, where major cities (including Maputo and Beira) have been built on top of parabolic dune ecosystems, which play a vital role both in coastal defence and reducing wave erosion. The oceanic coastline of the city of Beira corresponds to the most affected segment of the Mozambican coast, where the built environment extends to the terrestrial limit of the beach and the marginal road (and associated protection structures) were installed over the primary dune. The scale of coastal development removed mobility from the beach-dune system, which is, by its nature, dynamic, removing the natural protection offered by the beach edge (TPF & Biodesign, 2020).

In addition, given the extent of low-lying coastal land, estuaries and lagoons particularly along the central coast, Mozambique is prone to disasters caused by natural hazards. While coastal defences exist in Maputo and Beira, their capacity is limited, and the nature of these defences means they are able to 'push' eroding forces out to the surrounding environment, with potential consequences for relatively unprotected peri-urban environments around the urban core. As demonstrated by the impacts of cyclone Idai on the port city of Beira, existing defences do not provide meaningful protection against social and economic losses. As a result, whenever an extreme weather event hits the Mozambican coastline, this bears a significant impact on economy and society that might be mitigated to an extent were greater protection in place.

Blue Economy Implications

The challenges facing Mozambique have clear implications for the development of, and investment in, a sustainable blue economy. While some of these implications may impede potential development, others may provide opportunities for a greater focus on the blue economy within Mozambique's wider development.

There is an urgent need to develop an implementation plan for POLMAR and blue economy development as a means to diversify Mozambique's economy and empower local communities, raise awareness of the coastal and marine space as a space for economic growth, poverty alleviation and prosperity, but also as a space to manage responsibly and sustainably for the future. This may prove a key contributor to reduce the impacts of "Dutch Disease", and improve investment flows both private and public towards an enabling environment conducive to a more inclusive development pathway aimed at reducing poverty and building a resilient economy and society.

The challenges to development presented above such as physical infrastructure, provide significant opportunities to develop sustainable and renewable utilities and coastal defences. The need to supply electricity in many remote communities provides opportunities for the development of renewable energy projects, which are well suited to rural settings compared to non-renewable power generation, which require extensive distribution networks. While

much attention has been paid to investment in renewable energy in a terrestrial context, there may be additional opportunities to explore renewable energy generation in a marine setting, notably through offshore wind, floating solar and wave power, which will be discussed in greater detail in the 'opportunities' chapter.

There are also significant opportunities to develop coastal defences based on natural infrastructure (also referred to as green infrastructure), discussed in the needs and enablers chapter.

However, there are a number of ways in which the present challenges significantly limit investment and development opportunities in specific sectors of the blue economy. Of particular significance is the limited availability of transport infrastructure throughout the country, which limits the ability of key potential sectors of the blue economy that are highly dependent on access to markets, notably fisheries and tourism, to develop.

These factors combine to clearly identify the necessary enabling conditions to overcome these challenges and enable blue economy development, described in the next chapter.



4. Needs and Enablers

Key Points

In response to the challenges facing Mozambique in the development of a blue economy, a number of needs can be identified to address these challenges and enable potential investment opportunities. These are organised along four key areas:

1. Governance, policy cohesion and institutional coordination – this examines the potential steps that can be taken to improve coordination across government around the blue economy, and the central role for MIMAIP in facilitating this under the strategic guidance of the Sea Council
2. Administrative capacity and monitoring – this explores ways in which human resource capacity can be improved, notably in the context of changing mandates within institutions and how monitoring of financial flows may optimise disbursement towards blue economy projects
3. Doing business – this section examines the improvements that may be made to the business climate in Mozambique and builds on previous studies in this area, and considers their implications for blue economy investment. This also looks at improving skills and employment opportunities through vocational training
4. Physical infrastructure – this looks at the vital importance of investing in public infrastructure, notably in transport and energy in rural areas, which may in turn enable blue economy investment opportunities

As described in the previous chapter, Mozambique faces a number of challenges to the development and implementation of a sustainable blue economy, and as a result a number of clear needs emerge to address these challenges. Many of these relate to broader development challenges facing Mozambique, on which a number of key documents have been written, notably the annual World Bank Doing Business reports and other strategic documents (World Bank 2020; World Bank 2020b). As this information is already well-described, this report focuses specifically on those needs as they relate to the development of a blue economy and does not include discussion of areas such as reform to state-owned enterprises (SOE) or the ongoing insurgency in Cabo Delgado that are either out of scope or have less immediate implications for the blue economy.

Thus, this chapter explores needs, which, when framed another way, may represent opportunities for investment in the further development of Mozambique's blue economy notably by the government, multilateral agencies and banks as well as bilateral support, though some opportunities for private sector participation in needs investment, notably around physical infrastructure, also exist. These needs are broken down along broad thematic lines, and are cross-cutting in their application to the blue economy and its sectors. Wherever relevant, the implications of addressing these needs for the blue economy are articulated.

Governance, Policy Cohesion and Institutional Coordination: POLMAR National Sea Council

Between the commitment to implementation of the Sustainable Development Goals, the national development strategy, POLMAR and ProAzul's forthcoming blue economy roadmap¹⁸, as well as sector-specific policies and regulations, there is a very broad legislative and policy basis for blue economy development in Mozambique. However, their

¹⁸ In its implementation role, ProAzul will need to develop a programme of work in collaboration with relevant institutions and a resource mobilisation strategy to advance the implementation of the blue economy across sectors, as an integral part of POLMAR implementation.

implementation requires clarity of mandates and effective coordination mechanisms across sectors to be in place.

Although POLMAR does not have an implementation Plan as yet, it does however include the establishment of a National Sea Council to ensure a whole of government coordinated approach to POLMAR implementation and the sustainable development of the ocean and inland waters. A ministerial level National Sea Council chaired by the president¹⁹ and advised by a technical Committee²⁰ is critical to provide high level leadership and strategic guidance to POLMAR implementation and to clarify (and to some extent legitimise) the coordinating and implementing role of MIMAIP/ProAzul, as per its establishing legislation (decree 2/2017).

For the implementation of POLMAR to be successful, there must be a clear sense of ownership of the blue economy agenda among all the relevant ministries which the National Sea Council and cross sectoral Technical Committee should provide. A Ministerial National Sea Council, once established,²¹ will provide a mechanism to enable this coordination as well as collaboration around blue economy development.

Without the appropriate level of guidance, it will be difficult for MIMAIP/ProAzul to coordinate across Government the development of an implementation plan for POLMAR that identifies strategic priorities for investment, clarifies the respective implementation roles and responsibilities of MIMAIP/ProAzul, the Ministry of Economy and Finance and the key line ministries and associated funds²², the domestic and external funds and technical resources needed for implementation, as well as a reporting framework for the Council to maintain clarity, oversight and track progress.. This implementation plan once developed could provide an opportunity to better integrate development activities across blue economy sectors to achieve greater synergies and collaborations between ministries and agencies responsible for sector-based mandates. There is an opportunity for ProAzul to coordinate the development of blue economy programmes in partnership with other sector based funds and help mobilise resources for their implementation.

Subsequent to the expanded mandate of the Ministry of Fisheries into the Ministry of the Sea, Inland Waters and Fisheries, MIMAIP as well as ProAzul as an implementing fund will require greater capacity and expertise beyond their core expertise in fisheries and aquaculture. At present, both lack much of the technical capacity, human and financial resources to meet their broader coordination functions, and the development of policies and programmes that serve their broader mandate. Of particular importance here is the role for the national marine spatial plan (POEM) and national plan for territorial development (PNDT) as tools for allocating uses for the marine, coastal and inland water environments, as well as the use of regulatory instruments for managing sectors of the blue economy.

The central notion here, recognising the existing dynamics between ministries and agencies is not to take away from existing mandates, but rather to elevate the delivery of these mandates through greater coordination and opportunities for integration, with the National Sea Council acting as the central mechanism to identify these opportunities and MIMAIP acting both to fulfil its own mandates for blue economy development and as the coordinator, reporting on POLMAR implementation across government. The meetings of the National Sea Council and the Technical Committee should be transparent, with clear follow up and accountability

¹⁹ The Ministry of Sea, Inland Waters and Fisheries (MIMAIP) 2020 Draft proposal for the Approval and regulation which defines the membership and functions of the National Sea Council (CNM).

²⁰ The technical committee is to include all the relevant government stakeholders as well as representation from academia and civil Society and advise on the implementation of POLMAR, as well as ensuring international obligations are met and adequate consultation has taken place.

²¹ At the time of writing, the Council of Ministers has not as yet approved the establishment of a Minister-level National Sea Council. A committee comprised of national directors of the relevant ministries has been approved which is essential for coordinated implementation. However, failing to establish a ministerial level National Sea council would be a missed opportunity for securing high level whole of government ownership of a sea agenda as is envisaged in legislation and at the Pro blue conference. Furthermore, a high level ministerial National Sea Council would be the body to set the government strategic directions and guide implementation across government.

²² These are: the Ministry of the Sea, Inland Waters and Fisheries (MIMAIP), the Ministry of Land and Environment (MITA), the Ministry of Culture and Tourism (MICULTUR), the Ministry of Natural Resources and Energy (MIREME) and the Ministry of Economics and Finance (MEF).

mechanisms to ensure progress can be tracked, and in consultation or cross membership with other relevant coordinating bodies and instruments in government, notably the Consultative Committee for the POEM process²³.

Transparency and Accountability: Blue Economy Satellite Account

The added value of taking an integrated approach to blue economy across sector-specific projects and programmes could be achieved **through a more inclusive and transparent process of resource allocation**, which would in turn generate greater efficiencies in the use of financial and technical resources and benefit all parties. Here, a clear role for MEF exists both in tracking domestic and donor financial flows to and from blue economy sectors and activities in that reflecting the contribution of blue economy to the GDP (for example building a publicly accessible tracking system similar to the examples from the EU and Kenya highlighted in the previous chapter).

MEF could take a more proactive role in dialogue with MIMAIP, MIREME, MITA and MICULTUR including through the National Sea Council to operationalise funds for strategic blue economy activities. Given the current disaggregated financial flows related to the blue economy and the lack of participation by MIMAIP, as the overarching government institution for coordinating the implementation of POLMAR/blue economy, in existing financing transactions from users (other than fisheries and aquaculture) of the marine environment (notably the LNG sector), an opportunity exists to develop a framework for tracking future funding flows to ensure equitable disbursement of resources to agencies and ministries with a mandate to manage blue economy activities including the protection of marine and coastal environments. This is particularly relevant in the context of the design and development of the mandate and operations for a sovereign wealth fund from future LNG proceeds²⁴.

Another important impact of a transparent and accessible MEF tracking system would be greater donor harmonisation of blue economy programmes, to avoid cherry picking of popular blue economy sectors and allocating donor resources to reflect blue economy strategic priorities and mandates as set out through POLMAR and the National Sea Council and an eventual blue economy implementation plan. Particular added value may arise from including the disbursement of funds from some of the major development funds in Mozambique (including FUNAE, FNDS and ProAzul) against blue economy objectives in order to shape a clearer picture of overall blue economy implementation.

A key suggestion that would improve the transparency, accountability and equity regarding blue economy financing is for the MEF to establish a **blue economy satellite account**²⁵, which would account for all sources of domestic revenue from the coastal and marine zone and allocate funds from this based on blue economy-related mandates (flowing from POLMAR and the blue economy) towards key agencies and ministries that coordinate and implement blue economy activities, including MIMAIP, ProAzul, MTA, MADER, FNDS and other ministries and associated funds, with strategic oversight from the NATIONAL Sea Council on how this revenue ought to be disbursed, thereby creating buy-in and ownership over the process among all the relevant stakeholders. Such an approach would require strong

²³ As part of the marine spatial planning process, DIPOL, a department of MIMAIP responsible for maritime policy, is facilitating a consultative committee for POEM that includes some of the more important stakeholders in the spatial planning process, such as MITA and MEF.

²⁴ This is especially pressing given the consideration for how existing foreign investments are to be repaid by the government, for example Chinese investments in Mozambican infrastructure (Club of Mozambique, 2018).

²⁵ Based on a similar proposal from UNECA/Government of Seychelles Blue Economy Implementation Plan to advance the implementation of the priorities of the 2018 Seychelles Blue Economy Roadmap. For a discussion of satellite accounts see High-Level Panel on the Sustainable Ocean Economy Blue Paper on National Accounting for the Ocean and Ocean Economy at <https://oceanpanel.org/sites/default/files/2020-07/National%20Accounting%20for%20the%20Ocean%20and%20Ocean%20Economy%20Full%20Paper%20Final.pdf>. For an example of a ocean economy satellite account, see the US NOAA Ocean Economy Satellite Account (OESA) at <https://coast.noaa.gov/data/digitalcoast/pdf/oesa.pdf> [accessed 16 December 2020].

leadership and top-down commitment and would take time to implement, as it would require public sector reform.

Decentralisation

In addition to the above steps, which articulate the needs for coordination, cooperation and harmonisation at the central level, there is also a clear need for improved governance mechanisms at the provincial and district levels, and between these levels and the central government. A first step in building more effective decentralisation for the blue economy is to clarify the relationship between central agencies and provincial and district counterparts, particularly around regulatory delegations and financial flows. **A landscape overview of which entities manage what revenue streams and which mandates are delegated and to what level for the key sectors of the blue economy** will be a helpful first step to unpack how to improve the decentralised management of the coastal and marine environments, followed by an articulation of the specific tasks and actions to be undertaken by specific institutions at each level.

Administrative Capacity and Monitoring

Closely related to wider governance needs is the need for greater administrative capacity in Mozambique's government, particularly with respect to monitoring. Many of Mozambique's institutions have broader mandates than they are able to serve with their available human and financial resources, which create cascading bottlenecks and missed opportunities in the development of a blue economy.

While there is a limit to the available human resources in government, there are steps that can be taken to improve administrative capacity – one is to ensure that **whenever a ministry of agency receives a new or expanded mandate, adequate technical training and handover is provided** either by the organisation previously carrying the mandate (for example in the management of coastal mangroves from MTA to MIMAIP) or by an external party such as an NGO or multilateral agency able to provide in-kind support through training and development programmes. Another approach may be to **embrace digitisation and explore greater automation of routine tasks** in ways that free up key personnel to take on more complex responsibilities that cannot be performed electronically – data entry, compiling of bulk information and tracking disbursement of funds are examples of responsibilities that may be eligible for automation. Similarly, such digitisation and **use of mobile technologies**, for example for collecting fees and taxes through mobile phone services, would streamline bureaucracy in ways that make it more accessible and straightforward to the public, which has been previously articulated as a key barrier to greater inclusion of MSMEs in the formal economy (World Bank, 2020b). Rather than treat this as a means to reduce cost overheads, it is important to ensure that these efforts free up existing personnel to up skill and work on different projects, rather than reduce the human workforce overall.

Closely related to capacity is the issue of monitoring progress and results across government, particularly with respect to disbursement of national and donor funds towards key programme areas. To date, only limited information is available to provide a holistic overview of what programmes and sectors are being financed, and by whom. As touched upon above, there is an opportunity here for MEF to, linked to the national M&E systems, develop **a monitoring mechanism specifically for the blue economy**²⁶ to gain clarity on what programmes are being implemented and whether they have achieved results, in order to harmonise funding

²⁶ Perhaps in close collaboration with ProAzul, which plans to compile core blue economy indicators to better track Mozambique's progress towards a sustainable blue economy.

strategies from different sources and ensure a results-based funding system. This would have the added benefit of clarifying the contribution and importance of the blue economy to the national economy and allow for more informed budget allocation to and reporting on blue economy sectors.

Doing Business

Mozambique ranks consistently low on the World Bank's Ease of Doing Business index (138th out of 190 in 2020 (World Bank, 2020)), with a number of challenges described under the previous chapter to the development of both foreign and domestic private sector activity in country. This carries implications across multiple blue economy sectors such as fisheries and tourism, whether reliant on export of goods, influx of foreign tourists, contractors or FDI into new and existing projects. As a result, a central need for Mozambique to develop a thriving blue economy is to improve its doing business environment, and available literature has suggested key steps that can be taken in order to do so (World Bank, 2020)²⁷. It is important however to recognise that many steps have already been taken to, for example, reform fiscal policy by cutting subsidies, reducing spending and introducing new automatic price adjustments on e.g. fuel, supported by the IMF in the wake of the hidden debt crisis (IMF 2019).

A particular challenge, notably for the MSME sector (which is especially prominent in fisheries, as discussed previously) is financial inclusion and the difficulty in accessing credit and insurance, especially challenging in rural areas and for women entrepreneurs, who may lack access to development opportunities and markets due to existing gender norms (World Bank, draft). There is a clear need for improvements **within the banking and insurance sector to enable greater provision of services (lines of credit and insurance schemes) to the MSME sector at more favourable rates**, which might be facilitated through, for example, enabling the creation of communal risk pools in communities looking to establish a new enterprise. Other suggestions made previously include **widening the list of possible documents required to open a bank account to enable access for those without formal ID** (World Bank, 2020). Streamlining administration and digitising key government services as outlined above will further enable greater accessibility to services for this sector²⁸. Enabling greater financing innovations will also enable the flourishing of Mozambique's private sector and blue economy. Notably, **providing a framework that sets the rules of the game for early stage financing (including crowdfunding and venture capital)** and similar aggregate financing mechanisms, as well as **fostering additional microfinancing programmes for blue economy sectors** (notably for small-scale and community-based aquaculture and fishing, where access to capital remains a constraint) would enable significant new and additional investment opportunities in Mozambique.

With respect to attracting and cultivating foreign direct investment (FDI) for the blue economy, Mozambique faces a number of challenges discussed previously. Key recommendations here from a 2020 World Bank report include:

- Review the Investment Law, and other related legislation, and align it with international investment policy commitments, notably with regard to Fair and Equitable Treatment (FET) and unlawful expropriation;
- Introduce mechanisms to help investors navigate regulations and procedures and address grievances, entailing the establishment of an investment ombudsman and of functioning One-Stop-Shops

²⁷ Additional efforts are underway through, for example, MIC's national action plan for improving business climate 2019-2021.

²⁸ This complements existing work through the national financial inclusion strategy (supported by the World Bank's stability and financial inclusion project) and the ongoing ID4D assessment and upcoming digital governance and economy project which aims to improve access to identification for Mozambicans.

Even though Mozambique already has a competition law, a number of challenges remain with respect to competition from state-owned and protected enterprises (SOEs) that impact the ability for the private sector to thrive. The authority responsible for implementing the competition framework has never been established, and there is a high degree of overlap between ownership, regulation and management of SOEs that can lead to preferential treatment to public companies, crowding out private investments. Mozambique may consider implementing **mechanisms to promote separation between these functions of government towards SOEs and separate commercial and non-commercial activities of SOEs**. While SOE reforms with respect to transparency are underway, there remains a pressing need to promote greater market participation and transparency in public procurement, allowing for open and competitive selection of suppliers as well as actions to prevent bid rigging (World Bank, draft).

Education is another vital area for improvement, particularly with respect to Mozambique's more rural environments and continued population growth (500,000 new workers enter the labour market each year). Addressing the fundamental need for greater levels of education would enable a greater proportion of the population both to take up skilled jobs in the established blue economy (notably in the tourism, ports and LNG sectors) as well as cultivate entrepreneurs²⁹ and new businesses in the emerging blue economy (for example in bioprospecting and/or technological innovations in the blue economy). This would also provide an opportunity, as is the case in the World Bank's existing MozBio programme for terrestrial counterparts, to provide information and education on the value of the blue economy to society. Without greater capacity for education and the upskilling of the labour force in ways which enable their engagement in these sectors of the blue economy, opportunities for growth that rely on human capacity will remain curtailed. Similarly, fostering greater opportunities for **inclusive technical and vocational training** in subjects related to the blue economy, such as sustainable fisheries management (such as the training offered through the ProSea Foundation to fishermen in the Netherlands) or sustainable tourism management and practices, and natural resource management would further build skills and expertise in the workforce³⁰.

While Mozambique has made substantial strides in improving gender equity, education is of particular importance for girls and women, who remain significantly disadvantaged in education levels and subsequent employment opportunities in comparison to men, requiring additional resources and dedicated support to improve skills and move towards gender equity. **Linking the efforts of development partners and multilaterals in this regard to blue economy-specific sectors and opportunities would add significant value.**

Physical Infrastructure

Mozambique faces a number of underlying challenges in infrastructure³¹, notably the absence of roads and electricity across much of the country. For the blue economy to develop, and the financing opportunities in the next section to be realised, there is a substantial need for public infrastructure to be expanded to connect the country while doing so in a way that is as sustainable as possible, affordable and also climate resilient.

²⁹ Mozambique lacks a national entrepreneurship agenda, and it is worth highlighting that in addition to skills training several other barriers face entrepreneurs including a lack of access to markets and capital.

³⁰ The Fisheries Training Programme (FTP) of the United Nations University (UNU) at the Marine Research Institute in Reykjavík, Iceland, offers for a 6 months course in sustainable fisheries management for developing countries professionals.

³¹ According to the 2016 Logistics Performance Index, the country ranks 116th out of 160 in trade and transport infrastructure and 97th out of 160 in competence and quality of logistic services (World Bank, 2016).

In terms of transport infrastructure for the blue economy, there is a clear need to **scale up both road and rail networks**, particularly in the north of the country and away from the urban centres of Maputo, Beira and Nacala, each of which have their own deep-water ports. The link to the blue economy here is clear: the more people are able to access the coast, and the more people on the coast are able to access markets, the greater the opportunity to develop the blue economy, provided this is done in accordance with the blue economy investment principles developed by ProAzul.

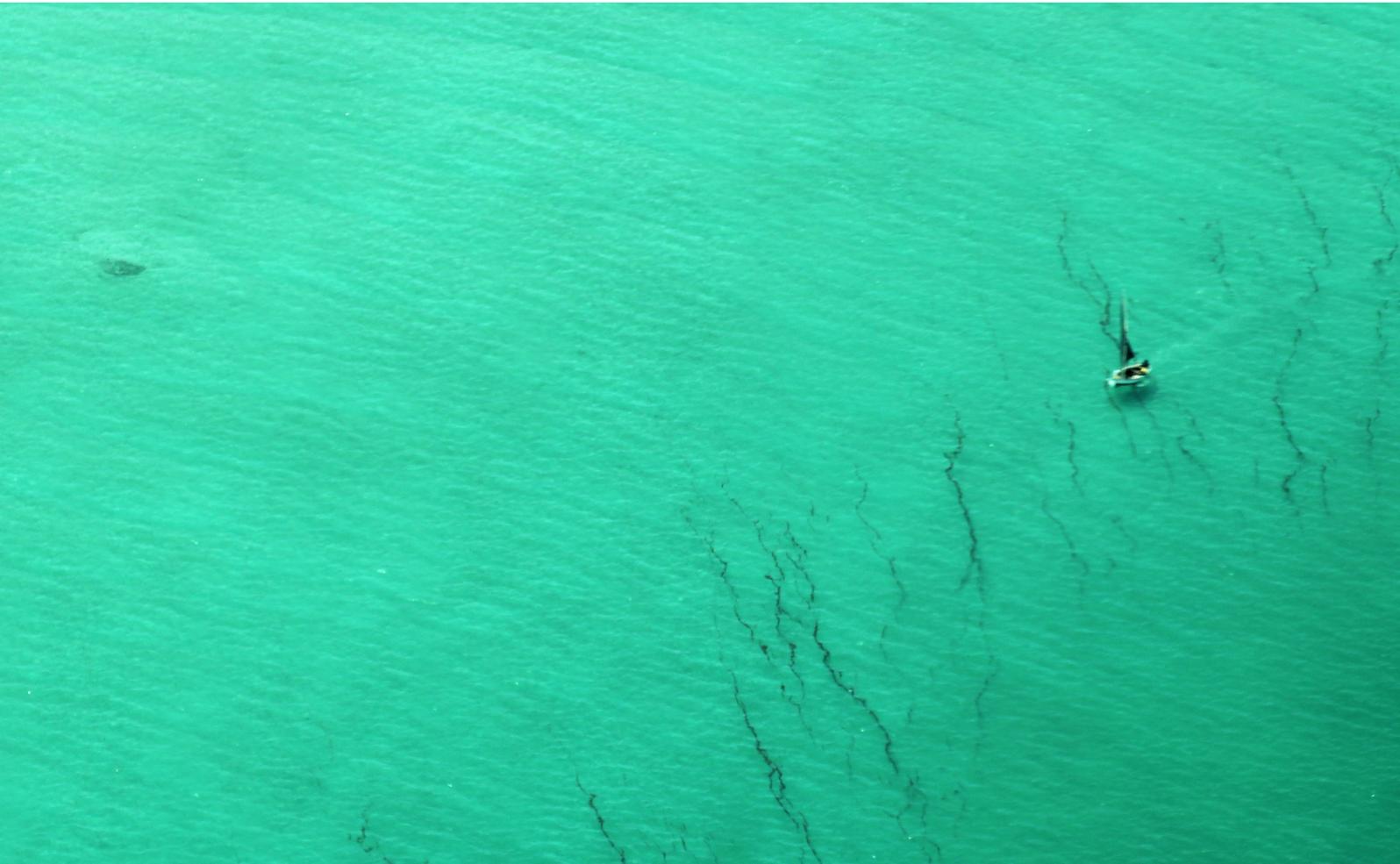
While development of transport infrastructure is in part a foundational need for the development of a blue economy, it is also an opportunity, notably in terms of the role for the private sector in developing new ports (which have witnessed high levels of annual growth – see next chapter – and have recently seen the reestablishment of a domestic cabotage service) to provide greater access for Mozambique as well as its landlocked neighbours to access global markets. Similarly, such infrastructure, in combination with doing business reforms highlighted above would create the space for developing realistic supplier development opportunities, notably in relation to the oil and gas sector (World Bank, 2020b). Thus, the secondary transport infrastructure around these ports through roads and railway lines remain a pressing need to be able to share these opportunities and their benefits with a wider section of the population.

Similarly to transport infrastructure, the development of energy infrastructure is a foundational requirement for the growth of a blue economy, notably for energy-intensive sectors such as ports and coastal tourism, as well as the creation of cold-chain infrastructure for seafood (both fisheries and aquaculture) throughout the country. Public as well as private investment into grid and off-grid solutions for Mozambique are a key development need to enable an equitable and inclusive blue economy that provides opportunities to Mozambique's rural communities in particular. As for transport, while this is a clear fundamental need, this is also an investment opportunity, particularly in the context of developing renewable energy infrastructure in the coastal and marine environment. Some progress has already been made in this space, notably with respect to the energy fund FUNAE's work to establish off-grid solar energy in remote fishing communities in Mozambique's islands and more isolated coastal areas, which in turn allows for greater opportunities for value-adding post-harvest processing in seafood supply chains. **Replicating and scaling these approaches** in ways that tie specifically to blue economy opportunities such as fisheries or coastal tourism would ensure both the needs as well as opportunities might be captured simultaneously.

Communications infrastructure, notably information and communication technology infrastructure in rural areas offers particular opportunities for transformative ways of reporting, monitoring and knowledge sharing between government and communities. At present, internet penetration remains low at 17.5% in 2017 (ITU, 2017). Access remains limited, and access remains limited to wealthy individuals and communities, with strong gender and urban-rural divides in access. Introducing expanded mobile communications infrastructure in particular may serve to support new investments but also provide an effective and efficient means for government to communicate and interact with society and for consumers to engage with e.g. banking, building on the extensive mobile network of over 14 million subscribers (National Institute of Statistics 2019).

Waste management infrastructure is another area in need of significant investment to improve public health, prevent environmental pollution from poorly managed or unmanaged waste streams, and capture any potential end-of-life value from solid waste. Much like for energy infrastructure, this is both a need as well as an opportunity, as effective waste management improves attractiveness of the environment which in turn can foster the development of the tourism sector, but in its own right also provides investment opportunities in the blue economy in ways that can empower local communities, improve environmental and public health and generate revenue.

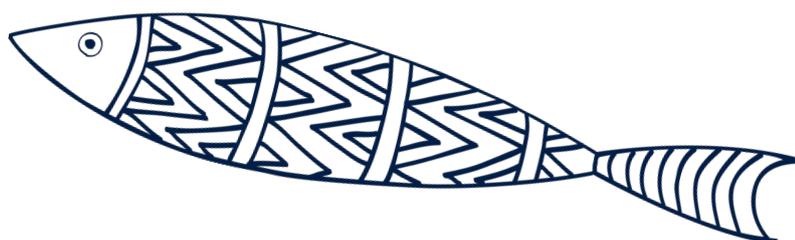
Lastly, in terms of coastal defence, evidence suggests that green infrastructure can provide ecosystem services and added livelihood benefits for local communities at lower overall long-term cost than provided by traditional, man-made (or 'grey') coastal infrastructure due to the inherent value and adaptability of natural systems, reduced maintenance costs and potential economic benefits of ancillary economic activity (Nayaran et al, 2016; Sutton-Grier et al, 2018). There may be significant opportunities for Mozambique to **explore the restoration and protection of coastal ecosystems with proven defensive capabilities that enhance the resilience of the coastline, such as mangroves, dunes and coral reefs**. These natural infrastructure solutions often provide ancillary benefits like carbon sequestration, nursery grounds for key fishery resources and tourism value, which will be explored in greater detail in chapter 5.



5. Blue Economy Financing Mechanisms

A large number of mechanisms for financing sustainable development exist, and as momentum for the sustainable blue economy grows, an increasing amount of work has been done in exploring how these mechanisms may be applied for marine and coastal zones and economic sectors. In this chapter, a selection of these mechanisms, based both on the most prominent blue economy financing mechanisms currently (e.g. blue bonds) as well as what may be best suited to Mozambique, are discussed. Note that many other instruments exist, and the *Ocean Finance Handbook*³² (Friends of Ocean Action, 2020) may be a helpful source of additional information. For each mechanism, a general overview of their structure is provided, alongside a consideration of how these mechanisms may be applied in a Mozambican context. The instruments are broken down by practitioner and capital type, and cover elements of corporate finance, investors, public finance and insurance. By nature of the challenges facing Mozambique, many of these mechanisms do not seek a straightforward financial return, in exchange receiving greater environmental and/or social impact than would be possible through mainstream financing mechanisms. Many of these mechanisms are able to be blended with other capital types to maximise returns and open up additional investment opportunities (see Table 4 for a summary of Financing Mechanisms application to Mozambique).

This section informs and contributes to the next chapter, which will explore in greater detail the specific opportunities for Mozambique's blue economy identified through this work. Table 4 below provides a summary of financing mechanisms applicable to Mozambique.



³² The Handbook seeks to provide a reference document to support calls for an increase in finance flowing towards sustainable ocean-based industry and marine conservation. In so doing, the aim is to foster understanding and generate conversations between financial institutions and marine-based businesses, conservation professionals and programme managers.

Table 3 - Summary of blue economy financing mechanisms in Mozambique

MECHANISM	RETURN-SEEKING?	CAPITAL PROVIDERS	SCALE (USD)	MOZAMBIQUE POTENTIAL	ABLE TO FINANCE THE INFORMAL SECTOR?	CONSTRAINTS IN MOZAMBIQUE	EXAMPLES IN MOZAMBIQUE
Corporate finance							
Corporate social responsibility investment	No	Multinational corporations working in Mozambique	Approximately 23.5 million per corporation per annum	Conservation-linked projects and social impact projects	Yes	Availability of multinationals and access to decision-makers	Vale port investment in Cabo Delgado
Compensation funds	No	Multinational corporations working in Mozambique	Variable fines and fees depending on incident	Conservation-linked projects	Yes	Legal framework for compensation	In the context of oil and gas spills built with limited capacity on implementation
Investors							
Impact investment	Yes, market	Impact investors	Individual projects typically 500,000 – 2,000,000	Small-to-medium scale ventures at post-seed and series A funding rounds	Yes	Ease of doing business and investor interest	From international sources (e.g. Aqua-spark), domestic capacity highly constrained
Conservation Trust Fund	No	Philanthropy, impact investors, donor capital	Typically endowed in 10-20 million range	Conservation-linked projects, small-scale community fisheries projects, small-scale tourism	Yes	Availability of capital	BIOFUND is leading example
Revolving Loan Fund	No	Philanthropy, impact investors, donor capital	Up to 3,000,000	Conservation-linked projects, small-scale community fisheries projects, small-scale (eco) tourism	Yes	Availability of capital	Substantial historic activity both through Celim as well as MIMAIP through SWIOFish
Public finance							
Market based instruments	No	Public capital	Dependent on instrument	Use of proceeds could be applied to any sector identified as a strategic priority	No	Policy commitment to blue economy and political willingness to change existing	Existing taxes for coastal and ocean users including fishers, ports and tourism operations

						balance of market instruments	
Sovereign wealth fund	No	Sovereign	Billions – trillions depending on age of the fund	Use of proceeds could be applied to any sector identified as a strategic priority	No	Establishment and operationalisation of the fund	Currently being established to manage oil and gas revenues
Sovereign blue bond	Yes	Sovereign	>50 million	Renewable energy, fisheries, sustainable ports/shipping	No	Limited fiscal space and scale	No current examples in Mozambique
Debt conversion	No	Sovereign, brokered by third party intermediary	>50 million	Conservation-linked projects	Not directly	Creditor willingness and quantifiable projects to benefit	No current examples in Mozambique
Carbon credits	Yes	Global carbon market	NA	Mangrove conservation and restoration; nature-based and green infrastructure	No	Global strength of carbon market and price of carbon	Significant experience in REDD+ financing, IUCN currently working to assess blue carbon potential
Insurance							
Parametric insurance	Yes	Insurance firms/sovereign insurance facilities	Dependent on what is being insured	Coastal and marine tourism, nature-based infrastructure and coastal resilience	Not directly	Global market volatility and price premiums from insurance firms	Initial momentum underway through Mozambique's participation in the African Risk Capacity
Risk pools	No	Insurance firms/community-based insurance	Dependent on what is being insured	Community-based fishing, tourism	Yes	Access to financial services in remote communities	Limited exploration of risk pooling though no structural barriers to implementation

Corporate finance includes capital made available by corporations, including multinationals, that may use different types of capital for financing sustainability – here, two notable examples are discussed: Corporate Social Responsibility (CSR) and use of corporate capital for compensation funds.

CSR Investment

⇒ *What is it?*

Corporate social responsibility (CSR) is a form of corporate philanthropy (sometimes called corporate giving), whereby corporations disburse non-investment capital (i.e., capital that they don't expect to generate a financial return) for a social and/or environmental good, and to mitigate any potential reputational risk from their business operations. The distinction between CSR and a pure grant comes from a CSR investment indirectly benefiting a corporation's bottom line (for example by fostering the development of a new market or optimising a supply chain). Many CSR investments are in and around a company's relevant supply chain, though in more recent years corporate efforts to build new skills and technical expertise in emerging markets has become commonplace alongside investments to offset negative social or environmental impacts (Friends of Ocean Action, 2020).

CSR is a prominent non-return-seeking financial model that has seen notable applications in the blue economy. There is potential for CSR investment in all sectors of the blue economy (as it depends very much on the priorities of the corporation and the mandates of any applicable government policy and regulation) but it is particularly noted in its use for aspects of the blue economy linked to a corporation's supply chains, such as shipping, fisheries, aquaculture and waste management.

⇒ *How does it work?*

Increasingly, CSR has been used as a means for corporations to build new markets for their activities through, for example, investment in infrastructure or education. However, as CSR is unregulated and there are no requirements on how entities disclose their corporate giving, this model can be subject to greenwash, notably in offsetting a corporation's harmful environmental impacts through token investments in CSR. By way of example, many of the large oil & gas corporations invest heavily in CSR for environmental restoration in West African nations, notably the Niger River delta, to offset the harmful impact of their extractive industries (Uduji & Okolo-Obasi, 2018).

As a result, it is important to be mindful of the context in which corporate giving is applied, and to be mindful of the motivations of corporate entities and whether these legitimately align with sustainable development. Key pre- and co-requisites supporting CSR investment therefore include a robust legal framework supporting sustainable development, strong monitoring mechanisms and standards to define sustainable behaviour, as well as strong assurance frameworks to keep corporations accountable for their investments.

While much CSR activity in the blue economy has focused on supply chain interventions, notably in the commercial seafood sector, there are other opportunities to deploy CSR resources more indirectly, notably in biodiversity offsetting and use of CSR funds to purchase carbon credits linked, for example, to mangrove restoration.

⇒ **Application in Mozambique**

CSR funds have seen some allocation in Mozambique to date, notably from the extractives sector, e.g. through the deployment of funding from Vale for community engagement³³ in the context of a newly constructed railway line to transport coal from inland to the coast in the north of the country. Elsewhere, discussions with oil and gas companies have previously revolved around the use of CSR funding towards biodiversity offset programmes to mitigate the environmental impact of oil and gas development. Given this, there is good precedent for the application of CSR funding in Mozambique, which makes this a viable strategy to pursue to identify new funding streams for the blue economy. However, to date the application of CSR resources in the blue economy has been limited, in part due to limited opportunities for engagement between MIMAIP and large multinational corporations, which typically work directly with MEF and/or MIREME.

⇒ **Next steps**

1. The most immediate steps to engage CSR funding for the blue economy in Mozambique is to identify where corporate funds may be most beneficial, and how these might work in concert with other forms of capital to enable investment. Given that these are non-return seeking funds, there are potential opportunities to leverage CSR funding to enable investment capital to crowd-in, for example by allocating CSR capital towards planning, research or data collection that de-risks and unlocks opportunities for return-seeking investment.
2. Identifying priority sectors for this approach, or using CSR in general, is also important – for example in determining whether biodiversity offset programmes,³⁴ which are already under consideration, may be extended to include marine protected areas, particularly in the north of the country where Mozambique’s coral reefs are in close proximity to much potential future oil and gas activity.
3. An important step will be to arrange a consultation with relevant stakeholders (including infrastructure providers and potential investors) to assess where CSR financing might add the most value and pinpoint opportunities for blending this capital with other sources.
4. Subsequent to identifying what the priorities for blue economy development look like (taking into account, for example, ProAzul’s blue economy roadmap), the next step for MIMAIP/ProAzul would be to engage directly with MEF and/or MIREME to coordinate dialogue with the private sector³⁵ and ensure blue economy interests are adequately represented in discussions about potential CSR allocations.

³³ Notably in the context of supporting coastal community fishing councils around Nacala Port.

³⁴ An important issue would be ensuring discussions on offsetting consider a legal or regulatory requirement and include marine considerations.

³⁵ On the basis of interviews it is understood that any engagement around use of CSR capital in biodiversity offsetting has come from engagement with MEF and/or MIREME.

Compensation Funds

⇒ *What is it?*

The direct and indirect impacts of oil spills on the marine and coastal environment and dependent livelihoods such as fisheries and tourism are significant from clean ups to restoration of ocean health to lost revenue, usually in the millions of dollars. Commonly, compensation schemes are based on the polluter pays principle with strict liability to operators of facilities responsible for incidents and environmental harm. Compensation funds and insurance are the two main mechanisms for addressing environmental damage. The objectives of a compensation fund are to provide prompt, adequate and effective remedies to those who have suffered damages in accidents or certain lawful activities, including personal or property damage and environmental damage. A compensation fund aims to mitigate harm and restore and reinstate the environment. Compensation funds may also serve as preventive measures, especially in the case of environmental emergencies (Guifang, 2019).

In the case of oceans, there exist general provisions concerning environmental damage and legal liability under the framework of the United Nations Convention on the Law of the Sea (UNCLOS) (Guifang, 2019). The main aim of the international legal framework is to enable States to prevent pollution, respond to it, and determine responsibilities in the event of an incident. Compensation for oil pollution damage caused by spills from oil tankers and bulk carriers are regulated by three international instruments adopted under the auspices of the International Maritime Organization (IMO) to which countries must be signatory to be beneficiaries. An international compensation fund can function in a number of situations, such as where the civil liability system at the national level cannot provide sufficient compensation³⁶ or where the liable person is incapable of providing compensation; where the person who caused the damage cannot be identified; or where a shared interest is damaged and there is no actual damage caused to a specific person.

Unlike spills from ships, spills from offshore oil and gas infrastructure including offshore platforms, pipelines and other ancillary infrastructure are not covered by the above IMO compensation regime. An international regulatory regime has been under consideration possibly under the International Seabed Authority (Allen, 2011). At the national level, UNCLOS gives coastal states the right to impose measures to protect the marine environment and to reduce, prevent or control pollution from devices including oil rigs. It is therefore important for coastal states to establish a regulatory regime which allows for compensation funds, mandatory insurance and other provisions to ensure that damage incurred by oil and gas exploration and exploitations activities can addressed and the marine environment and economic activities be restored.

⇒ *How does it work?*

Most compensation schemes could be designed with at least two tiers, the first tier is that the operators pay for the losses or restoration costs, with caps on liability, and usually from compulsory insurance. Where the victims cannot obtain sufficient compensation from the first tier, they may turn to the second tier, which is often a compensation fund. In some circumstances, there may be more than one fund with different maximal amounts of compensation, such as is the case with the IMO international oil pollution compensation scheme.

Mandatory Insurance requires a registered holder of a petroleum exploration permit, petroleum retention licence, a petroleum production licence, an infrastructure licence, or a

³⁶ This would require a legal framework in place for private citizen to claim damages through the courts.

pipeline licence to maintain insurance against expenses, liabilities or specified things including insurance against expenses relating to the clean-up or other remediation of the effects of the escape of petroleum, the level of insurance being determined by the operator in conjunction with the insurer to reflect the potential liability of the activities undertaken at the time including decommissioning. In the instance when not all costs in particular restoration costs, which may be long term as well as economic costs and loss of livelihoods are not covered by compulsory insurance, a mandatory or voluntary compensation fund can be established. The establishment of compensation funds raises several critical issues that must be resolved: first, how to guarantee the first tier, which involves mandatory insurance (operators); second, determining which entities (e.g. operators/government) should fund the second tier, which involves compensation funds; and third, establishing the appropriate institutional mechanism to ensure efficient and effective management of those funds. Liability and compensation mechanisms vary from country to country. For example, in the US, the responsible party of an offshore facility must have proof of financial responsibility to cover the maximum liability under the Oil Pollution Act 1990 for any recovery costs and compensation damages. In the case of the Deepwater Horizon disaster oil spill in 2010, the government also established a dedicated compensation fund, which operated as a sinking fund. In the UK, all active offshore operators are party to the voluntary Offshore Pollution Liability Association (OPOL) and agree to accept strict liability for pollution damage and the cost of remedial measures up to a maximum of USD\$250 million per incident.³⁷ Examples for compensation funds in Africa could not be found. There may be an opportunity for the African Union to consider developing guidance for countries, given the extent of offshore operations.

⇒ **Application in Mozambique**

Although Mozambique has extensive oil and gas resources and has a National Oil Spill contingency Plan (2014), the issue of liability and compensation for potential oil spills from infrastructure is still early days. A recent UNEP report (UNEP, 2018) on environmental management of the oil and gas sector funded by Norway highlighted some of the challenges from institutional coordination for monitoring environmental impacts, preparedness and emergency responses, to capacity needs for regulatory compliance but with no reference to the issue of liability and compensation issues that could arise from an incident. A brief review of the Petroleum Act 2014 shows that regulations on compensation for environmental damage by oil spills are included (e.g. art 51, 55 and 56), but guidance and capacity on how this could be implemented still needs to be developed. Conditions of license to operate oil and gas operations to specify liability, mandatory insurance and contribution to a compensation fund could be considered as well as institutional arrangements for effective management of such a fund. Building capacity of the government in regulatory compliance, risk assessment, environmental monitoring and institutional coordination for preparedness and emergency responses and regional cooperation as need be would be essential to an update the National Oil Spill Contingency Plan. Finally, the government should ensure it is up to date on ratifying international IMO conventions and agreements on oil pollution from ships to be eligible for international compensation finance³⁸.

⇒ **Next steps**

1. The government should stake stock and update national current legislation, policies and international obligations regarding oil pollution from both ships and offshore infrastructure³⁹.

³⁷ In the event of damages exceeding US\$ 250 million, the operator remains liable at law and compensation can be applied for through the courts.

³⁸ For a review of international and regional law on oil spills see UNEP/Nairobi Convention and International Maritime organisation (2020). *Regional Oil spill preparedness in the Eastern Africa and the Western Indian ocean. Background document*. Also See UNCTAD 2020 article on the recent Mauritius oil spill at <https://unctad.org/news/mauritius-oil-spill-highlights-importance-adopting-latest-international-legal-instruments>

³⁹ A recent update on the status of Mozambique oil preparedness can be found at <https://www.itopf.org/knowledge-resources/countries-territories-regions/countries/mozambique/>.

2. The government should ensure that licenses to operate an offshore facility and associated infrastructure (e.g. ships' land-based liquefaction factories) include legally binding liabilities including compulsory insurance and investigate whether an industry-based compensation fund already operating in Mozambique or if a regional compensation fund already exists and the level of compensation it provides⁴⁰.
3. The government could require under law that the companies operating in Mozambique contribute to a compensation fund (possibly under the Petroleum Act) managed by an independent body.
4. Technical assistance would be required to assist the government to set up a compensation scheme that would work in Mozambique⁴¹.

Investors

Investors are here described as entities working specifically with investment capital to finance projects, and are therefore distinct from corporate actors or public finance, which will be described in the next section. Investors can be both return-seeking, as in the case of Impact Investment, as well as non-return seeking, as in the case of Conservation Trust Funds and Revolving Loan Funds.

Impact Investment

⇒ **What is it?**

Impact investing faces a number of distinct definitions, and it is important to be clear on what is meant by the term. The Global Impact Investing Network (GIIN) defines impact investing as: *“investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return”* (GIIN, 2017). Typically, impact investment is a form of equity investment, purchasing shares in a company that will earn dividend and, if performing well, rise in value. While equity is a common feature, impact investment models are often blended, and can include debt and several capital providers to create and support the environment in which an investment is likely to be successful and profitable (Friends of Ocean Action, 2020). Impact investment is closely related to venture capital and mainstream equity investment, and typically targets early-growth stages of an investment (often referred to as series A, the first 'post-seed' funding round for companies seeking to grow). Impact funds vary significantly in size, though typically remain capitalized at <US\$ 500 million, with individual projects often financed in the range of US\$500,000 – US\$2,000,000. Impact investors typically expected a 5-10% risk-adjusted return⁴² over the lifetime of the investment, though this can be lower in emerging markets (GIIN, 2017).

Impact investment is prominent in both green and blue economy financing, though as it often relies on blending with development finance to reach an acceptable risk-adjusted return, and because development finance is only accessible in emerging markets, it is generally more common in the developing world. To date, impact investments in the blue economy have taken place in projects with a focus on natural capital and product innovation. Impact funds in the blue economy typically raise US\$100 – 200 million, in part because a lack of investable projects at the appropriate scale and risk-adjusted return, alongside general uncertainty

⁴⁰ Examples from offshore oil and gas producing countries such as in South America could provide examples.

⁴¹ The International Maritime Organisation (IMO) and ITOPI can provide technical expertise.

⁴² Risk-adjusted return denotes the expected return on investment for a project that factors in the reduction in return associated with key risks. This would be over the lifetime of an investment.

around investment in the ocean (Friends of Ocean Action, 2020). Below follows a table highlighting some of the key impact investment funds focusing on the ocean worldwide.

Table 4 - Table of leading ocean impact investment funds worldwide

IMPACT FUND	SECTOR FOCUS	GEOGRAPHIC FOCUS	SCALE (USD)
Althelia Ecosphere Sustainable Ocean Fund	All blue economy sectors, notably fisheries, aquaculture, conservation	Global	132 million
Meloy Fund	Fisheries	South East Asia	22 million
Encourage Capital Pescador Holdings	Fisheries	Latin America	10 million
Rockefeller Ocean Engagement Fund	Pollution prevention, carbon transition and ocean conservation	Global	212 million
Aqua-spark	Aquaculture	Global	130 million

⇒ **How does it work?**

Impact investment funds, much like Conservation Trust Funds (CTFs, see below), typically manage more than one fund, and these individual funds often have specific objectives or targets in terms of social or environmental impact. For example, Althelia Ecosphere, a UK-based impact investor, maintains a number of funds dedicated to sustainable forestry, and one fund, the *Sustainable Ocean Fund*, which is specific to blue economy investments. Fundraising for impact investors to capitalize these funds is similar to mainstream asset managers, courting asset owners on the basis of an investment prospectus containing anticipated risk-adjusted return forecasts and a selection of deal characteristics to invest money into the fund, which is then managed by the partners of the fund. A key difference in impact investment is that these asset owners may also include development finance and philanthropy, who may invest development capital with a higher tolerance for risk, and/or include capital specifically as a credit guarantee, de-risking the prospect of involvement with the fund to other (commercial) investors (see diagram below). For example in the case of Althelia Ecosphere, USAID provided a partial credit guarantee of US\$ 50 million over the Sustainable Ocean Fund to de-risk investment by other more commercially oriented asset owners.

Key enabling conditions for impact investment include strong political willingness from development institutions as well as the project country's government to engage with the impact investors, as well as sufficient financial literacy and business planning capacity from the target project to engage with investors to ensure a pipeline of investment projects is viable. Of these, the latter two may be supported through technical assistance by the impact fund's partners (notably NGOs, policy makers and development institutions) to bring projects up to investment readiness (Friends of Ocean Action, 2020).

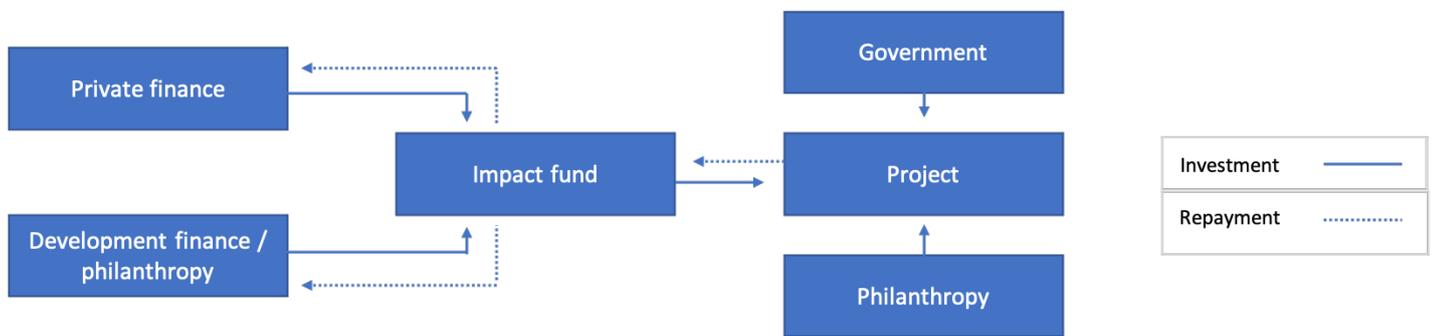


Figure 3 - Example structure of how an impact fund may raise capital and work with partners on a project. Solid lines represent investment, dotted lines repayment. Adapted from the Ocean Finance Handbook (Friends of Ocean Action, 2020).

⇒ **Application in Mozambique**

Mozambique faces a number of challenges in the venture capital and early-stage financing space, of which impact investing is a part. Entrepreneurs and potential investors in Mozambique are subject to structural impediments that complicate even the most fundamental activities of their day-to-day work. In particular, there are four principal types of issues that could hold back the growth of the digital entrepreneurship funding ecosystem: (i) the absence of a coordinated government strategy with respect to entrepreneurship, (ii) a deficiency of investment ready companies, (iii) an adverse legal, regulatory and tax environment, and (iv) a shallow market for human capital (McGinnis, 2019). A key challenge facing impact investment in Mozambique is that current legislation does not allow for the aggregation of funds under a parent fund (or 'fund of funds'), which is the basis for most impact fund structures. As a result, there are no reported domestic impact funds or venture capital funds. Similarly, many potential investments for impact investors in Mozambique do not have the skills, experience or expertise to meet investor scrutiny, for example lacking professional accounting, bookkeeping and management systems (GIIN, 2016). Thus, the current impact investing landscape in Mozambique is small, with only a handful of investors placing approximately USD 50 million in investment in 2016 (ibid). Nevertheless, impact investment already takes place in Mozambique including in the blue economy through foreign impact funds such as Aqua-Spark (a Dutch impact investor) participating in an aquaculture deal in the Chicoa fish farm. As such, there is useful precedent for additional impact investment to move ahead in Mozambique. The role for government in impact investment is somewhat limited in comparison with other mechanisms in this section, as typically only donor countries and their respective development finance institutions/funds are able to invest into impact funds. Nevertheless, opportunities exist for example for ProAzul to explore a status as financial intermediary, enabling matchmaking services between funds and potential blue economy projects in-country.

However, there is nevertheless a strong role for 'recipient' countries to play in ensuring the enabling environment for investment is welcoming to impact investors. This primarily manifests as improving the business environment (discussed elsewhere in this report), especially for foreign companies (which impact investors are likely to be), for example through addressing constraints around capital repatriation, restrictions on exits and local shareholding requirements (GIIN, 2016) as well as supporting and prioritizing efforts to improve financial literacy and business skills in rural communities (allowing for projects to develop that would be able to attract impact capital) and playing a coordinating role between the relevant parties around technical assistance towards any potential investment project – for example ensuring that the needs of local communities and existing policy objectives align well with the investment plans of an impact fund.

⇒ **Next steps**

1. ProAzul could undertake a demand-driven analysis to determine the appropriate actions to unlock impact investing for the blue economy at a greater scale, including an examination of the potential pipeline of investment-ready ventures, as well as possible complementarity with other funding models and opportunities for approaches to blending capital for investment.
2. Opportunities may also exist for existing institutions including BIOFUND and FNDS, alongside ProAzul, to establish linkages with international impact investment funds to explore investment opportunities in Mozambique.
3. Separately, and as discussed in previous sections, a considered efforts to improve the doing business environment in Mozambique and addressing some of the barriers to greater investment (including addressing capital controls and greater skill and expertise in MSMEs towards bookkeeping, accounting practices etc) would be of significant value in enabling additional impact investment to materialize.

Conservation Trust Fund

⇒ **What is it?**

A conservation trust fund (CTF) is a private legal entity that provides grant funding for conservation (Conservation Finance Alliance, 2013). They are typically capitalised by development partners, governments, NGOs and the private sector to create an endowment, the interest from which can then be used to generate grants to finance conservation. CTFs are at the smaller range of financial instruments, typically endowed in the US\$10-20 million range. CTFs can themselves manage other funds, including sinking funds (where the endowment diminishes over time as grants are disbursed) and revolving loan funds. As they focus on grant capital, they are well-suited to projects that do not generate a financial return.

⇒ **How does it work?**

The mechanism for a CTF is very simple – an endowment of sufficient size is capitalised through donors, government funding and/or CSR contributions to allow for the interest rate on the endowment to be sufficiently large to disburse as annual grants to different conservation projects. To maximise the interest rate, the endowment is often invested into low-yield bonds or similar ‘safe’ investments with a reliable return, rather than being held in an account where the interest rates are much lower. CTFs work well as an intermediary between the public and private sector and between large financial institutions and relatively small projects (Bladon et al, 2014). Typically, CTFs look for long-term project commitments of 10-15 years for the activities they finance as this provides a degree of certainty in where funding is allocated year-on-year and maximises conservation impact (Mathias and Victurine, 2012). CTFs can be dedicated to single projects (for example the conservation of a coral reef) or function as large umbrella entities (such as the FMCN⁴³ in Mexico) that manage a number of smaller funds for different purposes (Friends of Ocean Action, 2020).

CTFs are structured as trusts as this allows a trustee to legally own and manage the donated resources, provided this is underpinned by a legal framework and rigorous monitoring and reporting requirements to ensure transparency and efficacy. They are reliant on skilled coordination between multiple partners and alignment on objectives and priorities for the fund to focus on – as such, high political willingness is required for them to succeed.

⁴³ The Fondo Mexicano para la Conservación de la Naturaleza, established in 1994, is Mexico’s foremost CTF comprises of multiple funds under 5 different umbrella programmes, including ‘seas and coasts’, which manages 3 separate funds for the conservation of marine protected areas (FMCN, 2018).

⇒ **Application in Mozambique**

CTFs have helpful precedent in Mozambique, including for the blue economy, through BIOFUND, a CTF established with support from ANAC, the GEF, World Bank, KfW, AFD, Conservation International, and many others. BIOFUND, which was established in 2011, provides funding support for Mozambique's network of conservation areas (including all marine protected areas), and held US\$ 40 million in trust in December 2020. As a strategic partner of ANAC, and defined by the government as a public utility it receives tax exemptions that enable a greater percentage of its annual revenue to be allocated to conservation activities.

As a result, there is already a legal basis for CTFs in Mozambique and, through the success of BIOFUND, ample demonstration of their value. Thus, the main barrier to further expansion of the role of CTFs in Mozambique is not structural but the availability of funding for additional activities, with limited development partner and private sector funding available for conservation work. Given these factors, CTFs in general, and the role of BIOFUND in particular, can be considered particularly promising for the development of additional funding mechanisms for Mozambique's blue economy.

⇒ **Next steps**

Two possible trajectories exist for the further use of CTFs for the blue economy in Mozambique:

- Expand BIOFUND's capacity for grant-making for the blue economy, for example by developing a blue economy-specific programme within BIOFUND and managed by the same trustees to scale up activity for blue economy projects – for example in managing new marine protected area designations or applying biodiversity offsets in a marine context;
- Establish a new CTF with a specific focus on the blue economy, though requiring a new set of trustees and partnership with government and other stakeholders to fundraise and begin operations.

Out of these options, given the existence and track record of BIOFUND, it would be more efficient to scale up BIOFUND's existing activities with a focus on the blue economy rather than set up a new organisation for the same purpose. Depending on fundraising success, this may be realised through a marine programme comprised of either an endowment or sinking fund, with a specific mandate for funding of marine conservation, working together with and complementing BIOFUND's existing terrestrially-focused activity.

In terms of funding, given the interest from large oil and gas corporations in Mozambique's offshore gas potential, there may be an opportunity to engage with these corporations to direct a portion of their CSR funding specifically to finance a new fund within BIOFUND's existing structure for blue economy development. Initial conversations with both these corporations as well as BIOFUND to explore the establishment of a new blue economy fund and its objectives would be a good first step.

Revolving Loan Fund

⇒ **What is it?**

Revolving loan funds (RLFs) provide lending to smallholders and small business owners who cannot otherwise access capital, making them well-suited to use in remote communities typically underserved by mainstream finance (Friends of Ocean Action, 2020). RLFs may form a component of a broader community trust fund (CTF – see separate section).

An RLF is typically in the scale of US\$20,000 – US\$ 3,000,000, corresponding to what is often perceived as the ‘missing middle’ in finance – larger than microfinance, but smaller than the average impact investment fund. They are often financed by a blend of philanthropy, government funding and private investment, with some development banks and partners including the World Bank and the GEF having participated in RLFs in the past. Thus, RLFs offer a compelling way for development capital to be spent repeatedly over time, and stretch out the potential impact from what might otherwise have been straightforward grants.

⇒ **How does it work?**

In a revolving loan fund, loans are allocated from a central fund, which is itself often managed at the community level, and is replenished as individuals pay back their loans. Stakeholders typically have a hand in determining who is able to borrow money, on what terms, and (if deemed necessary) against what collateral. Rules of engagement for how the community manages and interacts with the RLF are typically enshrined during its creation.

Once replenished, the fund can issue new loans to other actors. Due to this structure and the higher level of community involvement (which is reliant on trust between parties), revolving loan funds have a comparatively higher tolerance for risk than more mainstream debt instruments and can be more flexible on borrowing terms (including what collateral to accept) than more traditional lending institutions (Friends of Ocean Action, 2020). As they typically feature very strong community-driven social and/or environmental objectives, RLFs will consider forgiving defaulted loans. However, they are still financing mechanisms and do have conditions on which they are based – for example, still requiring collateral or other forms of guarantee against a loan.

Where RLFs are based on community management, they are highly dependent on financial literacy and rigour from within the community, and may require some capacity building in this context before implementation. Similarly, they are dependent on strong legal frameworks to underpin the operation of the fund.

⇒ **Application in Mozambique**

In the blue economy, RLFs have been applied largely in the context of fisheries, notably through the California Fisheries Fund in the United States, which offered loans to fishermen on the basis of collateralised fishing quota to support fleet renewal and sustainable fishing practices (notably through investment in more selective gear).⁴⁴

In Mozambique, there is some history of applying revolving loan funds for fishing activity, though at a smaller scale – Italian NGO Celim has established savings and revolving credit groups for fishermen in Zambezia to offer small-scale financing for economic diversification and more sustainable fishing practices⁴⁵, and MIMAIP has provided revolving facilities throughout the country with the support of the World Bank SWIOFish project at a village-level.

⁴⁴ <https://communityvisionca.org/cafisheriesfund/>.

⁴⁵ <https://www.celim.it/en/progetto/river-fishing-mozambique/>.

Noteworthy here is that these funds were capitalised by the community members themselves without any influx of additional capital. With training in financial literacy and basic financial management, such initiatives could be scaled up to attract external funding for greater impact. However, scaling such approaches to additional communities, particularly in more isolated regions where access to credit continues to be a significant challenge, would present substantial opportunities for Mozambique's blue economy. While fishing is an obvious avenue for greater use of such funds, other more conservation-oriented sectors, including the establishment of community-based tourism around protected areas, might benefit from RLFs as a way of making development funds go further.

As a result of this precedent in Mozambique and the flexibility in the use of RLFs for financing activity at the community level, this mechanism is a strong contender for further consideration in the development and financing of Mozambique's blue economy. It may also be interesting to consider the development of an RLF in the context of creating a blue economy-specific programme for the existing conservation trust fund BIOFUND, as these two instruments are able to pair together quite well.

⇒ **Next steps**

1. To scale up the use of RLFs in Mozambique, it will be important to identify potential beneficiary communities throughout the coast, and determine (for example with ProAzul, to ensure alignment with the wider strategic roadmap for the blue economy in Mozambique) what forms of economic opportunity would make sense in different contexts.
2. Leveraging previous experiences MIMAIP has in establishing revolving loan facilities at the community level and considering how these might scale up for greater impact, include environmental impact, would be a helpful contribution to determining the potential scope of a broader RLF programme.
3. Then, on the basis of these decisions it would perhaps be helpful to engage with entities with experience in managing RLFs in Mozambique to clarify lessons learnt and explore how best to establish community-based funds along the coast.
4. This may form part of a scoping conversation with BIOFUND to explore the establishment of a blue economy programme within their conservation trust fund, which may include one or multiple RLFs for the blue economy as part of its structure.



Public Finance

Public finance entails the resources and instruments available for financing by the public sector, ranging from quite traditional instruments and their application (Market Based Instruments such as taxes and levies) and use of Sovereign Wealth Fund proceeds to more innovative approaches such as Blue Bonds, Debt Conversions and Carbon Credits.

Market Based Instruments

⇒ **What is it?**

Market based instruments such as taxes, fees, charges, levies, tradable permits and subsidies are financing mechanisms which, if properly designed, can be used to incentivise the sustainable use of ocean resources and reduce negative environmental damage on coastal and ocean resources, habitats and local communities. They can generate government revenue (e.g. through permit auctions) and promote beneficial uses of the ocean and the sustainable management of ocean resources, such as the management of marine protected areas, fisheries, sustainable transport and tourism, the diversification of the economy (e.g. marine renewable energy, biotechnology) or enhance coastal resilience, reduce marine pollution, as well as finance the rehabilitation of damaged habitats and wildlife (e.g. oil spills clean up). They can also contribute to greater benefit sharing (e.g. community-based activities or gender equality). These mechanisms should operate as a suite of tools to promote the sustainable use and protection of ocean resources and combine with other policy tools (e.g. use of external public finance and innovative financing) can contribute to the implementation of a wider integrated ocean governance and management regime.

⇒ **How does it work?**

Taxes place an additional cost on the use of the natural resource or the emission of a pollutant to reflect the negative environmental externalities these generate (e.g. carbon tax or pollution tax). Revenue from taxes can also contribute to investments in marine conservation and sustainable use activities (e.g. tourism related taxes, fisheries export taxes).

Fees and charges are a required payment (e.g. license to operate, entry fees, environmental levy concession) to the government for conducting a marine based activity. The payer of the charge receives something in return that is more or less in proportion to that charge (e.g. fishing/aquaculture license, a mining license or a tourism concession). Environmental Management charge is an example of a purpose-designed charge (e.g. the Great Barrier Reef Marine Park).

Tradable permits systems are rights allocated to harvest or access certain resources through permits that are limited in number and can be traded between permit holders. The total number of permits allocated need to be based the sustainability of the resource (e.g. commercial fisheries s catch limits or number of vessel days).

Subsidies are paid pay to producers to support the production of certain goods or services. Environmentally motivated subsidies are intended to have a positive impact by lowering the cost of economic activities that have lower environmental impacts (OECD, 2020). An example of negative subsidies include fuel subsidies which encourage overcapacity in the fisheries sector (and IUU) and lead to overfishing.

For those instruments to work effectively it is essential that the revenue generated do not go into consolidated revenue, but is earmarked to improve the sustainable of activities from which they originate and improve the status of ocean health they depend on. This requires a transparent and accountable system for the allocation of and reporting on funds across government. Funds generated through those mechanisms can be managed by the responsible government agency or by an independent trust and ought to ensure the participation of the industries concerned as well as other stakeholders who may be impacted. It is important to ensure that users see the benefits of those mechanisms to the sustainable management of their industry.

⇒ **Application in Mozambique**

The Mozambique government raises taxes and issues licenses and other charges from a range of coastal and ocean uses including commercial fisheries, aquaculture, tourism operations and ports. How those instruments are designed, revenue collected and used is shared between by Ministry of Economy and Finance (which has overarching the responsibility for taxation policy and revenue collection), sector-based ministries (e.g. tourism, fisheries, port and shipping, Environment, ANAC) and associated dedicated Funds. The allocation of revenue raised is under a set of sharing arrangements rules between MEF, sector-based ministries and associated Funds and agencies. Charging users for the use of ocean resources is mainly directed at commercial operations, and is poorly capturing the large informal sector (e.g. small-scale fisheries and tourism operations)⁴⁶. It is unclear whether the pricing and revenue collected are benefiting local communities and promoting sustainable use of coastal and ocean resources commensurate with the value of ecosystem goods and services provided.⁴⁷

⇒ **Next steps**

1. There is an opportunity for the government to increase and diversify its revenue base from ocean uses by charging users in ways that promote sustainable use and account for the value of ecosystem goods and services used. There is an extensive body of knowledge on valuing ecosystem services⁴⁸ as some examples of market-based instrument used in the context of the marine and coastal environment⁴⁹ MIMAIP/ProAzul could explore.
2. MIMAIP has overarching responsibility for the implementation of Mozambique Sea Policy (including through the POEM) and will have in place cross sectoral institutional arrangements (the National Sea Council and technical committee) which could facilitate a harmonised approach across government and consultation with ocean users.
3. A review of current market-based instruments, to identify opportunity to increasing revenue and redirecting perverse incentives towards beneficial uses in support of a sustainable blue economy would be desirable. It could include a review of current

⁴⁶ Small-scale artisanal fisheries (which is also commercial) require a license but the coverage is low and but slowly growing. Revenue from artisanal fisheries licenses in Mozambique are expected to return to the Community Fishing Councils, however there was no information available to verify how effective this process was.

⁴⁷ Currently, 20% of specific taxes leveraged from terrestrial tourism and forestry concessions are to be allocated to local communities. A model that could be replicated for ocean based activities. However, effective monitoring and compliance are lacking and it is unclear how taxes collected are earmarked for sustainable management of coastal resources, and supporting local livelihoods.

⁴⁸ See <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/ecosystem-services-valuation/pdf> for a discussion of valuation methodologies and applications [accessed 16 December 2020].

⁴⁹ MIMAIP/ProAzul may consider a review of existing models in the Marine environment for example, the Palau tourism green fees, or the Great Barrier Reef environmental levy, as possible options for Mozambique. Examples from tourism fees charged for African wildlife parks could be helpful. There is a substantial body of knowledge and methodologies on valuing ecosystems services including in the marine environment to draw from in relation to tourism.

institutional arrangements for reallocation to the relevant agency, district or trust fund with the mandate to manage the sector from which revenue is generated. In addition, it would be essential to also assess institutional capacity and training needs to ensure funds are disbursed in a transparent and accountable manner to ensure users support.

Sovereign Wealth Fund

⇒ *What is it?*

A sovereign wealth fund is a state-owned investment fund comprised of money generated by the government, often derived from a country's surplus reserves or state-owned natural resources such as oil and gas. SWFs are meant to provide a long-term benefit for a country's economy and citizens. SWFs vary widely in objectives, assets, size, governance, investment and sustainability. SWFs can be used as stabilization funds, savings or future generation funds, public benefit pension reserve funds, reserve investment funds, strategic Development Sovereign Wealth Funds (SDSWF), funds targeting specific industries (possibly emerging or distressed) or foreign currency reserve assets. For example, the Norwegian Sovereign Wealth Fund consists of two separate funds. The first one Government Pension Fund-Global or Oil Fund - the largest SWF was established in 1990 with the surplus revenue from Norway oil assets as a means to shield the economy from ups and downs in oil revenue. Norway SWF oil fund is managed by Norway Ministry of Finance and Norway Central Bank (Norges Bank Investment Management, NBIM). The Fund revenue is derived from its international equity, real estate and fixed income (such as bonds) investments and is worth over a US \$ 1 Trillion. The Fund only spends 3% annually⁵⁰ of its overall capital value. The Oil Fund was set up as a financial reserve and a long-term savings plan so that both current and future generations would benefit from oil wealth. Because of its sheer size, the oil fund is influencing global investment and practice. The second fund is the Government Pension Fund (GPFN). Established in 1967 as a national insurance fund, it is managed separately. Unlike a conventional pension fund, it is funded by oil revenues, not citizens' contribution and is limited to domestic and Scandinavian investments. As a result, it is a major shareholder of many consequential Norwegian companies.

⇒ *How does it work?*

SWFs are usually managed by a country ministry of finance and or a dedicated fund manager, usually a central or national bank. As an investment fund, a SWF can have a conservative or more risky approach to its investment portfolio. Investment can be as equity within the country if the aim is to promote domestic industries. Most common forms of investment are bonds and real estates, which are conservative investments. Given the large size of most SWF and their status as government owned, transparency and accountability of investment decisions and returns are important. Also important is how their investment portfolio aligns with government policy and international commitments such as sustainable development and climate change, as well as adopting international investment best practice. From a sustainability point of view, for example, the Norway Fund has been promoting ESG investing, climate disclosure and is applying those criteria to its global equity investment portfolio. It has also divested from coal companies as well as oil and gas unless they have a renewable energy component. NBIM also issued guidance (expectations of companies) on ocean sustainability⁵¹ and climate

⁵⁰ The government is to spend only the equivalent of the real return on the fund, which is estimated to be around 3 percent per year. In this way, oil revenue is phased only gradually into the economy. At the same time, only the return on the fund is spent, and not the fund's capital. Accessed at <https://www.nbim.no/en/the-fund/about-the-fund/>

⁵¹ NORGES Bank. Ocean Sustainability (expectations towards companies) at https://www.nbim.no/contentassets/7a4dda85e6094f7b84cc3a3a10be628f/nbim_expectations_oceans.pdf

change, which guide its equity investment on the assumption that ignoring those environmental factors will reduce their value to investors over the long term.

⇒ **Application in Mozambique**

Given its extensive offshore oil and gas reserves, some already under exploitation, Mozambique is establishing a SWF to manage the revenues generated for the benefits of its economy and population. According to the proposal from the Central Bank presented for consultation in October 2020, the Fund, to mature in 20% will be capitalised by 50% of the offshore LNG revenue, estimated at US\$96 billion over a 20 year period, the remainder going to the budget. At maturity, the government will be able to draw 4% of the Fund annually. The Fund is to be managed by lawmakers and the Ministry of Economy and Finance with the Central Bank in charge of the operations of the Trust and implementation of its investment policy. An annual independent audit will ensure transparency and accountability. The Proposed Fund two goals will be to accumulate savings and contribute to the fiscal stabilisation of the country. It will not be able to be used for loan guarantees or debt repayments. A well-managed sovereign wealth fund can act as a budget stabiliser and provide an opportunity to diversify its economy through for example through equity investments in blue economy sectors, marine and coastal natural capital infrastructure and climate resilience thus contribute to the economy and wellbeing of its citizens present and future. The Norway SWFs provides guidance on how to invest the revenue from oil and gas in a transparent manner which meet international best practice on sustainability, climate disclosure and impacts on the ocean⁵².

⇒ **Next steps**

1. With civil unrest in the Cabo Delgado region, where the extensive LNG deposits are located, international investors may still be concerned about the risks to investment.
2. So far there is limited information on the fund proposed investment policy, which could include domestic and international investment and/or the type of investment (e.g. equity, PPP, bonds, etc). With blue economy development being a priority of the GoM, it will be important to ensure that it is included in the investment policy of the Trust.
3. An established National Sea Council as a whole of government process could provide a platform for preliminary discussions on possible blue economy investments to be considered, once the SWF is established and operational. Norway SWF has developed guidance on oceans which guides its global investments which could inform Mozambique SWF
4. Finally a strong regulatory framework for oil and gas exploitation should be in place, to ensure that conditions of license to operate included provisions to address potential impacts on the ocean and dependant livelihoods through regulatory impacts assessments, monitoring and preparedness planning in the case of an oil spill or explosion, and compensation for harm done and regular audits (see compensation fund).

Sovereign Blue Bond

⇒ **What is it?**

Bonds are debt based financial instruments designed to raise capital (both public and private) for a range of purposes. In general, bonds are not usually deployed for issuances >US\$ 50 million. Bonds can be raised by government, corporations or banks. In the case of

⁵² <https://furtherafrica.com/2020/10/14/mozambique-plans-for-sovereign-wealth-fund-outlined/>.

corporations, bonds are typically raised to either specifically finance the operations of a given project (termed a project bond) or to finance the operations of a corporation overall (corporate bond). In the public sector, bonds can be issued both by central governments (these are sovereign bonds) as well as sub-national entities such as municipalities (municipal bonds) to finance a specific policy objective or provide development capital. Structurally, sovereign bonds are typically lower-yield than private bonds due to their lower appetite for risk. However, there are opportunities to align sovereign bond issuances and use of proceeds with existing government priorities, notably with regards to sustainability and blue economy (Friends of Ocean Action, 2020).

⇒ **How does it work?**

Sovereign bonds are issued by national governments and purchased in the global bond market by a variety of investors, though typically large-scale fiscally conservative players such as pension funds. They are backed by the credit rating of the issuer, such that a country with a poor credit rating is not likely to get a good interest rate (termed coupon) on their bond issuance, if they can secure one at all. As a debt instrument, they are predicated on the ability to repay the value of the bond at a fixed rate and over a fixed amount of time to the purchaser of the bond. The proceeds raised from the sale of the bond can then be used for a broad range of activities, which in the case of sustainability-oriented bonds (such as green or blue bonds) are often clearly identified upfront, and provide social and/or environmental returns alongside financial returns.

Sustainable bonds (encompassing green bonds, impact bonds, climate bonds and more recently blue bonds) are those that feature a specific environmental or social outcome as part of the bond's issuance, i.e. they are a deliverable for the bond alongside any financial return. Green bonds and climate bonds in particular have grown substantially since their introduction in the last 10-15 years. Sovereign 'blue' bonds have been prominently showcased in the blue economy in recent years, notably through the issuance of the world's first sovereign blue bond in the Seychelles. The Seychelles blue bond was issued in 2018 by the government of the Seychelles to finance a transition to sustainable fisheries. The proceeds of the bond aimed to improve governance of priority fisheries consistent with the Seychelles Marine Spatial Plan, and incentivize a restructure of the sector towards value adding and sustainability. The resulting transaction was a US\$15 million sovereign bond, 3 million disbursed as grants through the existing SeyCCAT (see debt conversion) and US\$12 million disbursed through the Development Bank of Seychelles as subsidised loans to local businesses.

Key to the success of the Seychelles bond were Seychelles' good economic and fiscal position and the committed engagement and the support of key partners, including the GEF and the World Bank which provided partial guarantees and technical support to get the bond off the ground, thus reducing the risk to prospective investors and making the coupon rate more affordable. Without the high level of political willingness to strike a deal (helped in part by the momentum created around the Seychelles debt conversion, which was completed in 2015) it is unlikely the issuance of the bond would have been successful. Nevertheless it still took several years to complete the transaction.

⇒ **Application in Mozambique**

Mozambique faces a tightly constrained fiscal space in the wake of the hidden debt crisis and, while its public finances have improved substantially since the height of the crisis, the scope for large-scale sovereign bond issuances or other forms of publicly held debt are limited. This makes the prospect of a sovereign bond issuance, even if linked closely to high-priority development objectives such as the blue economy, fiscally difficult to accomplish. Similarly, Mozambique's credit rating (Moody's B1/S&P B+) is considered below investment-grade, which limits the potential attractiveness of any Mozambique-issued bond, unless backed by

an international creditor able to extend an investment-grade credit rating (though again this is unlikely given the more pressing need for Mozambique to service its existing debt obligations)⁵³.

While there are substantial opportunities for investment in Mozambique's blue economy, these are largely at smaller scales (and higher risk) than those typically appropriate for bond issuances. The most promising blue economy sectors for bond issuances at this stage would be ports, shipping and offshore renewable energy development, though as these all feature strong return potential they are likely better suited to corporate or project bonds issued by the private sector.

Finally, sovereign sustainability bonds such as blue bonds require a very high and sustained level of political willingness and specialist financial skills for the bond to be realised. This, in combination with the amount of time taken to negotiate a sovereign blue bond needed from its initial conception, makes this mechanism conceptually interesting but unadvisable for the government of Mozambique in the short term. The Covid-19 crisis may provide an opportunity to include blue economy in the recovery process, however it is anticipated that addressing health may be the government priority in the immediate future.

⇒ **Next steps**

1. Should Mozambique wish to pursue a sovereign bond issuance, priority would have to be given to clearly articulating what type of blue economy investment should a sovereign bond focus on, keeping in mind the obligation to service the bond (capital at maturity and annual interest) and how it would contribute to an overall resource mobilization strategy for the development of its blue economy.
2. Importantly the Government will need to continue improving its debt management and restore fiscal space and strengthen its governance arrangements to improve the confidence of global investors and build the necessary partnerships for a successful bond issuance. Given the implications of Covid-19, this may take some time.

Debt Conversion

⇒ **What is it?**

A debt conversion or debt swap is a debt based financial transaction to raise capital in highly indebted countries to address environmental or other policy challenges. The rationale of debt swaps is that the debt can be acquired at a discount rate from creditors when they do not expect to recover the full nominal value of debt and may be willing to accept less. In exchange for (partial) cancellation of the debt, the debtor government is prepared to mobilise the equivalent of the reduced amount in local currency for agreed purposes on agreed terms. Debtor countries qualify if they are heavily indebted (according to IMF standards), if they have exhausted other more favourable debt relief instruments (e.g. unconditional debt relief, debt restructures), and if they can convince creditors that they are capable of allocating a sustainable part of the resources that have been budgeted for debt repayment to finance domestic projects which will yield significant environmental or social benefits at national, regional, or global level (OECD, 2007). Debt-for-ocean swaps can be a useful financing tool for highly indebted countries, especially SIDS with high debt burdens and vast ocean resources to protect and sustainably use.

⁵³ As a point of comparison, following Covid-19 Seychelles lost its credit rating from BB to B+ see <http://www.seychellesnewsagency.com/articles/12875/Seychelles%27+credit+rating+downgraded+due+to+tourism+shutdown>.

⇒ **How does it work?**

A recent example of how a debt for ocean swap works is the Seychelles debt swap for Conservation and Climate Change. In 2015, The Government of Seychelles completed a US\$21.6 million debt restructuring with the Paris Club of creditors. The partial debt was purchased by The Nature Conservancy (TNC) in return for the Government of Seychelles commitment to use the proceeds to fund marine conservation and climate adaptation activities. A condition of the debt swap was that Government of Seychelles would designate 30% (around 400,000 kms) of its EEZ as marine protected areas and develop a marine spatial plan for its entire EEZ by 2020. Under the debt swap arrangement, The Seychelles' Conservation and Climate Adaptation Trust (SeyCCAT) was established to administer and manage debt repayments as well as the debt service savings in the form of a revolving Blue Grants Fund and a Blue Endowment Fund, thus securing a sustainable flow of funds to support the long-term management of the Seychelles network of MPA's, sustainable fisheries, and other activities that contribute substantially to the conservation, protection and maintenance of biodiversity and adaptation to climate change. Important features of the Seychelles debt for ocean swap was the willingness of creditors to enter into such transaction and the confidence that the debtor country would honour the terms of the transaction and debt repayments. The role of TNC in purchasing the debt was an important element in building the confidence of creditors, which took years and strong political will to be realised. The SeyCCAT provides a transparent and competitive mechanism for the disbursement of funds and can also be capitalised by other funding streams such as part of the Seychelles blue bond.

Overall, debt- for-ocean and debt-for-nature swaps can be fairly complex and lengthy works of financial engineering. They are also often not positively welcomed by development partners on the grounds that they could create perverse incentives and induce moral hazard, favouring the accumulation of debt in view of a later cancellation (IMF, 2016). Grenada initially explored a debt-for-ocean swap, but this became a less attractive option due to the improvement in its debt situation following successful debt restructuring efforts (OECD, 2020).

⇒ **Application in Mozambique**

A debt swap mechanism could provide Mozambique with long term sustainable finance for its blue economy agenda in particular marine conservation, climate resilience and natural infrastructure, as well as supporting transition to sustainable fisheries or tourism. This would be an innovative financing mechanism for Mozambique. For Mozambique to consider a debt swap as a financing mechanism in support of its sustainable blue economy, a number of prerequisites would need to be considered. Debt swaps are agreements between a debtor (government) and a creditor, in the case of Mozambique with the Club of Paris. First, there would have to be willingness on the part of the Club of Paris to engage on a debt swap negotiation. Although debt swap transactions do not increase the level of sovereign debt (unlike blue bonds), they nonetheless require that loan repayments be made in a timely manner and that agreed terms be met. Second, they are complex transactions, which require time and financial expertise, as well as appropriate legal and governance arrangements for the management of proceeds to give the creditor the necessary confidence that conditions will be met. Despite the IMF confidence in Mozambique debt management, investors may be reluctant to invest in Mozambique. An option the government could consider is calling on an NGO as an intermediary as was the case in Seychelles to facilitate negotiations. In the case of the Seychelles debt swap, TNC bought the government debt, thus giving some form of guarantee to the Club of Paris⁵⁴.

⁵⁴ Other NGOs such as WWF and Conservation International (CI) have help with debt for nature swap in the context of forests. TNC has yet to implement its debt swap programme to other islands.

The Ministry of Economy and Finance has responsibility for debt management and would have to lead on such a transaction and engage with relevant ministries including MIMAIP/ ProAzul. A legally established independent Trust Fund(s) with transparent and accountable procedures to manage the use proceeds would have to be in place. Several government trust funds or agencies could play this role, including ProAzul, provided they has in place the right legal and governance arrangements and ability to meet repayments as well as transparent procedures for assessing, disbursing and reporting which satisfy the terms of the debt swap. Another option would be to allocate funds to an independent trust fund such as BIOFUND. The Ministry of Finance would have to assess the benefits of a debt swap versus other debt restructures and other forms of financing, in consultation with donor partners.

⇒ **Next steps**

1. It is unlikely that a debt swap will be applicable to Mozambique in the short term due to the extensive negotiations required with creditors and third parties to negotiate a debt swap. However, it would be desirable to initiate a conversation within government of this option and assess whether it is a mechanism to pursue in the future for financing a sustainable blue economy and more broadly the implementation of POLMAR.
2. This is a conversation the Ministry of Economy and Finance could initiate given the nature of this financing mechanism and discuss through the National Sea Council and associated institutional arrangements. The experience of Seychelles and Grenada provide valuable insights in the pro and cons or debt swaps as well as the practicalities of implementing such mechanisms.
3. Some preliminary conversations with NGOs and institutions with expertise in conservation finance may also be beneficial.

Carbon Credits

⇒ **What is it?**

Blue carbon refers to the carbon sequestered and stored in the biomass and or sediments below coastal ecosystems such as mangroves, sea grasses and salt marshes. Although 2% of the ocean area globally, coastal habitats account for approximately half of the total carbon sequestered in ocean sediments. Notably, coastal habitats sequester carbon at significantly higher rates (up to 6 times more than undisturbed tropical rainforest), per unit area, than terrestrial forests (Mcleod et al, 2011). In addition to carbon sequestration, coastal habitats provide other important ecosystem services, i.e. supporting coastal water quality, healthy fisheries, and coastal protection against floods and storms, which contribute to climate resilience. Blue carbon ecosystems sequestration and storage capacity makes them an attractive option to include in carbon budgets in countries Nationally Determined Contributions to meet Paris Agreement emission reduction targets.

The protection, management and restoration of carbon ecosystems for climate mitigation and adaptation, also called nature-based solutions or natural climate solutions, can be financed through a range of mechanisms including grants, public concessional finance, payments for ecosystem services and carbon markets mechanisms. Market systems for creating, selling, buying, and trading carbon offsets fall into two broad categories, voluntary carbon markets where by carbon offsets or payments for ecosystems can be made or compliance carbon markets whereby carbon credits generated through restoration are subject to mandatory carbon emission reductions targets and carbon pricing strategies (e.g. carbon tax or cape and trade and trade regulations) to incentivise emissions reductions. Examples of compliance markets include The Kyoto protocol Clean Development Mechanism (CDM) which allows high-income nations the opportunity to purchase carbon credits from offset projects in low or

middle-income nations and is based on set standards, verification and certification by authorized third parties (Designated Operational Entities). Coastal habitats in particular mangroves are also eligible to be included in the UN REDD+, a voluntary results-based financing programme aiming at reducing CO₂ emissions from land use conversion by financing eligible projects for the conservation and management of carbon ecosystems and the protection and enhancement of carbon stocks in developing countries. Although Investments from the private sector in voluntary payments for ecosystems services (PES) are growing (for example through CSRs), they are still dominated by the public sector (Bennett and Ruef, 2016). Buyers of carbon offsets may also be the general public keen to reduce their carbon footprint from activities such as air travel. Companies and other emitting entities are participating in the voluntary market mainly to take action to reduce emissions above and beyond their legal obligation to comply with their own CSR or Good Stewardship policies, to brand themselves as “green”, or to hedge against future compliance obligations.

⇒ **How does it work?**

Financing the conservation and restoration of coastal ecosystems can include a combination of sources and mechanisms as discussed above and (e.g. traditional concessional finance, carbon markets, REDD+), taking advantage of the range of services they provide, however the ability to generate credits for purchase through carbon markets faces a number of challenges. First blue carbon projects need to be undertaken at sufficient scale to generate significant revenue even in countries with extensive mangroves⁵⁵. Second, capturing revenues from carbon offsets faces significant barriers in the form of accurately measuring below-ground carbon sequestration, mapping mangrove extent, verification and other policy challenges such as the low level of carbon pricing (World Bank, 2020) and the demand for verified carbon credits. For many developing countries with extensive blue carbon ecosystems, nature-based solutions offer a suitable pathway for meeting NDC targets while achieving sustainable development goals.

⇒ **Application in Mozambique**

Mozambique has an extensive coastline and significant mangrove forests at risk or in need of restoration, which could provide opportunities for considering a carbon credit scheme as one of the mechanisms to finance their protection and restoration, alongside other mechanisms such as insurance (see parametric insurance). Mangroves, as well as coral reefs and dune ecosystems are critical to the protection of Mozambique coastal line, population and economy against frequent tropical and severe cyclones (see the impacts of Cyclone Ida and Kenneth 2019). Mozambique INDC 2015 did not include reference to blue carbon ecosystems. The upcoming NDC 2020 provides an opportunity to include blue carbon ecosystems in the country mitigation and adaptation activities, estimate financing needed, and expertise required for implementation including the possibility of establishing a carbon credit scheme.

The responsibility for the management of coastal zone and coastal habitats is with MIMAIP/ProAzul since 2015, with ANAC the main agency for managing marine protected areas and FNDS for managing the REDD+ programme. Mozambique also has a suite of policies and legislation which are applicable to the conservation and restoration of blue carbon ecosystems. They include the 2016-2030 National Strategy for Reducing Emissions from Deforestation and Forest Degradation and the Increase of Carbon Stock through forests (REDD+) which focuses on restoration; the Conservation Law (2017) and REDD+ decree (2018) promoting the recovery of degraded areas through reforestation, preferably in sensitive areas and fragile ecosystems, including legal requirement and procedures for restoration projects under REDD+ Program. Other relevant policies include the recently approved Biodiversity Offset Strategy (2020) and the Mangrove Management Strategy (2020). Finally,

⁵⁵ See Indonesia potential for carbon offsets at https://www.researchgate.net/publication/280598511_The_potential_of_Indonesian_mangrove_forests_for_global_climate_change_mitigation.

MIMAIP recently completed phase 1 of its coastal and marine spatial planning process (POEM).

Establishing a carbon credit mechanism would require both financial resources and technical expertise (INDC 2015). Mozambique has in place the necessary regulatory and policy setting. FNDS has the technical capacity to accurately map mangroves extent and measure and verify sequestration potential of blue carbon ecosystems to support a carbon credit mechanism which could be considered as a source of revenue for mangrove restoration.⁵⁶ The FNDS with financial support from the World bank is piloting a REDD+ large-scale integrated landscape program in the Zambézia province is an example of how rural income development can be decoupled from forest loss and natural resources degradation and address the direct causes of deforestation. Verified Emission Reduction Payments (ERs) provide a revenue stream to support the activities that reduce deforestation, such as the promotion of conservation agriculture, effective implementation of protected areas, community land delimitation, and the enabling environment to support reduced deforestation⁵⁷. IUCN has been working with MIMAIP and ProAzul on the assessment of carbon storage potential of mangroves and is working with Pro Azul on possibility of a pilot blue carbon credit mechanism based on mangroves. IUCN is also working with ProAzul on the application of REDD+ to blue carbon, reinvent the rules for blue carbon mechanisms. Sources of public finance such as the Climate finance through the Green climate fund or the Blue Action Fund could provide readiness finance to set up a blue carbon scheme.

⇒ **Next steps**

1. An assessment of the status blue carbon ecosystems combined with an audit of current financing of restoration and protection would be allow the government to assess the value adding of a carbon credit scheme as a mechanism to generate revenue from the protection of those ecosystems, keeping in mind the prerequisites outlined above.
2. The NDC 2020 is an opportunity to include blue carbon ecosystems as a carbon sink and Mozambique NDC and contributions to climate mitigation and resilience, and make a case for attracting financial and technical resources to explore a range of financing mechanisms including REDD+, carbon credits, but also insurance.
3. An important enabler would be to ensure effective coordination across ministries with relevant mandates. A joint taskforce with MIMAIP, the Ministry of Land and Environment and FNDS could be convened to start the process.

Insurance

The insurance sector as a source of financing has a key role to play in enabling finance for the sustainable blue economy – notably in the context of risk financing and reducing the coverage gap for insurance, particularly noteworthy in oft-isolated coastal communities that bear the brunt of climate-related weather impacts. Key insurance mechanisms for consideration here include Parametric Insurance and Risk Pools.

⁵⁶ Guidance is available to assist countries interested in blue carbon finance (Herr et al, 2015).

⁵⁷ <http://pubdocs.worldbank.org/en/533761581081264438/Zambezia-ER-project-PAD-P164524.pdf>

Parametric Insurance

⇒ **What is it?**

Parametric insurance (sometimes called index-based insurance) is a form of insurance where pay-out triggers immediately when a certain threshold or trigger is activated, for example wind speed or amount of rainfall. In this way, it offers a mechanism whereby insurance funds can be made very quickly available in times of crisis when the speed of access to capital is critical to early response. Owing to advances in data availability and risk modelling, their application to highly complex environmental events has increased. Parametric insurance has notably been applied in the context of hurricane recovery in the Caribbean, where wind speed is used as the trigger over a specific geographic area to immediately trigger pay-out in the event of a high-intensity hurricane. In the context of the sustainable blue economy, the insurance is often paired (for example in the COAST parametric insurance for Caribbean fishermen and the Quintana Roo Conservation Trust Fund for coral reefs (Iyer et al, 2018)) with conservation objectives and securing livelihoods of vulnerable communities, thereby also working to address the 'coverage gap' in access to insurance in developing economies. Developing these new insurance mechanisms not only provides ways to mitigate the financial impact of climate-related risks, but does so in a way that reaches the communities and regions of the world with the fewest resources to defend themselves, such as the COAST model developed for Caribbean fisheries (CCRIF SPC, 2019).

⇒ **How does it work?**

There are three main elements to what makes a parametric insurance policy distinct from more mainstream insurance, and help outline how pay-out will trigger and to whom. For example, in the case of the Quintana Roo Trust for Coastal Zone Management, Social Development and Security, where the parametric insurance is allocated towards coral reef repair, the insurance works as follows. In the first instance, it is important to define what the insurance is protecting against – in this case, damage from hurricanes. A *parameter* needs to be identified that closely interacts with the hurricane and is a good proxy for its severity – in this case, wind speed. Next, the area within which the parameter is measured must be defined, this is termed the *polygon*. Lastly, the pay-out threshold must be determined, which is the point that the parameter must exceed within the polygon to trigger automatic pay-out. In Quintana Roo, this was set at a wind speed of >100 knots anywhere in the polygon, upon which rapid pay-out is unlocked to be disbursed within 60 days. Further conditions, including the maximum total pay-out over a 12-month period as well as how the pay-out will be used, can then be identified by the parties involved (Friends of Ocean Action, 2020). The scale of a parametric insurance model can vary significantly from larger-scale contributions from the private sector (e.g. hotels, as is the case for the Quintana Roo Trust) to models that include coverage more akin to microinsurance for individual fishermen, as is the case in the COAST framework in the Caribbean. Here, governments purchase the insurance policy and disburse the pay-outs once triggered to individual fishers as well as co-operatives. The COAST model allows for such scaling to the micro level by pairing the insurance for the fishing sector with sovereign insurance against tropical cyclones, thereby ensuring the size of the overall policy and the premium was large enough to allow for financing while granular enough to enable disbursement to vulnerable communities and individuals most in need of support.

Applying parametric insurance against storms, or in the context of developing a sustainable blue economy, remains in its infancy in comparison to index insurance more broadly, and partnership between insurance providers, NGOs working the affected regions and policy makers has been key to successful implementation of these models to date. In the case of Quintana Roo, the insurance provider, Swiss Re, maintains a policy with a Conservation Trust Fund that manages premium payment on behalf of the stakeholders (both local governments

as well as hotel companies) who benefit from the insurance, and manages the disbursement of the pay-out.

⇒ **Application in Mozambique**

Mozambique has some prior history with index insurance, notably through the African Union's African Risk Capacity⁵⁸ (ARC), a specialised agency of the African Union working with its commercial affiliate ARC Insurance Company Ltd. to develop parametric insurance against droughts, floods and tropical cyclones for African states. The ARC signed an MoU with the Government of Mozambique in 2019 to pave the way for Mozambique to participate in the ARC programme that both helps identify protective structures in-country as well as mechanisms (such as CTFs) to develop a policy with Arc Insurance Company Ltd. to pay the insurance premium and manage disbursed funds.

A key challenge in applying parametric insurance is a strong underlying reliance on good and abundant data on the prevalence, nature and impact of the natural hazards for which they are intended. Notably for tropical cyclones, this includes typical trajectories and lifecycles (which is critical in designing an appropriate polygon), strength and frequency (which determines the parameter and the trigger) as well as the vulnerability of the coastal communities that they hit and the likely cost of a disaster (which determine the premium and maximum pay-out).

With the recent impacts of cyclones Idai and Kenneth, data on cyclone impact is more readily available. Further, given the mitigating role of mangrove forests against cyclones and the natural presence of such forests along Mozambique's central coast (which, owing to its low-lying land is particularly vulnerable to storm surge and flooding), there is a clear opportunity to ensure nature-based infrastructure is a candidate for receiving insurance funds for mangrove repair and restoration much in the same way as exists for coral reefs in Quintana Roo. Similarly, though there may be opportunities to look at repair of coral reefs in the north of the country or the parabolic dune systems of southern Mozambique, given the low-lying nature of the central coast, this area in particular would appear an obvious candidate for initial explorations of using a parametric insurance policy for natural infrastructure.

Another consideration is the ability of stakeholders to reliably pay the insurance premium, which in the case of Mozambique may be challenged internationally in light of its low credit rating and recent history with the hidden debts crisis. Identifying an international partner to help facilitate the establishment of an insurance policy despite these challenges will be key to success. A potential candidate here is the Ocean Risk and Resilience Recovery Alliance⁵⁹ (ORRAA), a Canadian-funded international alliance comprised of NGOs, researchers and Axa, a multinational insurance company, which aims to build understanding of ocean risk and replicate successes with parametric insurance and other innovative financing models in the Caribbean elsewhere in the world.

Given the MoU between the Government of Mozambique and ARC, as well as the recent history with tropical cyclones in-country (which provide both political will to identify solutions to increase resilience as well as additional impact data), parametric insurance may be a worthwhile financing mechanism to explore in greater detail and specifically in the context of the blue economy.

⇒ **Next steps**

Given the existing MoU with ARC, there may be an opportunity for ProAzul and MIMAIP, perhaps in conjuncture with ANAC, to present the case for inclusion of mangrove restoration

⁵⁸ <https://www.africanriskcapacity.org/about/how-arc-works/>

⁵⁹ <https://www.oceanriskalliance.org/>.

and repair in any future parametric insurance model designed with ARC to MEF, which holds the relationship with ARC. There may be additional opportunity to scope the use of a parametric insurance mechanism to explore coverage against other hazards such as a potential flooding event associated with Cahora Bassa Dam. This would require an exercise to quantify the potential benefits from healthy and restored mangrove forests in offering coastal defences in the event of a tropical cyclone, and the costs required to restore and maintain these forests in the aftermath of such a cyclone. Given the Quintana Roo model followed a CTF approach to financing the insurance premium, it may be worthwhile exploring the management of a parametric insurance policy with BIOFUND.

Separately, and with the aim of potentially attracting private insurance providers to parametric insurance in Mozambique, an exploratory conversation with the ORRAA may also be beneficial.

Risk Pooling

⇒ *What is it?*

Risk pooling (occasionally referred to as risk mutualisation) is a fundamental instrument of insurance, allowing multiple contributors to input an insurance premium into a common pool in exchange for greater coverage in the event of low-probability, high-impact scenarios. This includes risk pooling among insurers themselves – whereby multiple insurance companies seek reinsurance by pooling the risks of their combined insurance coverage to reduce the cost of the individual policies.

⇒ *How does it work?*

In the context of the blue economy, risk pools are most often considered at the sovereign level, wherein countries can pool risks in a diversified portfolio to, for example, provide coverage against major disasters such as flooding and damage resulting from tropical cyclones, as is the case in the “Caribbean Catastrophe Risk Insurance Facility” (CCRIF), which limits the financial impact of catastrophic hurricanes, earthquakes and excess rainfall to Caribbean and Central American governments by providing short-term liquidity when a parametric insurance policy is triggered, allowing for low-cost insurance policies through the spreading of risk across countries (CCRIF, 2020). Since it is highly unlikely that several countries will be hit by a major disaster within the same year, the diversification among participating countries creates a more stable and less capital-intensive portfolio, which is cheaper to reinsure. The African Risk Capacity (ARC), discussed in the section on parametric insurance, is another form of regional risk pool for extreme weather. While these sovereign risk pools are focused on catastrophe risk, they are not explicitly focused on the blue economy or the ocean.

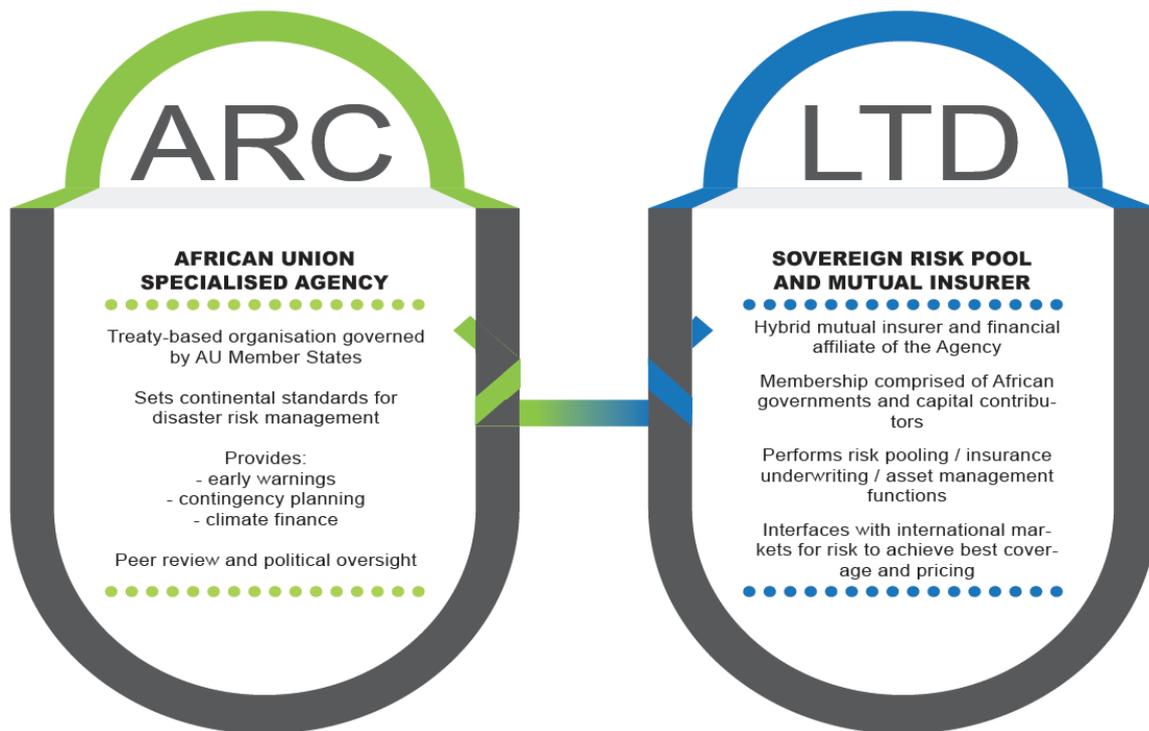


Figure 4 - ARC institutional structure. Source: ARC (2020).

However, risk pools are possible at a number of scales, and have also been applied at a localised level, for example between fishermen to offset the risk of fishery bycatch through pooling of catch quotas, ensuring sufficient quota is available to the community to mitigate the risk of quota bottleneck resultant from a high incidental catch of a non-target species for which there is much lower quota available (Kauer et al, 2018).

⇒ **Application to Mozambique**

As discussed in the section on parametric insurance, to which risk pooling can be applied, Mozambique has signed an MoU with the African Risk Capacity (ARC) to pave the way towards participation in the ARC and access to its sovereign catastrophic risk pool. Beyond this, there has been very limited exploration of risk pooling in a Mozambican context - there does not appear to be specific reference to risk pooling (or risk mutualisation, a closely related term) in legislation or policy documents related to Mozambican insurance.

In principle, however, the application of risk pooling to Mozambique does not face any structural barriers - the insurance sector in Mozambique is well established in law, with law no. 5/2010 establishing the legal insurance regime, with the Insurance Supervision Institute of Mozambique (ISSM) tasked with the governance of the sector.

⇒ **Next steps**

There is a clear avenue to pursue greater application of risk pooling at the sovereign level through the ARC, for which Mozambique already has momentum through the signing of the MoU. Here, given the significance of the interaction between climate risk and the ocean, there may be opportunities to explore how risk pooling through ARC may benefit Mozambique's blue economy. This could look in particular at lowering the cost of insurance coverage through participation in the pool for disaster relief and reconstruction, where recovery funds include a

focus on repair and rehabilitation of natural and nature-based infrastructure. Given the role of natural and nature-based infrastructure in reducing the risk of storm surge and flooding, this would serve to further increase Mozambique's resilience to climate change and extreme weather events, and in turn reduce the cost of participation in the risk pool, creating greatest impact at least cost. The immediate next step would be to secure full membership of the ARC, at which point such considerations could be further investigated and realised.



6. Criteria for Investment Mechanisms

In order to develop more specific opportunities and determine what makes for a promising opportunity, criteria are required to objectively assess its key aspects. These criteria must be clear, measurable and straightforward. Each of these criteria covers a number of attributes which are outlined in the table below. These criteria, on application against the opportunities highlighted in Annex 3 provided additional context and insight into which of these opportunities were taken forward for additional development in the subsequent chapter.

Table 5 - Criteria for selecting investment opportunities and mechanisms

CRITERIA	PURPOSE	POTENTIAL MEASUREMENT INDICATORS
Financial viability and riskiness	<ul style="list-style-type: none"> This criterion determines whether the opportunity mechanism creates a financial return, reduces the country's debt burden or government expenditure This criterion also describes the extent to which the risk associated with this opportunity can be managed (certainty) This criterion determines whether the technical capacity and knowledge necessary to implement the opportunity 	<ul style="list-style-type: none"> Projected rate of return on investment % reduction in debt burden Governments savings made The financial instruments are already in place Extent of public de-risking Builds on existing initiatives Risk return ratio Technical and knowledge capacity
Policy compatibility and simplicity	<ul style="list-style-type: none"> This criterion determines whether an opportunity mechanism is straightforward and workable in the present environment This criterion also assesses compliance with Mozambique's existing international obligations, the Sustainable Blue Economy Finance Principles and globally accepted sustainability investment criteria 	<ul style="list-style-type: none"> Number/complexity of reforms required for opportunity mechanism to be viable Infrastructure requirements Meet national priorities (e.g. POLMAR) Compliance with 14 SBEFP Contribution to SDG targets Contribution to Paris Agreement
Social inclusion and reach	<ul style="list-style-type: none"> This criterion determines whether the opportunity mechanism positively impacts rural coastal communities This criterion also determines whether the opportunity investment includes local communities, women and vulnerable groups in its design and in its disbursement 	<ul style="list-style-type: none"> Presence of a benefit sharing mechanism Co-management processes in place Rounds of stakeholder consultation established Lead to greater transparency and accountability Number of rural communities impacted
Environmental impact and resilience	<ul style="list-style-type: none"> This criterion determines whether the opportunity mechanism prevents a negative environmental impact or creates a positive environmental impact or a safe environment This criterion also determines whether the opportunity mechanism provides for greater climate resilience or offers a low-carbon development pathway 	<ul style="list-style-type: none"> Steps taken to prevent negative environmental impact Presence of offsets to mitigate negative impact Positive environmental impact is central to opportunity (e.g. recovered fish stocks) Adoption of changes practices Positive security impact Level of GHG emissions Improvement in coastal defences
Economic diversification and scalability	<ul style="list-style-type: none"> This criterion determines whether the opportunity mechanism provides for economic diversification This criterion also determines whether the opportunity mechanism can be upscaled or replicated 	<ul style="list-style-type: none"> Includes non-megaproject sectors Fosters innovation Fosters new businesses Create hubs of activities

7. Selected Investment Opportunities for Mozambique

Based on the above considerations of needs and challenges in Mozambique (Chapters 3 and 4), as well as the general investment mechanisms and investment criteria (chapters 5 and 6), this chapter explores the potential for investment in 4 key opportunities selected by ProAzul and the authors from a list of 12 potential blue economy projects ranging from improving the sustainability and viability of existing sectors such as fisheries, tourism and ports, exploring new opportunities such as biotechnology, building R&D capacity and attracting new entrepreneurs and MSME investment, to cross-sectoral investment opportunities at the sub-regional level, climate resilience building through natural infrastructure and strengthening maritime security capabilities. They are described in full in Annex 3. Investment opportunities 2, 3, 9 and 12 were taken forward for further consideration of potential investment mechanisms. For some opportunities, this resulted in some changes in approach and concept in order to identify a workable investment opportunity. It should be noted that these opportunities are intended as thought starters to help the GoM identify and assess development opportunities in the blue economy, rather than deals or transactions ready for financing. For each, further upfront work to understand and parameterise the opportunity is required.

Overall, the proposed opportunities are focused on investments aiming at building resilience of coastal communities and promote an inclusive diverse and sustainable blue economy. To inform the opportunities and their feasibility the following have been taken into consideration:

- The National Development Strategy (2015-2035), the Government 5-year plan (PQG, 2019-2024) and the Sea policy and related sector-based policies
- The socio-economic environmental, financial and institutional context of Mozambique noting the large forecasted revenue from extractive industries which offers opportunities or future investment and diversification
- Current initiatives on which to build upon; and
- The vulnerability to climate Change and external shocks (including COVID-19) which impacts on livelihoods, infrastructure, and the economy (IMF GDP costs) and the coastal and marine environments and resources they depend on.

As a principle, the focus lies with blue economy investment opportunities that deliver diversification, sustainability and inclusiveness within and across blue economy sectors as well as demonstrate the value-adding of an integrated and sustainable blue economy taking advantage of synergies, addressing common challenges and achieving positive outcomes across sectors. They offer potential roles for both public as well as private sources of capital.

For each of the selected investment opportunity, a brief summary is provided containing key details of the opportunity, followed by a more in-depth description of the opportunity, potential capital providers, key risks and how to mitigate against them, and an indicative timeline and costing – note that these are best estimates to be reflected upon and which would need to be properly refined and validated. Each opportunity is include consideration of the key role to be played by the Government and ProAzul in realising the opportunity.

The key risks facing each potential opportunity are set out according to five broad risk categories that can be used to specific risks across a variety of projects and contexts. While the categories are not specific to Mozambique, their application may take into account local contexts. They are defined as follows (other risk categories, such as currency risk or political risk, are also relevant but not described in great detail here as they are less relevant to the blue economy in particular):

- Physical risk – the risk to an investment’s physical assets, often related to the impacts of climate change;
- Operational risk – the risk to an investment project’s ongoing activities, for example a change in price of a key component or the loss of an underlying resource, such as a reduction in fish stocks;
- Market risk – the risk to an investment project from changes to the market that it serves, for example through shifting consumer demand, tariffs or exchange rate fluctuations;
- Regulatory risk – the risk to an investment from a change in regulation that affects the ability for the investment project to operate, for example the introduction of new licensing requirements;
- Reputational risk – the risk to an investment project from a change in public perception, manifesting for example through negative NGO campaigns or consumer boycotts on specific products.

Many of these risks interact with one another.

Blue Cluster

Snapshot overview – Blue Cluster

Scale: Approximately US\$ 1.65 million (650k grant funding, 1 million investment capital)

Timeframe: 5 years for initial funding round

Instrument(s): Combination of grants for cluster and incubator and seed finance provided by venture capital/impact funds in exchange for % equity stake in start-ups in accelerator

Return potential: NA for cluster and incubator, typically 25-48% IRR for accelerators (likely lower for Mozambican blue economy context; further study required)

Key risks:

- Insufficient entrepreneurs to populate the Blue Incubator
- Perceived risk of investment in Mozambique limiting fundraising potential
- High cost of doing business in Mozambique

Next steps: Survey appetite for a blue economy incubator, accelerator and cluster and develop business plan on which to begin fundraising

Mechanism

This opportunity is influenced by the successes worldwide in developing ocean incubators, accelerators and ocean clusters, and is in particular inspired by the structure and approach of the Iceland Ocean Cluster (IOC - Hollander & Thorsteinsson, 2020) to create an integrated blue incubator for Mozambique. Following the IOC’s model, the Mozambican blue cluster would include three closely related components: an incubator, focused on building entrepreneurial skills for start-up businesses and their entrepreneurs and networks for young Mozambicans to develop blue economy businesses; an accelerator to provide mentoring and investor matchmaking to promising start-ups in exchange for a seed investment, and the services of the ‘cluster’ to provide market insight and advocacy for the interests of the blue economy private sector. Each of these components would be housed under the overall brand and identity of the ‘Blue Cluster’ and would be co-located in the same physical space.

The Blue Cluster would then be a collection of individual entities with their own management and financing, with the cluster and its services based on membership fees and grants, the incubator based on grants and a ‘pay as you go’ model and the accelerator based on start-up venture capital. Both the incubator as well as the accelerator benefit from being part of the

wider cluster, which acts as the overall brand for blue economy entrepreneurship in Mozambique, and offers linkages and business relationships through its network. It would be co-located with the incubator and accelerator, though these would function as independent entities with their own objectives and (particularly in the case of the accelerator), distinct financing. Through the linkages and network effects between these elements of the cluster, this approach may go some way to offsetting some of the challenges facing Mozambique's start-up and early-stage finance ecosystem (McGinnis, 2019) such that new investors may engage with financing the blue economy⁶⁰. ProAzul would play a key and leading role in the upfront development of the cluster, notably through providing grant funding for the establishment of the cluster and towards the incubator, though the Blue Cluster itself would be an independent legal entity. Other partners, such as the MEF or World Bank may offer in-kind support or grant funding towards the operation of the cluster, with commercial partners and investors capitalising the accelerator component.

⇒ **Cluster**

The broadest group of participants in the Blue Cluster will be the *cluster* itself – i.e. the network of participants, partners and stakeholders who are interested in the blue economy in Mozambique and use the cluster as a means to network, communicate and identify new opportunities⁶¹. This could be executed both as a virtual platform as well as through in-person connectivity if the Blue Cluster is able to secure physical premises. The cost of upkeep for the cluster would be covered by grant funding or in-kind support from partners (for example, it may be worth exploring whether UEM would be able to offer premises to the cluster from the university campus in lieu of funding). Over time, the cluster may also grow into an entity that is able to advocate for the interests of the network it represents and offer market analysis and insights into Mozambique's blue economy private sector.

⇒ **Incubator cohort**

Within the Blue Cluster's incubator, young entrepreneurs (perhaps associated with UEM), with a particular focus on women entrepreneurs, may apply their start-up concept to be part of the blue incubator, potentially hosted under UEM's school of business and entrepreneurship. The incubator would focus on the start-up concept and the individual entrepreneur, providing skills training in business administration and financing, guidance on access to markets, a physical space from which to work and a network of peers and potential partners through their incubator cohort as well as the Cluster, and foster new ideas for the sustainable blue economy. Key to success will be a well-managed, professional incubator service with the right resources to be able to offer this skills training to the start-ups. Incubator members would work under a pay-as-you-go model, with monthly or annual membership to benefit from the services of the incubator, including a physical space to co-locate with partners. Successful start-ups from the incubator phase may move on to become part of the accelerator, though this is dependent on their performance and not guaranteed. The incubator's funding would be supplemented, at least in the early stages, by grant financing from the Blue Cluster's partners, such as ProAzul, though an early requirement would be for the incubator to develop a pathway to financial sustainability.

⇒ **Accelerator cohort**

Under the banner of the wider blue cluster, a separate commercial accelerator managed by a private entity (with experience in the start-up and venture capital space) will be established.

⁶⁰ To date, while accelerators in Mozambique do exist, they have not provided financing.

⁶¹ These may be surfaced both through market analysis commissioned by the cluster as well as opportunities brought to the cluster by third parties.

Within the accelerator, start-up businesses will have the opportunity to grow their business from pre-seed to the next phase in the venture cycle, ideally coming out of the accelerator ready to attract series A funding. In exchange for this growth, the accelerator would take a percentage ownership stake in the start-up. Start-ups may apply to join the accelerator and if successful (determined by the strength of their application and investment prospectus, as vetted by the fund manager after due diligence), may receive up to the equivalent of USD 20,000 in seed investment (and perhaps up to a maximum of 49% ownership) from the Blue Cluster's commercial partners and investors. Applicants may progress directly from the incubator into the accelerator, provided their developed business plan and understanding of their market is robust, though the accelerator may invest in start-ups from outside the incubator programme.

Participant start-ups would then participate in an intensive 6-month programme wherein they receive mentorship from expert entrepreneurs and venture capitalist and impact investors, are offered investor matchmaking and focus on growing their business so that on graduation from the accelerator they are ready for late-seed or series A funding rounds. These accelerator rounds would take place once a year, allowing time to learn from each round and make improvements before the next cohort. Each cohort may contain up to 10 start-up opportunities. Through this intensive growth, the Blue Cluster may reap dividends on their investment and potential ROI from sale of their ownership stake. This approach would constitute a typical high-risk, high-reward venture capital approach for the Blue Cluster as it would offer the opportunity for high earnings from successful start-ups, offset by the likelihood that many of these will not succeed. For this approach to be successful, reforms to the Mozambican start-up ecosystem to clarify the legal framework for venture capital would be necessary to allow for domestically-registered venture capital to make investments.

In order to be able to meet all three of the Blue Cluster's roles, it is imperative that it maintains a separate legal status from its originators and backers (i.e. ProAzul) and recognises the distinct legal structures of its components. The Cluster overall will be able to be a loosely organised network, perhaps adopting a non-profit or membership-based model. The incubator and accelerator will require slightly more sophisticated approaches, with the accelerator in particular requiring a legal structure as an investment fund such that it is able to raise capital and invest in start-ups. This will be a key challenge in the Mozambican context given the previously discussed difficulties in structuring investment funds and raising capital. A deeper legal analysis to assess the Mozambican venture capital ecosystem will be very helpful in understanding some of the barriers facing early-stage capital and how these might be overcome.

Key personnel required will be a CEO who can manage the fund and facilitate high-level partnerships, office and project managers who are able to vet and engage with incubator and accelerator candidates and manage physical premises, and a fund manager who would carry the responsibility of managing investments into start-ups and tracking their performance. Efforts should be made to recruit these individuals from within Mozambique.

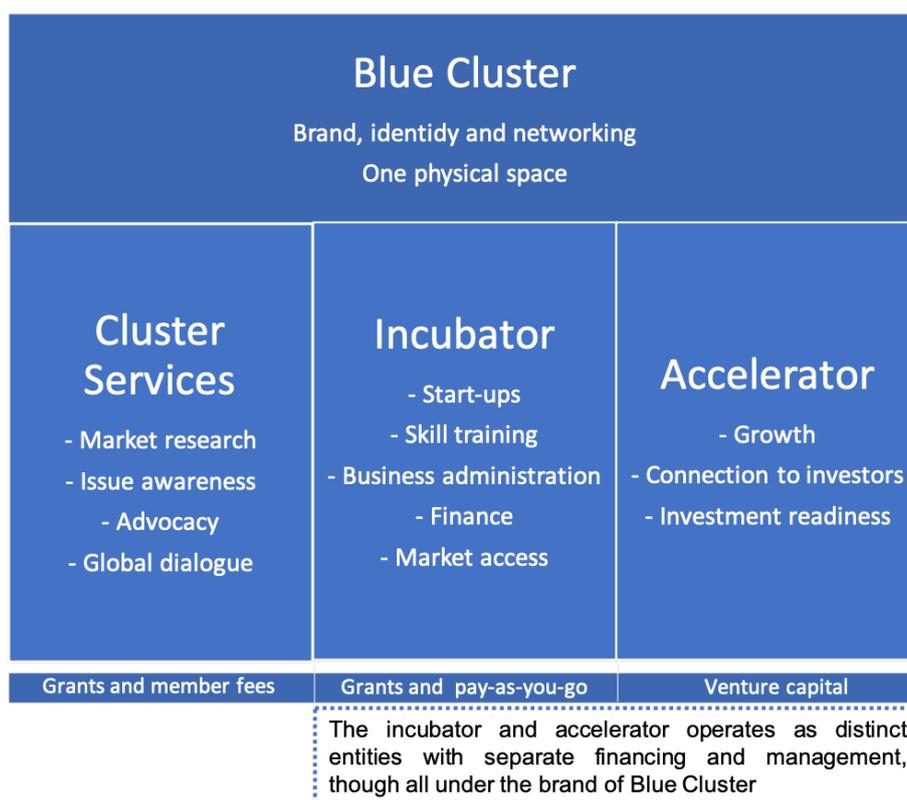


Figure 5 - Overview of Mozambique 'blue cluster' structure

Stakeholders and Capital Providers

A number of stakeholders may engage with the Blue Cluster, whether as capital providers or otherwise – including the UEM and the CTA who may be well-placed to offer in-kind support to the Blue Cluster through training and mentoring opportunities with their own experts in business, finance and the blue economy.

In terms of capital providers and investors, the Blue Cluster would need a source of funds to maintain its operations (including rent and maintenance on physical premises if necessary, salaries for members of staff), a source of funds to service the cluster and the incubator, and sources of investment capital for the accelerator programme.

Grant capital may be derived from existing sources that are working to either develop the blue economy (such as ProAzul, the World Bank and other development partners) or improve Mozambique’s doing business climate and entrepreneurial community (such as MEF, the CTA and development partners).

Investment capital for the accelerator would require a pool of venture capital/impact/angel equity investors willing to provide seed capital to the Blue Cluster to manage in exchange for a reasonably predictable return on investment (typically set out in an investor prospectus). As highlighted above, this would benefit from an analysis of the venture capital ecosystem in Mozambique. Such investors may be an investment fund in their own right, may have a specific sectoral focus to which they wish to earmark their capital (such as aquaculture or technology), or may be entities managing other accelerators looking to diversify their activities (such as Standard Bank or the Iceland Ocean Cluster). These relationships with investors would need to be navigated by the fund manager in order to successfully raise capital. In light of investor expectations, the accelerator would need to be able to select promising start-ups

to participate in the accelerator, have a readily identifiable pipeline of investment opportunities (connectivity with the incubator may provide this to an extent) with a clear investment prospectus and sense of potential earnings, to be vetted by the fund manager. Fortunately, potential project ideas stemming from the incubator phase may progress into the accelerator if they meet these requirements.

Other stakeholders who have developed incubators and accelerators in Mozambique before, notably the Dutch government’s Orange Corners and Standard Bank’s incubator, may be able to provide significant expertise and advice in the development of the blue cluster, and may therefore be helpful parties to consult.

Key Risks

The following table highlights some of the key risks facing the blue incubator project under each risk category and how these may be mitigated by ProAzul in attempting to build a Blue Cluster.

Table 6 - Blue cluster: Key risks and mitigation strategies

CATEGORY	DESCRIPTOR	POTENTIAL MITIGATOR
Physical	Minimal physical risks present	NA
Operational	Potential for project to be undermined if informal sector offers a more appealing pathway to growth than the formal economy	Work with the MEF to offer potential tax benefits/holidays to entrepreneurs participating in the cluster
Market	There may be insufficient entrepreneurs in Mozambique with a specific focus on the blue economy to populate the cluster	Undertake upfront analysis (perhaps with IOC) to scope the potential scale of the entrepreneurial community
Regulatory	Additional red tape or regulatory burden placed on entrepreneurs to establish businesses in Mozambique may deter participation	Work with MEF, World Bank and others to encourage more streamlined doing business climate in Mozambique
Reputational	Investment in Mozambique may remain at low levels due to nervousness over liquidity and creditworthiness post-hidden debts crisis	Identify potential first loss facility or partial credit guarantee opportunities for commercial investors to reduce concerns over creditworthiness

Indicative Timeline and Costings

The development of a Blue Cluster in Mozambique will not happen overnight, however there are initial steps that may be built on a relatively short timeframe and aspects of the Blue Cluster that may come online earlier. The below timeline provides a potential sense of what may be feasible over the next 5 years:

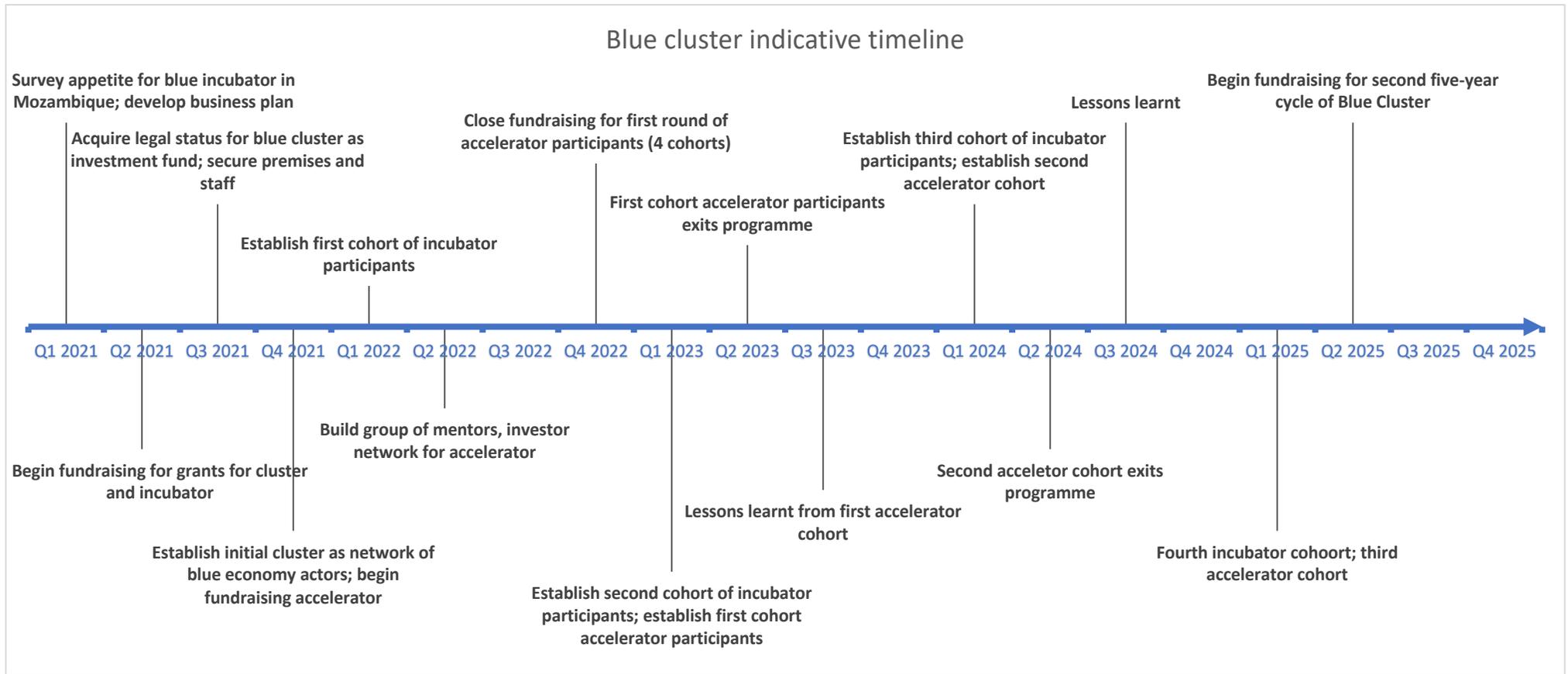


Figure 6 - Blue cluster indicative timeline

Given the early-stage nature of the focus on entrepreneurs, the required scale of investment need not be significant – for a project operating for the first 5 years, the following costs are assumed (based in part on consultation with interviewees and reference to existing blue economy accelerators):

Table 7 - Indicative costings for blue cluster yrs. 1-5

ITEM	YEAR	COST (USD)
Cluster and incubator		
Premises	1-5	200,000
Salaries (based on a minimum initial staffing of 4 persons)	1-5	150,000
Legal costs and administration	1-5	100,000
Research and communications	1-5	50,000
Sub-total grant costs		500,000
Accelerator		
Administration	3-5	400,000
Investments accelerator cohort 1	3	200,000
Investments accelerator cohort 2	4	200,000
Investments accelerator cohort 3	5	200,000
Sub-total investment capital		1,000,000
Sub-total grants and investment capital		1,500,000
Contingency 10%		150,000
Grand total		1,650,000

Note that the investment capital must be able to be disbursed towards start-ups in its entirety – thus should there be an ambition for greater fundraising with investors, it must be possible to back this up with a greater number of start-ups in which to invest. Similarly, it is possible to scale these figures down – though note that smaller sums will generally be perceived as less attractive to investors. A good principle for the first 5-year period may be to start small and identify a comfortable annual level of investment, rather than to over-sell and under-deliver to investors.

Role for Government

In order for the Blue Cluster to get off the ground, it will require significant upfront support and funding by ProAzul to establish an independent entity, with the first year of the Blue Cluster's activities focused primarily on building the structures and recruiting staff to support subsequent fund raising and operations of the incubator and accelerator.

Once the Blue Cluster is established as an independent entity, it may continue to benefit from grant funding from development partners and potentially government sources (including any potential tax benefits afforded to the Blue Cluster, where possible) towards the cluster and the incubator. The commercially-oriented accelerator, however, must remain distinct from any government funding streams and raise capital through other partners and investors, to ensure the Blue Cluster does not contribute to further involvement of the government in Mozambique's private sector.

Next Steps

- ProAzul to survey the appetite for a blue economy incubator, accelerator and cluster
- Develop business plan on the basis of which to begin fundraising for the cluster and incubator

- Engage with MEF and others to clarify legal status around investment funds (McGinnis, 2019) and work to establish the accelerator

Aquaculture

Snapshot overview – expanding a commercial aquaculture sector

Scale: tba

Timeframe: 5-10 years

Instrument(s): A combination of public finance as grants and concessional lending to strengthen policy, institutional & technical capacity, market-based incentives (e.g. tax rebate, land and subsidised loans) and private investment as DFI/PPP and commercial loans and global capital for commercial aquaculture operations.

Return potential: License fees; Domestic and export sales of aquaculture products; tax revenue.

Key risks:

- Climate change impacts on physical assets e.g. cyclones, droughts, floods, water quality;
- Availability of skills and knowledge;
- Business environment: Access to land, energy and transport;
- Markets, commodity prices and consumer preferences;
- Compliance/enforcement of regulations and license conditions;
- Investor confidence in Mozambique, credit worthiness; Covid-19

Next Steps: Government in consultation with industry and development partners to review the enabling environment and map out the sector's needs, potential market, investment opportunities and financing options.

Mechanism

Mozambique strategy for the development of aquaculture (2020)⁶² provides the template and investment needed to develop an aquaculture sector over a 10-year period. The strategy identifies areas of investment including, technical and institutional capacity, productive infrastructure, support infrastructure, incentives, financial services, promotion outreach and communication. The sector consists of small scale subsistence fresh water aquaculture and commercial seaweed and shrimp farming employing respectively 2000 people mostly women in the northern province, and less than 1000 people (FAO 2019)⁶³. Although a key objective of the aquaculture strategy is food security, the development of an export focus commercial aquaculture sector is planned as a means to diversify the blue economy and generate revenue, as well as reduce reliance on capture fisheries for fish production and consumption. Investment to date has been a combination of public investment in small poverty reduction related projects and private sector investment in commercial operations.

The proposed financing mechanism to develop/expand a commercial aquaculture sector and marketing strategies for aquaculture products domestically and for exports could be a combination of public (e.g. Development Banks, Sovereign Wealth Fund use of proceeds) and private finance, (direct foreign investment and or public private partnerships). Investments could focus a range of activities, from scaling up or establishing aquaculture infrastructure for both marine and freshwater products as well as supporting services such as storage facilities and processing plants, the expansion/establishment of an aquaculture R&D capability, institutional capacity to improve the business environment and regulation of the sector and domestic and export market development.

⁶² Government of Mozambique (2020). Strategy for the development of Aquaculture.

⁶³ FAO 2019. http://www.fao.org/fishery/countrysector/naso_mozambique/en.

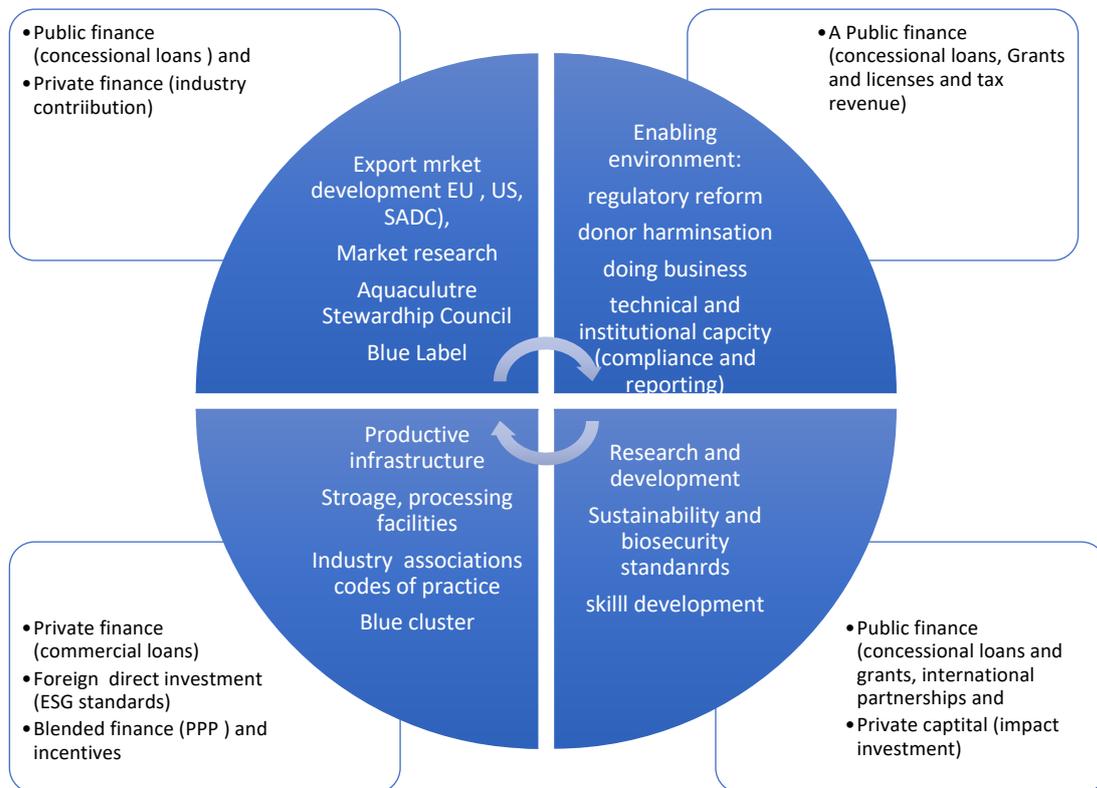


Figure 7 - Overview of aquaculture investment opportunity

A R&D facility (such as the one established in Chokwe through CEPAQ for the development of tilapia farming) could investigate suitable or high value native species for commercialisation (fresh water fish, bivalves and seaweeds, pearls, holothurians), productivity gains, standards for environmental monitoring, sustainability, biosecurity and quality control. Funding for such a facility could be a partnership between development partners, government and private sector and possibly an academic institution for example at the University of Mondlane or an international NGO to build the necessary knowledge and skill capability. A well-functioning facility would attract international investment and could in time be a facility that could be used by other countries in the region, assuming none exists at the moment.

Existing domestic and export markets for aquaculture products are recovering from a collapse of the shrimp aquaculture following a viral infestation. Existing commercial marketing strategies follow different models, for example the shrimp and oyster production of Aquapesca is exported to the EU and the US⁶⁴. Aqua-Spark Chicoa operation markets fish from its own operation and neighbouring small-scale farmers for both domestic and exports with distribution outlets in the region⁶⁵. With increase production and productivity there will be opportunities to increase the export market within the region (SDAC) and globally⁶⁶. However with changes in consumer preferences, it would be desirable to ensure sustainability credentials are met and

⁶³ <https://macauhub.com.mo/2011/04/27/mozambican-company-aquapesca-to-export-shrimp-and-crab-to-the-us-and-china/>.

⁶⁵ Madagascar seaweed farming is run by a private company, which supplies small operators with equipment, seedlings, drying facilities, transport and salaries and technical support and purchase the seaweed for exports (Industrial phycocolloids or Aga Agar).

⁶⁶For example, Aquapesca has invested 56 million in its operation, using a genetically modified shrimp larvae and is aiming to export 1000t by 2020.

third-party accreditation by the Aquaculture Stewardship Council could be considered to secure access to more lucrative European and North American markets.

⇒ **Enabling environment**

The Strategy identifies institutional strengthening and capacity as one pillar aspect of implementation. The sector is currently regulated under the decree for aquaculture (35/2001) which includes the issuing and renewal of licences, conditions of operation as well as fees and fines for non-compliance. There is a need to update the regulatory framework⁶⁷ in particular the licensing regime needs to incorporate sustainability provisions and build the technical and administrative capacity needed to ensure compliance, that the allocation of land/water is consistent with the POEM and PNDD provisions that EIA are conducted for operations above a certain size, and suitable ease of doing business environment (access to land/water, utilities and certainty of regulation and administrative efficiency) is in place to attract local and international private investors, which are under the mandate of different Ministries. This will require coordination across government. This could be facilitated through as much as possible, existing governance arrangements. Development partners could fund technical expertise for streamlining the regulatory framework and policy reforms and developing capacity as a component of budget support or as part of a blue economy aquaculture package.

Stakeholders and Capital Providers

Stakeholders in the commercial aquaculture sector include small scale and private sector aquaculture producers, supply/value chains (e.g. feed/stocks, storage, processors) services providers (including transport, energy, markets, R&D, capacity building) and assets manufacturers (e.g. ponds, cages, processing/storage etc.), and albeit not organised as yet as a sector *per se*. Some players outside government of importance include the CTA which as a representative body of small business at the national and local scale, could be engaged and support of the development of an aquaculture cluster.

The implementation of the aquaculture strategy can be financed through a combination of public and private capital and targeting priorities. Scaling up investment as proposed in the Aquaculture strategy will require a combination of additional finance (mostly private finance) and harmonisation to maximise the use of existing donor funds, the latter managed by MEF donor roundtable redirect funds to the relevant ministries and associated funds.

⇒ **Public capital**

Public capital providers derived from existing sources including development partners' concessional finance and bilateral through existing programmes (e.g. WB SWIOFish, IFAD aquaculture programme, FAO aquaculture project, the GEF delivered directly through government agencies or through NGOs (for example WWF). Those programmes provide seed funding, training, R&D, networks and operational activities to improve the production and productivity of small-scale aquaculture and access to finance and markets for small scale commercial ventures.). Public capital can be used to fund technical and institutional capacity needs to support an emerging commercial aquaculture sector. A source of non-traditional sources of public finance to consider is climate finance (e.g. the Green Climate Fund; bilateral ODA sources), which focuses on the resilience through blue economy diversification thus reducing their vulnerability to climate risks. The Green climate fund also finances readiness projects to assist countries and communities developing large-scale projects, which can in

⁶⁷ The South Africa Aquaculture Development Bill (2018) is a useful example to consider.

turn attract private capital investment. The Sovereign Wealth fund, once established and operational may provide a source of capital for commercial aquaculture ventures. It would be important to ensure blue economy and sustainable aquaculture is included as an investment priority in the Fund Investment Policy (see Sovereign Wealth Fund previous section).

⇒ **Private capital**

Commercial loans through national commercial banks and international private investors are the main source of private capital. Investment capital for large-scale commercial ventures can be either as Foreign Direct Investment (usually facilitated by a national investment bank such as NBI) or public private partnership arrangements. Commercial banks can play a key role in the direction of national development as the repository of national investment capital through their investment policies and lending practices⁶⁸. Strategies to improve access to credit to eligible aquaculture projects may require a combination of a changing the mindset of banks towards the provision of better targeted financial products in terms of affordability and sustainability and greater literacy and accountability on the part of recipients. Foreign Direct Investment is the main source of private capital for financing large private or PPP infrastructure and extractive industries projects, largely because they have good risk return characteristics, unlike most blue economy projects. However, international impact investors have also been interested in aquaculture ventures to address issues of food security and overfishing (e.g. Aqua-spark), There has been a global decline of FDI in recent years which is compounded by the impacts of COVID19. Efforts to improve the business environment will be critical to attract new capital to sustainable aquaculture projects. It will require a more favourable business environment and regulatory certainty⁶⁹. However, some positive steps have been taken to date - the regulatory framework in Mozambique (NORDEA, 2020) includes a PPP law (2013) and an Investment law, which regulate PPP and FDI and State owned enterprises have to comply with new governance and transparency regulations, which are essential to generate investor confidence. The government has released an investment guide for agri-business and light manufacturing sectors, which provides useful guidance for prospective investors (APIEX, 2018).

⇒ **Blended finance**

There is an opportunity to consider blended finance to leverage private capital for commercial aquaculture, given the type of aquaculture model operating in Mozambique combining small and large private operators to build productive capacity for domestic and export markets, and at the same time provide employment for local communities. The R&D facility is an example where blended finance would be most appropriate. Similarly training and capacity building of local farmers, with the support of local NGOs and government agencies, updating the regulatory framework, financing incentives, improving the effectiveness and transparency of government processes, compliance and enforcement capacity and developing marketing strategies could be financed by public finance hence de-risking private capital investment and building investor confidence.

Key Risks

Attracting new investment in aquaculture faces several challenges. First there is an overall global decline in FDI, including to Mozambique due in part to Covid-19 (UNCTAD 2020), second most of the foreign investment in Mozambique is in energy, transport and ports and now LNG and third despite a legal framework and policy framework, aquaculture carry higher

⁶⁸ See UNEP Finance initiative Principles for responsible banking at <https://www.unepfi.org/wordpress/wp-content/uploads/2019/09/PRB-Guidance-Documents-Final-19092019.pdf>.

⁶⁹ Mozambique ranks 138 out of 190 countries on the World Bank Doing business, compared to its neighbours such as South Africa (84) and Kenya (56).

operational and reputational risks, as was demonstrated with the collapse of the Shrimp aquaculture sector in due to disease and the impact of the hidden debt crisis.

Table 8 - Aquaculture opportunity key risks and mitigation opportunities

CATEGORY	DESCRIPTOR	POTENTIAL MITIGATOR
Physical	Physical assets may be vulnerable to water shortage, high temperature, Tropical storms/ flooding, and coastal erosion.	Siting of aquaculture ventures in line with POEM and PNDD and taking into account vulnerable areas to flood risk
Operational	A lack of technical skills, R&D, biosecurity; Commercialisation, Transport to market, and availability of energy, storage and processing for domestic and export markets	A strong focus for sustainability of operation, training and skill development both husbandry will be essential to scale up and federate a largely dispersed sector. Ensure subsidised Solar energy project is available to aquaculture ventures.
Markets	Impacts of Covid-19 on financial flows Commodity prices and consumer preferences	A market analysis would help target high value species for export markets to consider certification by the Aquaculture stewardship council could be desirable
Regulatory	The regulatory environment needs updating A difficult business environment for private capital investment	Allocate public finance to review the aquaculture and EIS legislations, ease of doing business reform and strengthen technical and institutional capacity for enforcement and compliance
Reputational	Investment in Mozambique remain low due to nervousness over liquidity and creditworthiness	Restoration of confidence through governance reforms, and identification of partial credit guarantee opportunities to reduce concerns over credit worthiness

Indicative Timeline and Costings

The implementation of the Aquaculture Strategy is already costed which the development of a commercial/private sector driven aquaculture sector is part of. It can be used as a guide to investment needed for a up scaling a commercial aquaculture sector (see table below) and the issue is to evaluate how realistic the size of investment is, possible sources of finance and what requirements should be met to attract such finance.

Table 9 - Aquaculture strategy indicative costings, possible sources of finance and financing options

INVESTMENT CATEGORY	ESTIMATED AMOUNT (000 METICAIS)	POSSIBLE SOURCE OF FINANCE	INSTRUMENT
Technical and institutional capacity	4,550,025.00	Development banks, UN technical agencies and international academic partners, Government revenue, private sector	Combination of grants/ Concessional loans, government revenue Private investment
Productive infrastructure	32,703,250.00	Development banks, commercial banks Private sector investment	Grants (pag. 45 to 68) /Commercial loans/incentives Public private partnerships
Supporting Infrastructure	585,500.00	Development Banks, Commercial Banks, Private sector investment	Grants (see funding) Concessional loans Commercial loans/incentives Public private partnership
Fiscal incentives	1,300,00.00	Government/ Development banks/Commercial banks/international investors?	Government revenue/international organisations
Financial services	16,842,700.00	Government/Development banks, Commercial banks/	Concessional loans,
Promotion, dissemination and communication	154,500.00	Government	Devolved fund/grants
Total	56,135,975.00		

Role for Government

MIMAIP and ProAzul and IDEPA, which have the overall mandate for aquaculture on behalf of the government, should convene a working group bringing the relevant government institutions as well as representation from the sector to map of the various components to consider to expand a commercial aquaculture sector, including actors and needs, current financing, key risks, potential returns as a necessary first step to identify synergies and gaps, but also to address barriers some of which are the responsibility of government (such as regulatory reform or ease of doing business, governance). This initial mapping work could be facilitated by MIMAIP/ProAzul in collaboration with the MEF with support from a development partner such as the WB. Regarding financing options, unlike public finance to which the government is well versed in, attracting private finance to fill the financing gap, the types of instruments and requirements that could be used requires expertise not necessarily readily available and may take time to be properly scoped. A critical first step should be to develop strong scalable proposals projects, which could demonstrate approaches and results and be attractive to investors both public and private. The strategy has a timeline of 10 years, which is a reasonable timeframe.

Next Steps

- Government in consultation with industry and development partners to review the enabling environment;

- ProAzul to map out the aquaculture sector’s needs, potential market, investment opportunities and financing options.
-

Coastal and Marine Conservation and Climate Resilience

Snapshot overview – Coastal natural infrastructure for a resilient and sustainable blue economy

Scale: US \$150-200 million¹ (estimated).

Timeframe horizon: 10 years (2030)

Instrument (s): A combination public finance (grants concessional lending, market-based instruments, credit schemes debt conversion, sovereign wealth fund); and private finance (Conservation Trust Funds corporate CSRs); and insurance (parametric insurance)

Return potential: Initially low, mostly as revenue from taxes and fees (tourism, fisheries); over time reduced expenditure of disaster recovery (% of GDP) from climate risks; sale of tourism products, export earnings, cash flows.

Key risks:

- Knowledge infrastructure and capabilities (eg credit scheme, parametric insurance)
- Coordination across government and partnerships;
- Fiscal space, creditor willingness (debt conversion)
- Possible use conflicts, and Stakeholder support; High costs of management (compliance, surveillance)
- Reputational and security issues (eg tourism)

Next steps: MIMAIP/ProAzul to facilitate a dialogue with government and partners on a strategic pipeline of projects and engage with MEF on mapping financing options and requirements

Mechanism

66% of Mozambique rural population live and work along its 2700kms coastline and is highly dependent on ocean resources for their livelihoods. Mozambique is also highly vulnerable to climate change impacts with significant impacts on the country’s GDP and wellbeing. Financing the protection and restoration of critical climate habitats and their ecosystem services, including through MPA networks (Simard, Laffoley & Baxter, 2016) provides a cost-effective strategy to maintain coastlines, ocean health and resources and dependent livelihoods and economic activities, thus contributing to global commitments to climate adaptation, mitigation, marine conservation and sustainable development. It also offers opportunity for local stewardship, and new avenues for leveraging private investment to generate income, jobs and entrepreneurship.

Financing coastal natural infrastructure requires multipronged approach, combining public and private investment and a range of financing mechanisms. Although traditionally, most of the investment for the protection and restoration of coastal habitats has been through public finance from a range of international donors including ODA, multilateral banks and philanthropic organisations, and from raising revenue for blue economy sectors, there are also opportunities to attract private investment through blended finance (a combination of public and private finance) and public private partnerships in resilient and sustainable economic activities. Innovative financing mechanisms such as carbon credit schemes, Offsets, debt conversion and parametric insurance can also be considered, provided the enabling environment is in place (see previous section on financial mechanisms). Below are proposed

mechanisms and sources of finance the government may consider supporting a coastal natural infrastructure.

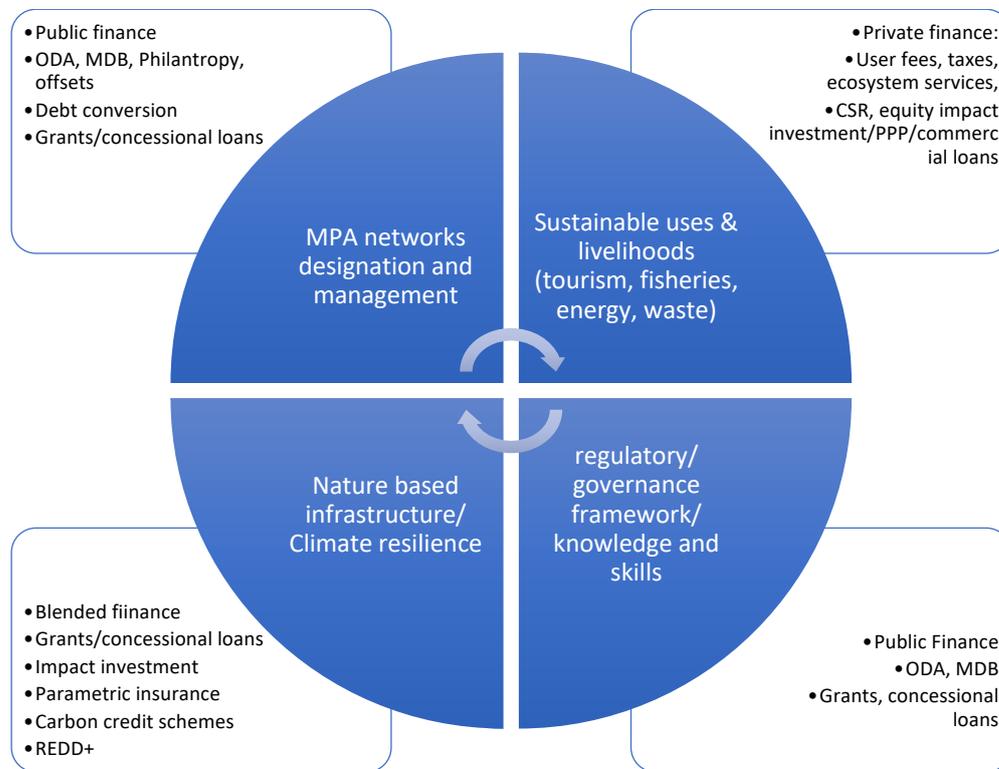


Figure 8 - Coastal and marine conservation overview

⇒ **Investment in the enabling environment**

This would ensure the legal, policy institutional and technical capacity of government are in place to support the establishment and maintenance of a coastal natural infrastructure for climate adaptation and mitigation and sustainable livelihoods. Mozambique has in place much of the legal and policy frameworks (Sea Policy, POEM/PNDT, NCCAMS). It may require addressing some gaps such as legal status of LMMAs, ease of doing business reforms, setting up institutional arrangements, undertaking a climate vulnerability assessment, building PEOM compliance capacity, or developing the local capacity to manage LMMAs and piloting sustainable coastal livelihoods options. Importantly, given the complex web of government responsibility in the coastal zone, effective institutional coordination and transparent and accountable processes across government and consultation with local communities and private sector will be essential. (see section on needs). MIMAIP and ProAzul through the Sea Council, needs to actively engage with relevant ministries and agencies, such as MTA, ANAC, MADER, FNDS, MEF and technical providers such as the University of Mondlane and local NGOs, to ensure public financial flows to coastal natural infrastructure from public sources such ODA (e.g. Norway, Sweden the US, France), MDBs (e.g. the World Bank, the EU, AfDB), philanthropic organisations and regional organisations are targeted and do not duplicating efforts. MIMAIP and ProAzul are already actively collaborating with development partners and implementing “blue economy” activities and collaborating with conservation NGOs operating in Mozambique such as BIOFUND, WWF, RARE, WCS and IUCN which provide both technical expertise and are also funded to implement capacity building in marine park management, sustainable livelihoods, governance and scientific studies. Regional

organisations such as UNEP Nairobi Convention, UNECA⁷⁰ and SADC can also be called upon for expertise and financial support. An important consideration for MIMAIP/ProAzul will be to ensure a centralised repository of data/information is available to house and manage data and information generated by international experts and partners. MIMAIP/ProAzul may also consider formalising an NGO Forum to facilitate exchanges and harmonise investment.

⇒ ***Linking various sources of public finance***

This would include climate finance, development finance and conservation finance to maximise public investment and impacts. It would require the development a pipeline of collaborative multi-sectoral nature-based resilience projects across government, marine conservation NGOs, development partners, and the private sector. There is a role for MIMAIP/ProAzul to facilitate such collaborations. ProAzul or MEF could also consider GCF accreditation⁷¹ to facilitate GCF finance and investment in coastal zone including conservation area management and ecosystem-based adaptation and mitigation. There are also opportunities to build on and scale up existing initiatives and investments such as the GCF funded Blue Action Fund (Germany, Norway, Sweden, France) implemented in Mozambique, the GEF funded WB MozBio programme, the GEF funded University of Mondlane/government sea grass restoration project⁷² in the Maputo region to name a few.

ProAzul with MEF could consider developing a directory of available public investment opportunities and current and future pipeline projects and activities to help effective targeting of public finance, and as a means to leverage private finance. Finally the Government participation in International fora such as the SDG 14 conference and the CBD and the UNFCCC provide opportunities to engage with international partners and investors interested in aligning their activities and investments with the SDGs and the Paris Agreement.

⇒ ***Generating domestic revenue through market-based instruments***

The maintenance of coastal natural infrastructure for climate resilience and mitigation and sustainable blue economy activities can be achieved by increasing and **earmarking** revenue from **taxes, fees, licences and concessions**^{73/74} from sustainable resilient blue economy activities benefiting or impacting on coastal natural infrastructure such as nature-based tourism⁷⁵, fisheries, aquaculture, oil and gas, or ports. Such revenue is at present collected by sector-based ministries/funds, including MIMAIP and ProAzul and administered through the Ministry of Economy and Finance according to a set formula. MIMAIP should work with MEF to review those formulae to allocate a greater return to the establishment and management of a coastal natural infrastructure to meet policy objectives of the Sea Policy and the National Climate Change Adaptation and Mitigation Strategy as well as Mozambique global commitments.

⇒ ***Exploring setting up carbon credit schemes***

Carbon credits are a form of payment for ecosystem service in this case the carbon stored in the sediments of mangroves and sea grasses which can be traded in either through voluntary or regulatory carbon markets (Herr et al, 2015). With the newly approved Mangrove Management Strategy (2020) and the National Biodiversity Offset System (2020), there is the

⁷⁰ UNECA has expressed interest in supporting Mozambique on blue economy and innovative finance (pers Comm).

⁷¹ The AfDB, World Bank and IUCN are GCF accredited entities and FNDS is seeking accreditation.

⁷² See at <https://www.unenvironment.org/news-and-stories/story/saving-mozambiques-seagrass> .

⁷³ This is the reference Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobin- de la Puente, J. 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

⁷⁴ Under the Government scheme for nature based tourism in conservation, areas, the duties of attached to a concession include management services and support for local communities (GoM 2018).

⁷⁵ According to conservation law, local communities are entitled to a share in the revenue from conservation areas; this is currently stipulated as 20% of revenues allocated to ANAC (GoM. 2018. Nature Based tourism.

framework in place to establish such schemes to finance restoration of degraded sea grass and mangrove habitats of significance for coastal resilience and sustainable livelihoods. These mechanisms require technical expertise to evaluate carbon storage capacity, and to set up the schemes. Although Carbon markets are affected by global pricing, they provide a source of revenue to local populations engaged in wetlands restoration and sustainable activities (see previous section on carbon credits). IUCN is ProAzul could explore with FNDS options to **incorporate coastal wetlands in REED+ initiatives** to finance coastal natural infrastructure management and restoration activities. Finally, initiatives such as **sea grass farming** could complement restoration initiatives and the possibility of returns in the short term (e.g. liquid fertiliser) or long term (e.g. pharmaceutical and food industry).

⇒ ***Exploring a debt conversion mechanism for marine conservation, climate resilience and sustainable livelihoods.***

A debt conversion is an agreement between creditor (in the case of Mozambique the Club of Paris) and the debt owner to convert part of a country's debt into a local currency fund to be managed by independent local entity to achieve agreed financial and sustainability objectives (see debt conversion in previous section). Critical to debt conversion are investor confidence in the country's ability to make repayments and deliver on the outcomes. Although debt conversion does not increase debt level, it still requires sufficient fiscal space to be implemented. In Mozambique, debt related transactions are the responsibility of the Ministry of Economy and Finance and the Central Bank of Mozambique. Agreement from the Club of Paris, financial expertise and time would be essential to set up a debt conversion mechanism. Institutional arrangements to consider for the use of the proceeds could be to assess whether ProAzul, could as is, or with legal amendments provide the necessary mechanism for managing a local funds in a transparent and accountable manner. ProAzul could articulating what the objectives of the use of the proceeds of a possible debt conversion could be in consultation with other relevant partners and initiate discussion with the Ministry of Economy and Finance and the Central Bank on the possibility of a debt conversion and in due course, getting some indication from the Club of Paris of their willingness to engage in such a transaction and under which conditions. Independent expert financial advice on setting up the transaction financial architecture would be essential, keeping in mind that the transactions costs of setting up a debt conversion mechanism are high and so the size of the debt conversion is important. A minimum of US\$ 50million for a debt conversion should be considered assuming there is sufficient fiscal space. The Ministry of Economy and Finance and ProAzul could approach organisations such as NatureVest for advice.

⇒ ***Exploring parametric insurance for restoring natural infrastructure and sustainable livelihoods***

Parametric insurance is a form of insurance where pay-out triggers immediately when a certain threshold or trigger is activated, for example wind speed or amount of rainfall. There is an opportunity for Mozambique to consider parametric insurance against climate events such as floods and cyclones and make the case for coastal natural infrastructure as a good candidate for receiving insurance funds for mangrove repair and restoration, but also for the repair of coral reefs in the north of the country and the parabolic dune systems of southern Mozambique.

Mozambique signed a MoU with the African Union's African Risk Capacity⁷⁶ (ARC), a specialised agency of the African Union working with its commercial affiliate ARC Insurance Company Ltd. that develops parametric insurance against drought floods and tropical cyclones for African states. The ARC programme both helps identify protective structures in country as well as mechanisms (such as CTFs) to develop a policy with ARC Insurance

⁷⁶ <https://www.africanriskcapacity.org/about/how-arc-works/>.

Company Ltd. to pay the insurance premium and manage disbursed funds. A key challenge in applying parametric insurance is the need for good data on the prevalence, nature and frequency and impacts of the natural disasters, information on tropical cyclones or flooding behaviour (which determines the parameter and the trigger) as well as the vulnerability of the coastal communities impacted and the likely costs of a disaster (which determine the premium and maximum pay-out). Another consideration is the ability of stakeholders to reliably pay the insurance premium, which in the case of Mozambique may be challenged internationally in light of its low credit rating. Identifying an international partner to help facilitate the establishment of a parametric insurance policy despite these challenges will be key to success. A potential candidate here could be the Ocean Risk and Resilience Recovery Alliance⁷⁷ (ORRRA), a Canadian-funded international alliance comprised of NGOs, researchers and Axa, a multinational insurance company, which aims to build understanding of ocean risk and replicate successes with parametric insurance and other innovative financing models in the Caribbean elsewhere in the world. MIMAIP and Pro Azul may initiate early conversation with ARC and potential organisations such as ORRAA and experts on the feasibility and requirements for establishing a parametric insurance scheme.

⇒ ***Private sector investment for sustainable coastal activities through Foreign Direct Investment, equity investment and PPPs***

Private investment in nature-based tourism in conservation areas can generate return on investment, government revenue as well as achieving marine conservation and employment opportunities for local populations. The 2018 Tourism Nature Based Policy administered by The Ministry of Tourism and Culture and ANAC, provides guidance on the legal requirements for tourism development in designated conservation areas, such as co-management and community development conditions. PPP are an avenue for the government to leverage co – management and technical expertise, build local capacity and livelihoods and generate revenue and export earnings. In 2018, the Government signed agreements with several foundations (e.g. Carr Foundation, Peace Parks Foundation and African Parks) to finance the co-management of conservation areas and provide financial support for local sustainable tourism ventures. The Millennium BIM Bank and MITADER also provided a line of credit of up to 50 million for local ecotourism businesses⁷⁸. Other avenues for accessing local capital are available for example the MEF and the UN Capital Development Fund which funds the local climate adaptive living facility. Since conservation areas only represent 2 % of the coastal waters, it will be important to ensure nature-based tourism ventures meet the broader management regime of the coastal zone under the Sea Policy and the POEM, a responsibility of MIMAIP and ProAzul. Tourism development in and outside conservation areas needs to meet sustainable investment criteria, a task ANAC and INATUR ProAzul could coordinate in consultation with Pro Azul and tourism stakeholders and expert advice from international partners.

⇒ ***Private finance through CSRs and the Oil and Gas Sovereign Wealth Fund.***

CSRs are grants or concessional lending provided by private companies to support local activities (for example Aqua-Spark or Vale). ProAzul could engage with private companies to finance coastal natural infrastructure activities which could contribute to protecting their assets as well as meet their CSR policy objectives. The oil Sovereign Wealth Fund could be a mechanism to invest in resilient and sustainable blue activities. ProAzul and MEF could initiate conversations with Vale and other interested international companies for possible collaborations on coastal resilience and investigate opportunities a sovereign wealth Fund could offer for financing climate resilience including coastal natural infrastructure, as part of a sustainable blue economy agenda.

⁷⁷ <https://www.oceanriskalliance.org/>.

⁷⁸ <https://ind.millenniumbcp.pt/en/Institucional/sustentabilidade/Pages/2018/Millennium-bim-e-MITADER.aspx>.

Stakeholders and Capital Providers

⇒ *Development partners*

Most of the investment in conservation and climate change has been traditionally through public finance. Mozambique international donors supporting conservation sustainable livelihoods and climate related activities include ODA countries such as Norway, Sweden, the UK, the US and France, MDBs such as the WB, AfDB, EU, the FAO, international agencies such as the GEF and the GCF philanthropic organisations. They provide budget support, expert technical and financial advice as well as a range of conservation and development programmes some of which focused on nature based solutions and climate resilience (e.g. the EU CGGA+), although there is scope to increase public investment in conservation and climate resilience including through the GCF, building on the experience of the Blue Action Fund, and explore opportunities for blended finance solutions with the Ministry of Finance.

⇒ *Non-government organisations*

Non government organisations range from technical NGOs such as WWF, IUCN, WCS, RARE, conservation trust funds such as BIOFUND and “financial brokers and intermediaries” such as Ocean Risk Resilience Action Alliance (ORRAA) or NatureVest. “Technical NGOs play a critical role in supporting government policy making, providing technical advice and capacity building and provide a conduit for international finance from private foundations and international donors (e.g. the Blue Action Fund). NGOs are an important partner to navigate the international investment community and get financial advice on structures innovative transactions such as carbon credit schemes, parametric insurance and debt conversion.

⇒ *Private investors*

Private investment as DFI has declined in part because of Mozambique low credit rating and the impacts of the debt crisis and a difficult business environment. Efforts to generate funding from private sources for conservation have been so far limited. Attracting private finance will require public investment in the enabling environment (see section above) to give private investors confidence in investing in Mozambique. Attracting those investors requires demonstrating a return on investment as well as sustainability outcomes and transparent and accountable processes. Investing in nature-based infrastructure may appeal to those investors keen to align their portfolio with climate and sustainable development goals. Local partners such as the CTA play an important role in connecting local private sector across the country and advocating in government fora.

Risks

Table 10 - Coastal natural infrastructure: key risks and mitigation strategies

CATEGORY	DESCRIPTOR	POTENTIAL MITIGATOR
Physical	Climate risks (SLR, flooding cyclones) and ocean acidification Habitat destruction (unregulated coastal development), overexploitation of resources, salt intrusion, water quality	
Operational	Availability of data on ES values (charging users), priority areas, Skill shortage and capacity (MPA/destination management, coastal managers, business& financial skills) Transport infrastructure (e.g. tourism) Costs of doing business?	Studies on ecosystem valuation; Visitor willingness to pay; Enhance GIS/inventory capability, CO2 carbon storage data Training of local private sector Access third party specialist skills (e.g. NGOS, financial experts) Exchanges, financial experts and brokers
Markets	Mozambique as Nature based tourism destination Donors and Investors' and insurers' interest Voluntary Carbon markets	Global market surveys, fairs consumer preferences Profiling ESG investors
Regulatory	Institutional coordination Local delegation Statutory MPAs Coastal/land use regulations, compliance and enforcement Environment for Private sector investment Debt status, Fiscal space and governance arrangements Insufficient Budget allocation	
Reputational	Security of visitors? Mozambique credit worthiness, ease of doing business	Restore confidence, regulatory reforms, partial guarantees,



Indicative Timeline and Costings

Table 11 - Coastal and marine conservation indicative costings, sources of finance and potential mechanisms

CATEGORY	AMOUNT (US\$ MILLION)	SOURCES OF FUNDING	POSSIBLE INSTRUMENTS
MPA networks designation and management	tbd	Public (ODA, MDBs the GEF) and private (CSR, Foundations)	Grants, conservation Trusts, revolving funds Debt conversion Market based mechanisms
Nature based infrastructure/climate resilience (restoration/protection) and hybrids solutions	tbd	Public finance (ODA, GEF, GCF) Blue Action Fund) philanthropy, BIOFUND	Grants, Conservation trusts, debt conversion CSR, Carbon credit schemes, REED+ Parametric insurance
Sustainable uses (nature based tourism) & livelihoods	tbd	Blended finance Public (MDBs, ODA) Private (DFI/PPP)	Seed funding (MSMEs) Commercial loans
Regulatory/governance framework/knowledge and skills	tbd	Public finance (MDBs, ODA, Philanthropy)	

Role of the Government

This is an integrated approach to financing conservation and coastal resilience. As such it combines both public and private finance and a suite of financial mechanisms and require appropriate regulatory and governance arrangements to be effective and successful. Responsibility for activities in the coastal zone is shared across government in different ministries and agencies, each with a separate but complementary mandate. MIMAIP has however the overarching responsibility for the coastal zone and blue economy and as such must ensure an harmonised approach across government in the implementation of the Sea Policy and related government policy.

ProAzul as the programme and fund manager for the Sea Policy implementation and blue economy development ought to facilitate dialogue across government to ensure both public and private investment in the coastal zone meet government's conservation, sustainable development and climate change objectives. ProAzul could facilitate the development of a pipeline of collaborative projects with partners and work closely with MEF to secure public and private financial flows, and seek expert financial advice on the design and feasibility of proposed financing mechanisms and their requirements in support of the establishment and maintenance of a coastal natural infrastructure, which ultimately contribute to reducing the impacts of extreme events on GDP and at the same time create opportunities for an inclusive blue economy.

Next steps

- MIMAIP/ProAzul to facilitate a dialogue with government and partners on a strategic pipeline of projects
- MIMAP/ProAzul to engage with MEF on mapping financing options and requirements

Building a Blue Economy Sustainable Economic Zone

Snapshot overview – blue economy sustainable economic zone

Description: Development of a virtual sustainable economic zone combining the sustainability-linked opportunities of a sustainable special economic zone with the scaling opportunities of a virtual economic zone.

Scale: Public capital investment in development of new sustainable virtual economic zone; scale to be developed

Timeframe: 3 years to establishment; potentially indefinite operation

Instrument(s): Public capital investment – tax incentives and reduction or elimination of customs fees, import duties and income tax

Return potential: NA

Key risks:

- Standards for sustainability may be too high for enterprise participation in VSEZ
- No progress on private sector reforms
- Limited engagement from MEF/Investment Council/APIEX to collaborate to develop innovative zone

Next steps: ProAzul to conduct a scoping assessment of the potential benefits of a special economic zone dedicated to the blue economy, draft a concept of what this may look like and develop eligibility criteria for participation based on sustainability standards

Mechanism

Building a vibrant blue economy MSME requires a multi-pronged approach, on the one hand through public investments in policy and regulatory reforms to improve the business environment and in particular ease of doing business, simplifying legislation for FDI investment and access to information and streamlining institutional arrangements (see section on needs), and on the other hand the professionalization of blue economy MSMEs through business registration, training, R&D, adoption of best practice standards and expanding the financial products and services available to MSME stakeholders.

In addition to the governance changes required to improve the doing business environment (see relevant section on needs), there are additional opportunities for investment of different capital types to enable the development of a blue economy-focused private sector, led by MSME development. While these opportunities are myriad (and some are briefly discussed below), this section focuses on one more tangible idea, the creation of a 'virtual sustainable economic zone' for Mozambique's blue economy.

In order to facilitate the greater development of MSMEs for the blue economy and in complement to reforms to the business environment for Mozambique, it may be possible for MIMAIP/ProAzul to work with MEF and others in developing a special economic zone for the blue economy, in order to stimulate development of new enterprise and trade. While it would be possible to create a geographically-fixed VSEZ, e.g. along Mozambique's central coast where many blue economy sectors converge, given that Mozambique's blue economy is highly decentralised across the entire coast, this SEZ could take the form of a '**virtual sustainable economic zone**' (VSEZ), with a focus on blue economy MSMEs and commercial operators rewarded for adopting specific sustainable business practices regardless of their geographic location.

This VSEZ would operate similarly to a ‘free enterprise zone’ (alternatively referred to as a special enterprise zone [SEZ]), building on Mozambique’s precedent in this area and the government’s familiarity with the concept⁷⁹ (working through APIEX, see below), and would similarly work towards established enterprise zone objectives (e.g. manufacture of goods, rendering of services, free trade) with the key differences being that the VSEZ would be geared towards cultivating private sector activity for a *sustainable* economy and that it would be distributed throughout the country, based on membership defined by specific sustainability criteria rather than geographic proximity. The VSEZ would be based on activities for the sustainable blue economy (such as demonstrable sustainable tourism development, aquaculture or sustainable fisheries) with a focus on both environmental and social sustainability, fostering new enterprises that receive tax and/or customs benefits (as defined in the Ministerial Diploma 202/2010) and a reduction in bureaucracy associated with business, providing a clear incentive towards entrepreneurs to explore the blue economy as a highly competitive and viable avenue for business growth. It would also afford opportunities for enterprises to communicate and collaborate in such a way that offers the potential for cost reductions and new business opportunities, predicted on available and dedicated communications infrastructure.

There is precedent for the establishment of a special economic zone for sustainability through the Sustainable Special Economic Zones (SSEZ) Africa Partnership⁸⁰, which aims to create hubs for low-carbon, sustainable and inclusive development by curating the tenants that will maximise economic benefits. Similarly, there is also precedent for considering virtual economic zones. India has contemplated the establishment of a virtual special economic zone but ultimately decided against its creation due to concerns it would undermine the existence of established SEZs⁸¹ (i.e. it had no differentiating mandate from existing SEZs). Finally, promotion of SMEs within existing traditional SEZ’s has also been tabled in Thailand, Myanmar, Gabon and other emerging markets, providing a basis for Mozambique to take these different facets of what an SEZ can do and apply it to a blue economy context. Thus, there may be an opportunity to combine the benefits of a virtual economic zone with a special focus on sustainability and MSMEs to develop a new kind of economic zone for Mozambique.

The key initial steps would be to define the parameters for membership in the zone (i.e. what benchmarks of sustainability are considered necessary conditions to participate), and scoping the eligibility of different commercial enterprises to populate the VSEZ in its initial phases.

Based on an initial period of market research, ProAzul may approach MEF to establish the VSEZ and provide the tax and customs-based incentives to participate, with ProAzul tasked with the management of the zone and development over time, with clear targets for economic growth, inclusivity and impact (linked, for example, to relevant SDG indicators). Once approved, the key consideration for the virtual zone, alongside managing its membership, will be the digital infrastructure (both in terms of access to information and communication technology as well as remote electronic management of the zone, its participants and the criteria for their participation) required to comply with the existing regulation on Special Economic Zones, notably with respect to customs checks. While there will be costs associated with developing a virtual approach to an SEZ, there are associated opportunities for research and development of IT solutions for a virtual zone, and Mozambique may look to the drafted proposals put forward by India for the development of a virtual SEZ to guide this process.

In building the VSEZ and targeting the longer-term development of a vibrant blue economy private sector, this approach also complements and provides next steps beyond the Blue Cluster mentioned previously.

⁷⁹ Based in particular on the legal framework for SEZs set out in the then-Ministry of Finance’s 2010 Ministerial Diploma 202/2010.

⁸⁰ <https://p4gpartnerships.org/partnership/sustainable-special-economic-zones> .

⁸¹ https://www.business-standard.com/article/economy-policy/no-plans-yet-on-virtual-sez-concept-104092101028_1.html.

Stakeholders

While the VSEZ and the development of a blue economy private sector in Mozambique will require new entrepreneurs and enterprises to emerge over time, for the zone in particular to materialise in the first instance will require a cohort of existing enterprises to participate and demonstrate ‘proof of concept’ that the benefits to being part of the zone are worthwhile in delivering impact and economic growth. A scoping exercise to understand what, if any, enterprises operating in Mozambique may already form part of the zone will be a helpful first undertaking. There may be an opportunity here to collaborate with the CTA to understand the profiles of different companies and their footprints in the blue economy.

Potential stakeholders in a VSEZ would therefore include any businesses working within the sustainable blue economy within Mozambique seeking to export products – notably fisheries and aquaculture-related resources, which would benefit the most from relaxation of duties and customs checks associated with an economic zone. Similarly, through the help of APIEX, there would be opportunities to identify and attract any international businesses interested in establishing blue economy-related businesses (for example on bioprospecting) in Mozambique through the VSEZ. A key private sector partner here may be the CTA in building up membership in the VSEZ and communicating between the public and private sectors.

Role of Government

Development of a VSEZ for Mozambique will require a high degree of cooperation between MEF and ProAzul, as well as a clear community of potential participants from the outset, with support from development partners to cultivate additional VSEZ members over time. While there are upfront costs associated with the establishment of a special economic zone like the VSEZ, the overall capital requirements are relatively low as the approach is predicated on cultivating innovation and growth, rather than specific investments.

1. ProAzul

ProAzul has a role to play in developing a blue economy private sector in Mozambique, both in its role as the public sector thought leader on what constitutes the blue economy as well as in its ability to mobilise and disburse capital towards blue economy projects. In light of this, it has a role to play in providing expertise on the blue economy and sustainability for the VSEZ, including setting the criteria and standards for sustainability that it will follow.

2. MEF

The Ministry of Economics and Finance has a critical public sector role to play in developing the private sector in general, and therefore must be part of discussions on developing a VSEZ for the blue economy in particular. Any opportunities to work through domestic revenue instruments to build up an entrepreneurial blue economy will require heavy involvement from MEF. It is likely that for their successful engagement, they will require upfront clarity on the potential scope of a virtual economic zone, and predicted impacts on tax revenue, growth and diversification of the economy in such a way that aligns with Mozambique’s wider development objectives. It will be incumbent upon ProAzul to deliver this information in the first instance.

3. APIEX

Mozambique’s agency for the promotion of investment and exports (AXIEDA) is responsible for attracting FDI and the establishment of exporting companies based in Mozambique. Their mandate is to facilitate interactions between investors, exporters and the public sector to catalyse investment in Mozambique, and as such have a role to play in supporting the investment into Mozambique’s existing special economic zones. Thus, their involvement in the development of a VSEZ would be essential to develop relationships with sustainability-oriented investors.

4. Development partners

Development partners (such as the World Bank, IFAD, AfDB and others) will have a vital role to play in the grant financing component of building a blue economy private sector, particularly in leveraging the activities and experiences from existing programmes supporting entrepreneurialism, technical assistance towards MSMEs, vocational and skills training as well as research and development. In so doing, they provide the enabling conditions for entrepreneurs and enterprises to emerge and participate in the VSEZ over time.

The following table highlights some of the key risks facing the development of a blue economy private sector under each risk category and how these may be mitigated:

Table 12 - Virtual Sustainable Economic Zone: key risks and mitigation strategies

CATEGORY	DESCRIPTOR	POTENTIAL MITIGATOR
Physical	Any physical premises that form part of the VSEZ or broader blue economy private sector along the coast may be susceptible to increasingly frequent storm impact and flooding	Investment in coastal defences, particularly nature-based solutions for coastal infrastructure, would provide greater resilience to the impacts of tropical cyclones and other extreme weather events
Operational	Lack of eligible participant companies and enterprises in the VSEZ due to not being able to meet minimum standards of sustainability	Carefully calibrate sustainability standards in collaboration with private sector stakeholders including e.g. the CTA to ensure that the VSEZ remains accessible but aspirational for blue economy development
Market	Shifting end consumer behaviour with respect to blue economy products originating in Mozambique	Consider developing a brand marketing campaign for Mozambican products as part of the VSEZ's supporting infrastructure
Regulatory	Reduction in momentum in key reforms to the business environment in Mozambique may delay the improvement in the doing business climate that undermine the potential for building up a legitimate private sector	Liaise with MEF to support the introduction and implementation of doing business reforms and make clear the economic, social and sustainability arguments in favour of an improved business climate
Reputational	Initiative may be seen as a government attempt at controlling economic growth and development and fail to encourage participation in the formal economy	Ensure incentives for participation outweigh continued participation in informal economy and limit participation of state-owned or sponsored enterprises within the VSEZ

Indicative Timeline and Costings

The development of a special economic zone, whether physical or virtual, will take time, and will require a decision by Mozambique's Investment Council to establish a new Special Economic Zone and work with APIEX, the agency for attracting foreign investment and export in Mozambique, to implement a VSEZ with ProAzul. As such, this is a longer-term opportunity, though there are a number of steps that could be taken at an early stage both to parameterise the focus of the VSEZ and its membership and work with MEF to implement its benefits. Below follows an approximation of key timings and milestones.

Key costs for the development of this approach are in building the VSEZ itself, which will take the form of costs associated with policy implementation and a potential short-term reduction in revenue from enterprises and sectors afforded key benefits or incentives as a result of participating in the VSEZ. These will need to be scoped upfront through a cost-benefit analysis that will help parameterise the approach.

Additional operating costs would result from taking on the management of the VSEZ from/in collaboration with APIEX. In particular, for a virtual zone to comply with the relevant regulation on special economic zones and ensure appropriate inspections and monitoring for customs purposes, substantial digital infrastructure will be required, alongside operating staff, to support a viable geographically distributed special economic zone.

Next Steps

As indicated in the timeline, the immediate next steps would be to:

- Conduct a scoping assessment of the potential benefits of a special economic zone dedicated to the blue economy as well as potential demand by the private sector for a virtual economic zone that is geared towards sustainability
- Draft a concept of what this may look like, alongside develop eligibility criteria for participation based on sustainability standards, to then pitch to MEF as a partner in building the VSEZ.



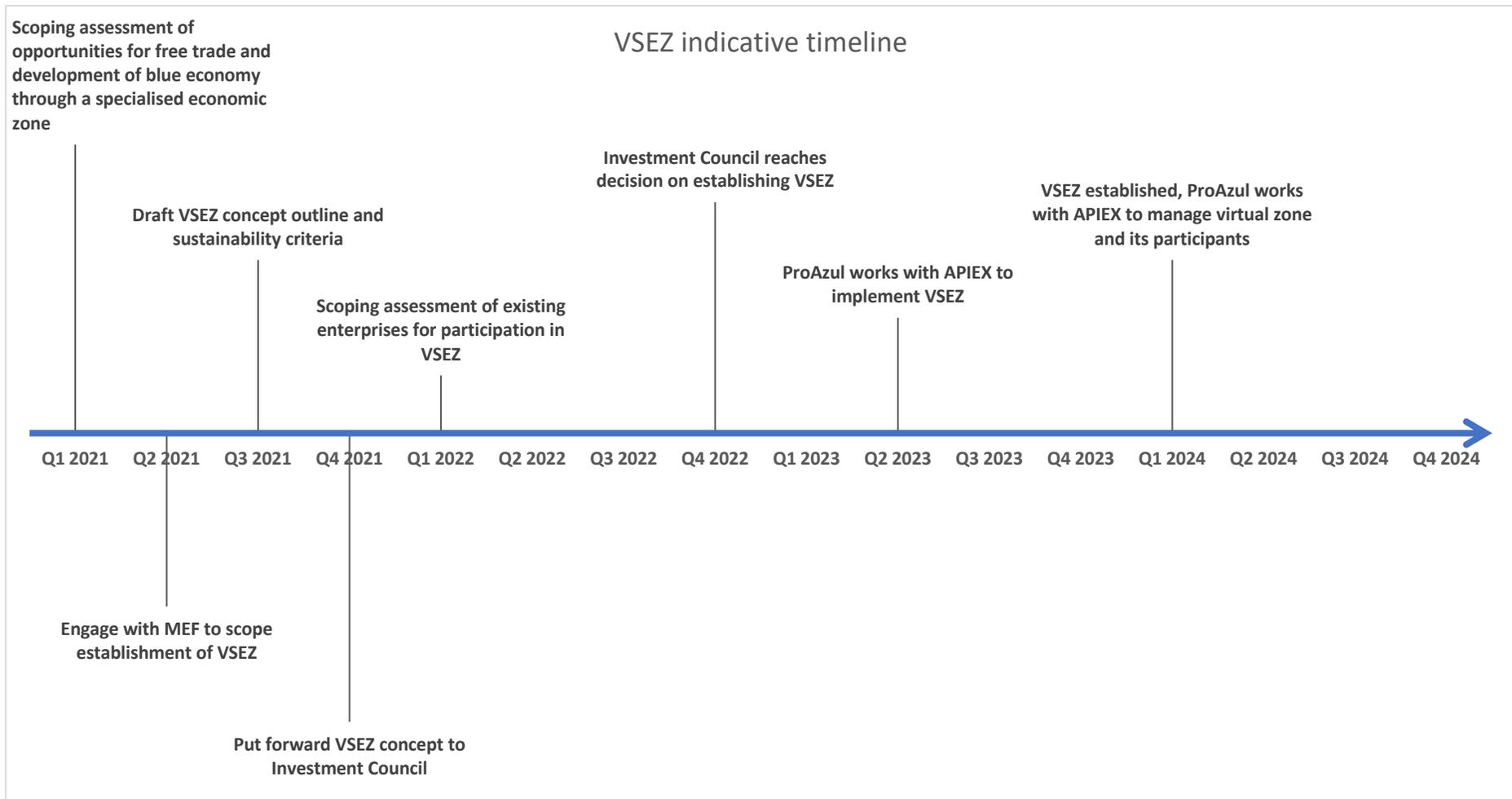


Figure 9 - Virtual Sustainable Economic Zone indicative timeline

8. Conclusions

Mozambique's natural wealth has attracted significant public and private investment for decades despite significant governance issues. The strong macroeconomic policy reform agenda and improved debt sustainability of recent years supported by the IMF, combined with discovery of extensive offshore gas fields in the northern province places Mozambique as an attractive place to invest once again.

The dominance of extractive industries as a significant source of government revenue has mainly benefited urban areas but has yet to raise the 70% of Mozambique rural population out of poverty. In an effort to address this challenge and diversify its economic base, the government has approved a series of new policies including, the National Development Policy 2015-2035 and 5-year plan (2019-2024) with a strong focus on inclusive and sustainable development and ongoing macro-economic reforms and good governance. The focus on the ocean and the development of a sustainable blue economy are part of this trend. It acknowledges the comparative advantage of Mozambique with its extensive coastline, deep seaports, EEZ, and inland waters, and strategic position in the region as well as its unique biodiversity as the basis for sustainable development opportunities in rural and coastal communities. Mozambique's unique coastal and marine assets are a major potential attraction for international tourism. With 2.87 million visitors in 2018 representing revenue of US\$ 241 million to the economy, marine and coastal tourism development offers opportunities for future growth and employment (TPF & Biodesign, 2020). Looking to the future, the rich biodiversity of the Mozambique Channel may be a source of commercially valuable genetic resources for pharmaceuticals, cosmetics and the food industry.

The GoM has made significant progress towards establishing the necessary legislative and policy framework, with the recent POLMAR Policy, the Legal Regime for the National Maritime Zone Use and marine spatial planning (POEM) process under way, the review of institutional arrangements with MIMAIP's new mandate, the establishment of Pro Azul and the development of the blue economy roadmap. Advancing a sustainable blue economy agenda is not without significant implementation challenges, from policy harmonisation across sectors under a common blue economy umbrella, implementation planning, operationalising institutional arrangements, technical and institutional capacity, reforming the business environment to grow private sector engagement including MSMEs, to improving physical and social infrastructure, attracting long term financing, notwithstanding addressing the impacts of climate change and other shocks such as Covid-19.

The report's recommendations to address these challenges reflect the importance of a strong enabling environment to build ownership and support among government and with stakeholders for a blue economy agenda as an important development opportunity. In addition, a strong enabling environment with transparent and accountable processes provides certainty and confidence for both public and private investors, thus securing long term financing for a sustainable blue economy agenda. The report's recommendations on financing mechanisms provide guidance on how those mechanisms may be further explored including the importance of developing a strong pipeline of investable projects. The report draws from current practice for financing sustainable development, noting that an increasing amount of work has been done in exploring how these mechanisms may be applied for marine and coastal zones and economic sectors. The mechanisms selected were broad ranging, but with the intent to be applicable to Mozambique circumstances.

The initial identification of Blue economy investment opportunities followed the principles of diversification, sustainability and inclusiveness within and across blue economy sectors, the value-adding of an integrated and sustainable blue economy taking advantage of synergies, addressing common challenges and achieving positive outcomes across sectors. They also offered potential roles for both public as well as private sources of capital. The four investment opportunities selected for further analysis of financing mechanisms provide insights on requirements and next steps.

To conclude, Mozambique has made significant progress in support of a sustainable blue economy as a means to diversify its economy and bring its people out of poverty. The analyses undertaken in this report to identify financing mechanisms for a sustainable blue economy demonstrates the importance of the local context and a suitable enabling environment for identified investment opportunities to be effectively realised. The review of the range of financing mechanisms available and broad applicability to the Mozambican context, and the elaboration of the four prioritised investment opportunities provide a first cut of what is possible, and the potential opportunities that exist as well as the steps to consider to realise them. Nevertheless realising these investment opportunities will require strong leadership, coordination, time as well as further feasibility analyses, technical and financial advice, and collaborations and partnerships with both local and international actors. The report's analyses and recommendations can inform whole-of-government conversation and provide the basis for the development of a blue economy investment strategy, which is integrated, coordinated and customised to Mozambique's sustainable blue economy needs.



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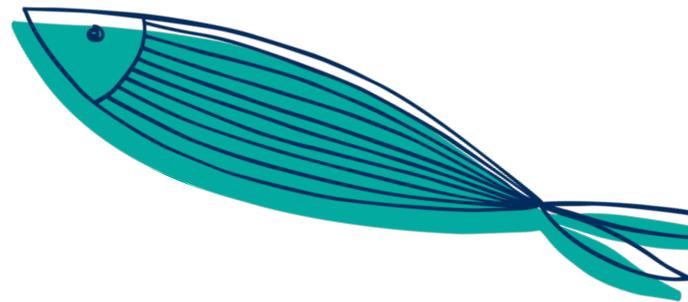
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Annex

Annex 1: List of Interviewees

Note: some of these interviewees included more than one conversation.

ORGANISATION	TYPE
AfDB	IFI
Aqua-Spark	Private sector
BIOFUND	NGO
CTA	Private sector
DINAB	Government ministry
DIPOL	Government ministry
EuropeAid	Development Partner
FNDS	Government agency
FUNAE	Government agency
IFAD	IFI
IFC	IFI
IUCN	NGO
KfW	Development Partner
MEF	Government ministry
MICULTUR	Government ministry
ProAzul	Government agency
Rare	NGO
UNECA	Development Partner
UNESCO	Development Partner
USAID	Development Partner
Vale/CLN	Private sector
WCS	NGO
World Bank	IFI
WWF	NGO

Annex 2: Mozambique Stakeholders

There is a broad variety of blue economy stakeholders and institutions in Mozambique, cutting across government, the private sector, NGOs and development partners. The below table provides an overview of the type and roles of different stakeholders. Additional discussion characterising the private sector as well as development cooperation in Mozambique are detailed further below in this section. Additional and more detailed information on the strategic objectives and activities of key ministries and government agencies, development partners and NGOs is provided in Annex 3.

Table 13 - Overview table of blue economy stakeholders

ENTITY	OVERARCHING FOCUS	DESCRIPTION
MINISTRIES AND THEIR FUNDS/AGENCIES		
MIMAIP - Ministry of the Sea, Inland Waters and Fisheries	Economic activities in the EEZ, inland waters	Line ministry responsible for coordination on blue economy and its key themes (fisheries, aquaculture, MSP). ProAzul parent ministry
ProAzul	Blue economy development fund, strategy to be developed	Blue economy development fund, financial development of marine and inland water resources
MTA - Ministry of the Terrestrial Environment	Terrestrial environment, coastal zone environmental conservation	Line ministry responsible for terrestrial conservation and environmental issues. ANAC parent ministry
ANAC	Conservation areas	Management of Mozambique's network of protected areas and reserves
MICULTUR - Ministry of Culture and Tourism	Tourism and culture	Line ministry responsible for Mozambique's tourism strategy and development of new tourism opportunities. Parent ministry of INATUR
INATUR	Tourism development	National tourism agency - promotes and coordinates tourism initiatives and promoting national tourism products
MEF - Ministry of Economics and Finance	Economics and finance	Central ministry responsible for collecting revenue, disbursing capital, coordination with development partners and coordinating 5 year development plan
APIEX	Investment and Export Promotion Agency	Assistance to investors for licensing, permits and tax incentives
MIREME - Ministry of Mineral Resources and Energy	Energy and natural resources	Line ministry for energy infrastructure and non-living natural resources including LNG, coal and aluminium
FUNAE	Renewable energy	Development, production and exploitation of energy in coastal and marine environments
MADER Ministry of Agriculture and Rural Development	Agriculture and food security, rural development	Agricultural competitiveness, reaching markets, food safety and security.
FNDS	Sustainable development	National fund for sustainable development promotes and finances integrated programmes for sustainability. Managed by Ministry of Agriculture and Rural Development
IFIs		
IMF	Macroeconomic stability, strengthening financial sector	Advises on debt sustainability, macroeconomic reforms and provides rapid credit for natural hazards including cyclones

WB	Inclusive growth and sustainability, readiness and response to natural hazards	PROBLUE programme works with MIMAIP on developing the country's blue economy and supporting the sustainable use of ocean and inland water resources
AfDB	Infrastructure and agriculture investment	Provides capital for investment to address infrastructure gap and create an enabling business environment to incentivise private sector development. Works to expand agriculture value chains
IFAD	Agriculture, artisanal fisheries and rural finance	Focus on small-scale producers to assist in expansion and commercialisation of activities, including PRODAPE aquaculture programme
Development Partners		
EuropeAid	Government financial capability, rural development and food security	Focus on implementing government's poverty reduction strategy and improving food security in rural regions, including access to markets and developing renewable energy infrastructure
DFID	Humanitarian response and water and sanitation	Humanitarian assistance for flooding and tropical storm relief
AFD	Biodiversity and sustainable development	Focus on protecting biodiversity and offering financial guarantees and technical support for sustainable development
NORAD	Education, clean energy, agriculture	Oil for Development programme provides guidance and support on managing eventual proceeds from LNG fields
KfW	Infrastructure	Port rehabilitation in Quelimane and, through BAF, designation of marine protected areas
USAID	Climate resilience	Coastal City Adaptation Programme increases resilience in coastal cities, focus on provision of climate-resilient urban services
NGOs		
IUCN	Coastal resilience and blue carbon	Improving coastal resilience to climate change, including establishment of mangrove nurseries and developing blue carbon habitats
Rare	Fisheries	Sustainable fisheries management through community-based practices
BIOFUND	Conservation areas	Channels funding towards conservation areas, with support from KfW, the World Bank and AFD. Works closely with ANAC
WWF	Habitat conservation, responsible fisheries and natural capital	Encourages sustainable development based on sustainable exploitation of marine resources, e.g. in Primeiras e Segundas protected area.
WCS	Biodiversity offsetting	Biodiversity offsetting programme focuses on 'no net loss' approaches to development, notably of megaprojects

Private Sector Engagement in Blue Economy

The engagement of the private sector in the blue economy has been primarily through Foreign Direct Investment (FDI) in large infrastructure projects administered by State Owned Enterprises (SOEs) and linked to extractives industries (coal and on shore oil and gas, ports and transport), and associated service industries. FDI has been on a downward trajectory since 2013 as a result of the drop in commodity prices and the impacts of the hidden debt crisis on investor confidence (see box 1). However, following the recent interest in development of extensive offshore gas in the Cabo Delgado province, the interest of international investors has been raised, lured by the high revenues. However, the impact of Covid-19 on the price of oil, combined with the insurgent's movement in the region are delaying a final investment decision by some investors, notably Total.

Micro, Small and Medium Enterprises (MSMEs) are relatively common in Mozambique, and in the blue economy focus on commodities (e.g. agriculture, small-scale fisheries), are informal and limited by skills. The size of the informal sector in GDP indicates that 74% of these firms are micro firms, employing less than five people, while only 2% of firms employ 100+ workers. Firms in the formal sector are also relatively new, with 50% of the micro firms being only six years old or less. Commerce, hotels and restaurants, manufacturing and other services are the largest sectors, accounting for the highest percentage of formal firms and formal sector jobs. Around 58% of firms are in trading activities, including wholesale and retail. This is followed by hotels and restaurants, other services, and manufacturing ((WB, draft).

Mozambique's commercial finance institutions, including insurers, commercial and state-owned banks play a key role in Mozambique's blue economy, providing lending to much of Mozambique's private sector (though with some key constraints as discussed in later sections) and with the capacity to finance potential large-scale opportunities⁸².

Nevertheless, despite some existing commercial activity doing business in Mozambique is ranked 138th out of 190 on the WB Doing Business index (2020), making it difficult to develop a responsible blue economy private sector (see challenges chapter). Increasing private sector participation on the blue economy will require an active policy change on the part of the government to improve on the range of doing business measures, notably with respect to improving access to credit, notably for MSMEs and rural communities, as well up skilling the labour force and improving basic physical infrastructure to facilitate access to land, utilities, credit and markets. Importantly it will also require developing a culture of blue economy sustainability, circular economy which will help diversify the "*productive base of the economy*" advocated in the National Development Strategy and 5-year implementation Plan (2019-2024) and in turn attract a different type of investment. Identifying the range of blue economy opportunities and ensuring the right enabling environment is in place will be critical to build investor confidence (see chapter on needs).

Development Cooperation

Several international development stakeholders operate in Mozambique, providing concessionary lending and grants for development. Approximately 20% of Mozambique's annual budget is comprised of development capital, down from approximately 75% in the early 2000s. The United States of America, IMF, World Bank, the African Development Bank, the European Union, as well as Germany, France and the UK are among the largest development partners, while China and Brazil have provided extensive credit lines, concessional and non-concessional, mostly directed at infrastructure.

⁸² Unfortunately it proved difficult to interview stakeholders from the key banks (notably BNI, Millennium BIM, BCI and Standard Bank) for this report, though renewed efforts to discuss their role will commence in subsequent exploration of potential financing mechanisms.

Top Ten Donors of Gross ODA for Mozambique, 2017-2018 average, USD million

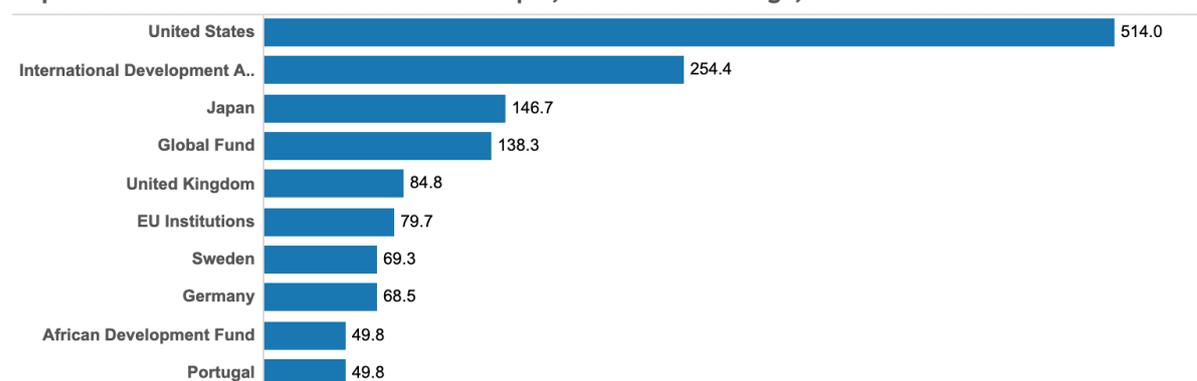


Figure 10 - Source: OECD – DAC (2020) Note that this provides an overview of official development assistance for the country as a whole, and does not focus specifically on blue economy activities

Up to 2015, most donor aid in Mozambique was coordinated through the Ministry of Planning and Development and the country's Group of 19 Development partners (G19), in line with the adoption of the Paris Declaration on Aid Effectiveness (2005), which included bilateral government development partners, the World Bank, the African Development Bank, and the European Commission. While some of these international development stakeholders provide capital for blue economy projects many of them do not, instead focusing on more foundational support for healthcare, education and infrastructure, as well as focusing on building solid governance and supporting Mozambique's democratic institutions. The group was significantly reduced subsequent to the hidden debt crisis, though a new donor platform is now being re-established in the Ministry of Economy and Finance, including the redirecting of funding to support a coordinated Mozambican response. Although international development partners coordinate and align their in-country activities to the country's main needs, they operate under separate governance arrangements, priorities and timeframes. In addition to financial support, international organisations and bilateral development partners provide specialised technical assistance to the government and local stakeholders in support of the implementation of their programmes, as well as undertake diagnostic analyses and evaluation studies which inform their respective programmes.

Government Ministries and Agencies

⇒ **The Ministry of Sea, Inland Waters and Fisheries (MIMAIP)**

The Ministry of the Sea, Inland Waters and Fisheries (MIMAIP) established in 2015 is the key institution which, "in accordance with the principles, objectives, priorities and tasks defined by the Government, directs, coordinates, organizes and ensures the implementation of policies, strategies and business plans in the areas of the sea, inland waters and fisheries" (Decree 2/2017). MIMAIP has the mandate to coordinate the implementation of POLMAR, discussed above. The new ministry's expanded mandate (previously the Ministry of Fisheries) required the transfer of functions, capacity and expertise from other ministries, a process still under way. For example, some of the functions of the Ministry of Land and Environment (e.g. related to the management of coastal and marine environment and the collecting of fees) now are with MIMAIP, creating some level of overlap in mandate between institutions during the transition period.

To facilitate coordination across government and in support of the 2019 law of the sea, MIMAIP is setting up a National Sea Council. The terms of reference of the National Sea Council are still being developed. It is envisaged that a Technical Committee will also be set

up to advise the Sea Council. It is anticipated that the Secretariat will be with the Ministry. Important functions of the Sea Council would be to provide national leadership, strategic oversight and coordination across government, agree on strategic priorities for ministries to implement as per their mandate, and monitor and review progress over the life of the Sea Policy.

⇒ ***The Blue Economy Fund (ProAzul)***

In November 2019, the government established the Blue Economy Fund (ProAzul) (Decree 91/2019). ProAzul, which replaces the previous Fisheries Development Fund (FFP), is the government financial mechanism which, in partnerships with government institutions, private sector and civil society, ensure the alignment of strategic activities and financial resources through the sustainable development of marine and inland water resources, under MIMAIP's mandate. Because of its dual functions of programme development and implementation and financing, ProAzul needs to have a close working relationship with the Ministry of Economy and Finance. To date, ProAzul has initiated several projects for the blue economy, however it has yet to develop an integrated investment strategy to guide its activities and investments and, importantly, a reporting framework to report on achievements. ProAzul activities are to be funded by a combination of government appropriation (through a % of taxes and fees collected by MIMAIP) and resource mobilization with external development partners, partnerships arrangements with the private sector and charging a fee for service to other ministries on joint activities. How the fee for service scheme would work needs clarification. Its role in support of MIMAIP in the National Sea Council is also still to be defined.

⇒ ***The Ministry of Economy and Finance (MEF)***

The Ministry of Economy and Finance (MEF), as a central ministry of the government, has a key role to play in how Mozambique's blue economy develops, and perceives the blue economy as a framework that contributes to broader country objectives – notably economic diversification. Its three most relevant departments, Treasury (including a sub-department focused on coordinating international cooperation), Planning (which coordinate the development of the five-year plan) and Statistics manage outgoing budget allocation towards blue economy sectors, incoming revenue as well as data and statistics on economic growth, employment and received ODA and multilateral financing. Any discussion on mobilising capital or implementing a new financing mechanism for the blue economy by funds or line ministries must closely involve the Treasury Department to ensure these remain within the bounds of Mozambique's governance framework. With the disbandment of the previous coordination ministry, MEF acts in a coordinating capacity across many different line ministries to monitor budgets and programme implementation, and is closely involved with all government development funds, including ProAzul.

⇒ ***Other ministries and funds***

Other sector-based ministries and associated funds of relevance to blue economy, which share a similar structure to ProAzul include *inter alia*:

- The National Fund for Sustainable Development (FNDS) under the Ministry of Agriculture and Rural Development). established in 2016 (decree 6/2016), its objective is to promote and finance integrated programmes and projects that ensure sustainable, harmonious and inclusive development, in order to meet present needs, without compromising the ability of future generations to meet their own needs. FNDS competencies are to mobilize, generate and manage finance programmes and projects on sustainable development.
- The Ministry of Land and Environment (MTA), which is responsible for terrestrial conservation, including overlapping mandates in Mozambique's territorial waters with MIMAIP. MTA is ultimately responsible for ANAC, the administration for national

conservation areas, which manages Mozambique's network of protected areas and reserves.

- The Energy Fund (FUNAE) established in 1997 (Decree 24/1997), under the Ministry of Energy and Mineral Resources (MIREME) the purposes of which are the development, production and exploitation of different forms of energy through financial loans for energy production, equipment acquisition and to techniques that concern the production, distribution and conservation of energy.
- The National Institute of Tourism (INATUR) established in 2014 (decree 85/2013) under the Ministry of Culture and Tourism (MICULTUR) with the mandate to promote and coordinate tourism-related initiatives, encouraging related activities or contributing to their valorisation and promoting national tourism products.

A recent decree to harmonise the operations of funds is under consideration. It is important to note that sector-specific Ministries and associated funds operate independently; at the time of writing there is no additional information regarding formal mechanisms for coordination in place, either through the National Sea Council and associated Technical Committee or other platforms.

Development Cooperation

While each of the development partners working in Mozambique has far-reaching programmes and comprehensive development strategies, for the purposes of this overview, the main institutions operating in Mozambique and a selection of their most significant activities are highlighted below.

⇒ ***The International Monetary Fund***

The IMF main focus has been on macroeconomic stability, macroeconomic reforms strengthening the financial sector and the governance framework of Mozambique. The IMF's support was particularly impacted by the hidden debts crisis in 2016, and current activities have been severely curtailed and re-oriented towards renewing Mozambique's access to international development finance, particularly given the impact of hurricanes Idai and Kenneth on economic recovery. In early 2019, the IMF disbursed US\$ 118 million in emergency credit following hurricane Kenneth under the Rapid Credit Facility. A recent IMF report indicated that debt management was robust, which has been instrumental in renewing confidence of development partners in Mozambique (IMF, 2019).

⇒ ***The World Bank Group (IDA)***

The proposed country programme (FY17-FY21) aims to support Mozambique in achieving its objective of creating more inclusive growth through employment promotion and improving productivity and competitiveness in a sustainable manner. It focuses on a set of objectives reflecting the Government's programme and development priorities, as well as the World Bank's comparative advantage relative to other development partners. Key policy objectives are organized around the themes of:

- Growth: Promoting Diversification and Boosting Productivity;
- Inclusiveness: Generating Employment, Facilitating Urbanization, and Expanding Access to Quality Services; and
- Sustainability: Addressing Risks to Growth and Poverty Reduction.

Additionally, in light of Mozambique's high vulnerability to climate change, the IDA programme will make use of instruments to improve readiness and response to natural hazards.

Within this overarching framework, the Bank works closely with the Ministry of Sea, Inland Water and Fisheries (MIMAIP) on developing the country's blue economy and supporting the sustainable use of ocean and inland water resources through its PROBLUE Programme. The

Bank acknowledges that further support is needed, however, to bring together sectors that are interdependent but managed independently, such as: aquaculture, coastal zone planning, tourism, marine pollution, conservation, and the extractive industry. Within the WB Integrated Landscape Management Portfolio, the Bank's fisheries projects, notably under SWIOFish, are aimed at:

- Strengthening governance and management.
- Improving data collection and analysis
- Expanding financing for fishing industry enterprises to expand sustainable fisheries value chains.
- Offering alternative livelihood opportunities to reduce pressure on key fish stocks.

The Bank has developed a report on private sector development which identifies some of the key constraints and opportunities, some related to blue economy. (World Bank, draft).

⇒ ***The Global Environment Facility***

The Global Environment Facility (GEF), through its country programme for Mozambique, provided over US\$ 66 million in grants under its previous funding cycle. Grants of up to \$50,000 are disbursed directly to local communities including indigenous people, community-based organizations and other non-governmental groups for projects in Biodiversity, Climate Change Mitigation and Adaptation, Land Degradation and Sustainable Forest Management, International Waters and Chemicals. The GEF disburses its grants through a number of agencies, notably the FAO and World Bank, UNEP, UNDP and WWF. Within this country programme, the international waters programme provides grant capital for a number of projects and programmes in Mozambique, notably for protected area designation and management, sustainable fisheries and broader conservation work.

⇒ ***The African Development Bank***

MDB lending towards Mozambique was significantly reduced after the hidden debts crisis in 2016. As a result, the AfDB's lending to Mozambique under their current funding round is only US\$ 56.3 million in concessional capital. Mozambique is not eligible for the AfDB's non-concessional funding. As a result, the AfDB is particularly keen to explore means to make this money go further – notably through leveraging their existing capital with other development partners and/or working through blended or public-private approaches to investment to overcome the limited capital allocation. In addition, AfDB is also focused on developing innovative approaches to financing such as blue bond issuances.

AfDB's 2018-2022 focus for Mozambique is largely geared towards infrastructure and agriculture investment, providing solutions to the key barriers identified for development in Mozambique: the infrastructure gap, a costly business environment and insufficient skills and knowledge for development. The main objective of the infrastructure pillar is to create an enabling business environment that is more competitive, in order to incentivize the private sector through investments in the country's energy and transport infrastructure, connecting rural areas to development corridors and improving market access. The agriculture pillar intends to contribute to agricultural transformation and expand agriculture value chains.

This programme of work includes efforts to improve fisheries, including Covid-19 relief funding for MSME's in the fisheries sector worth US\$ 2.5 million.

⇒ ***IFAD***

In Mozambique, IFAD-supported loans help to integrate small-scale producers into profitable and accessible markets. IFAD's strategy is aligned with government objectives for poverty reduction as well as sector strategies for agriculture, artisanal fisheries and rural finance. Activities, with an envelope budgeted at US\$160 million for 2018-2022, target poor producers who have the potential to expand and commercialize their activities, with a focus

on disadvantaged groups such as women and young people. IFAD's country strategy includes the following goals:

- *Productive and sustainable water and land use/management by the rural poor, notably women and youth.* IFAD will support its target groups to access water, secure land and sustainably manage natural resources so they can improve their food security (either through the production or purchase of nutritious foods), and invest more time and money in their land
- *Sustainable value chains for priority commodities are remunerative for smallholder producers and create employment for the rural poor.* IFAD will finance investments in productive climate-resilient rural infrastructure, support enterprise development and employment creation, and promote partnerships along value chains, enabling all target groups to improve their livelihoods and increase their incomes.
- *Poor rural people are able to use financial services to improve access to income-earning activities, develop their livelihoods and manage risks (personal and environmental), enabling them to withstand shocks.* IFAD's investment would enable financial service providers to offer affordable, responsible and accessible financial solutions for poor rural people that are sustainable and at scale. An infrastructure that enables ubiquitous, efficient, open and safe financial markets will be in place and the policy and regulatory framework for financial inclusion will be enforced.

In the blue economy, IFAD is focused on both aquaculture and fisheries opportunities, having served as a key funder of Mozambique's now-completed ProPESCA programme which supported the development of small-scale fishers along Mozambique's coast. IFAD has since established a new US\$ 49 million aquaculture-focused programme called PRODAPE. PRODAPE will focus on aquaculture and technology including climate proofing of projects affected by cyclones Idai and Kenneth, as well as financial inclusion for MSMEs and enterprise development. This, in combination with its focus on building climate-resilient infrastructure may make IFAD a compelling potential partner for the development of any sustainable blue economy financing strategy for Mozambique.

⇒ **EuropeAid**

The EU and its member states collectively account for approximately 80% of Official Development Assistance (ODA) to Mozambique, with the EU's main instruments being grant-making through the European Development Fund as well as concessional lending through the European Investment Bank (EIB). EU priorities for Mozambique through the 2014-2020 National Indicative Programme (NIP) are good governance (through the Good Governance Development Contract, GGDC) and rural development. The GGDC instrument intends to improve the government's financial capabilities, notably to implement the country's poverty reduction strategy. The GGDC also places some focus on improving transparency in governance, anti-corruption measures and accountability (particularly in the use of natural resources), providing foundational governance structures relevant to our work, on which a framework for financing a sustainable blue economy can be built. The rural development programme focuses in particular on improving food security and enhancing competitiveness in Mozambique's more isolated regions. This includes work on small-scale fisheries, notably in the context of improving productivity (within sustainable limits), improving access to markets and developing renewable energy infrastructure – in the context of the blue economy, notably solar energy.

The Department of International Development (DFID, UK)

DFID provides humanitarian assistance in response to natural hazards including flooding and tropical storms (US\$ 7.2 millions in 2018-19) and water and sanitation programme (WASH) to the amount of US\$ 11.4).

⇒ ***Agence Française pour le Développement (AFD, France)***

France has invested a total of EUR 1.1 billion in Mozambique since 1981. The main focus of French investment is biodiversity and sustainable development. AFD supports sustainable development through lending to the public and private sectors, as well as the provision of financial guarantees, subsidies and technical support. Their focus is threefold: protecting biodiversity; creating economic opportunities for Mozambique (notably around tourism and export-oriented sustainable agriculture) and supporting sustainable development more broadly. Of their existing investments, they have contributed € 27.3 million (US\$ 29.5 million) towards biodiversity conservation since 2004. Given their focus on both biodiversity and deploying financing instruments for development, they may be an ideal partner for developing new projects for a sustainable blue economy, notably in the areas of tourism, aquaculture and fisheries.

⇒ ***Norwegian Agency for Development Cooperation (NORAD, Norway)***

NORAD mainly funds international NGOs working with local partners. This support is channelled to education, children's rights, clean energy, agriculture, business development and natural resource management. NORAD historically was heavily involved in Mozambique's fisheries, and provided funding through its global 'fish for development' programme, whereby fisheries development is viewed as a primary driver of rural development, livelihood and food security. For a time, Norway was the main donor for fisheries work in Mozambique, providing NOK 70 million (US\$ 6.45 million) over the period 2016-2018. While originally a focus country for fish for development, Mozambique is no longer one of the primary countries in the programme, though Norad continues to provide some funding for fisheries work in Mozambique. Indirectly, Norad provides a significant portion of FAO's funding and contributes a research vessel (the *RV Fridtjof Nansen*) to FAO's fisheries science efforts, recently demonstrated in Mozambique through a workshop on fisheries monitoring in May 2019.

Separately, NORAD's 'oil for development' programme provides guidance and support to countries seeking to manage the proceeds from their non-renewable resources to ensure safety, good governance and manage environmental impact. Norway has supported Mozambique in this capacity for the last 30 years, and may provide some helpful guidance and input on how revenue from Mozambique's LNG fields may best be leveraged for development of a sustainable blue economy. There are ongoing discussions between Norway and Mozambique on the design of a Sovereign Wealth Fund to administer the proceeds of forthcoming LNG revenue.

⇒ ***The Kreditanstalt für Wiederaufbau (KfW, Germany)***

The Kreditanstalt für Wiederaufbau (KfW)'s in Mozambique is largely focused on developing infrastructure to support the country's economic development. In recent years, this has included some investments that are relevant to the blue economy, notably through the rehabilitation of the Port of Quelimane (which, unfortunately, is now a hub for illegal timber export to China) for EUR 11.29 million (US\$ 12.2 million). The rehabilitation of the Port of Quelimane was part of the nationwide Roads and Coastal Shipping Programme of the Mozambican government (ROCS), which was aimed at rehabilitating key parts of the Mozambican road network and revitalising coastal shipping. This programme was coordinated by the World Bank. The German Ministry for Economic Cooperation and Development (BMZ), through the KfW Development Bank (KfW), established the Blue Action Fund. The Swedish

Ministry for Foreign Affairs joined in 2017, followed by France Agence Française De Developpement. The Blue Action Fund provides additional funds to non-governmental organisations working to accelerate and improve the designation and management of marine protected areas, the sustainability of fish stocks or the enhancement of livelihood and food security.

In addition, KfW has also financed the development of a new undersea telecommunications cable to be laid to improve interconnectivity between Mozambique and the rest of the East African region.

⇒ **USAID (US)**

USAID under the Obama administration was the lead donor to Mozambique on policy and governance support, with four objectives to its programming: Strengthening democratic governance; Accelerating resilient and broad-based economic growth; improving quality of education; Improving health status of target population. Within this, USAID maintained a number of programmes of direct relevance to the blue economy, notably the Coastal City Adaptation Programme (see below), programming for tourism development (notably in the context of coastal zone planning) and the Loan Portfolio Guarantee facility. Unfortunately, it is unclear how many of these programmes remain operational or have been renewed under the current administration.

The Coastal City Adaptation Programme aims to increase climate resiliency in select coastal cities. Direct beneficiaries will include city authorities, residents of the municipalities participating in the project, local civic organizations, academic institutions and the National Institute for Disaster Management. Because they tend to live in the urban zones most at risk to climate hazards, benefits will particularly accrue to low-income households. The program will improve the provision of climate-resilient urban services, increase public demand for climate resilience measures, and increase access to insurance and other risk management tools for vulnerable urban infrastructure and livelihoods.

Non-Governmental Organisations

The non-governmental organisations (NGOs) engaged in ocean-related activities are primarily focused on the protection of the coastal and marine environment, forestry, biodiversity conservation, sustainable livelihoods and climate change adaptation and mitigation. Their role has been to provide specialist policy and technical expertise to government and to local communities.

International NGOs operating in Mozambique include IUCN, Rare, WCS and WWF. They have engaged with government at the policy level (e.g. WWF and the Green economy strategy), developed an offset strategy which will soon become law (WCS), undertook technical assessment (e.g. IUCN Blue Carbon), implementing on-the-ground projects, assisted local coastal communities adapting to Climate. They have participated in the MSP planning process initiated by the Ministry of Seas, Inland Waters and Fisheries (see below). Operating in Mozambique has been challenging for some NGOs, and identifying the right government partner is essential to achieve outcomes.

A selection of the most relevant NGOs and their blue economy projects includes:

⇒ **IUCN, RARE and MIMAIP: Coastal Resilience to Climate Change (CRCC)**

The Coastal Resilience to Climate Change (CRCC) project, funded by the Swedish Embassy in Maputo is empowering coastal communities to respond to climate change in an inclusive, resilient and more sustainable way. The project, which is jointly implemented by the Mozambique Ministry of Sea, Inland water and fisheries, IUCN and RARE is aimed at

supporting restoration efforts and providing funding for community activities that will lead to increased community resilience and improved household income. The project launched several community initiatives and handed over boats, fishing and fish conservation equipment, agricultural inputs for the practice of conservation agriculture and material to establish mangroves nurseries to communities in Inhassoro and Dondo districts.

⇒ ***IUCN/MIMAIP: Blue carbon scoping project***

In 2017, IUCN worked with MIMAIP to estimate the scale of marine carbon stores in protected habitats in the Western Indian Ocean (WIO) with an initial focus on Tanzania and Mozambique. The project aims to use best available information to estimate the extent, diversity and scale of blue carbon (BC) habitats in the region. The outcomes, including a review of habitats, their carbon stores and sequestration potential, will serve as input to coastal management and protection planning to ensure that ecosystem services such as carbon capturing and storage as well as biodiversity are adequately protected and where possible enhanced.

⇒ ***BIOFUND***

BIOFUND is an independent private Conservation Trust Fund part of a global network of institutions that are governed according to the parameters and principles defined by the CFA (Conservation Finance Alliance) based in the US. Mozambique includes 14 important ecological regions, some of which are considered to be of global importance. The National Network of Conservation Areas, Managed by the Agency for Conservation Areas (ANAC), covers approximately 26% of the national territory and includes 19 national parks and reserves, 20 official hunting reserves and a variety of other categories of Conservation Areas. With the growing reputation of BIOFUND as an independent and well-managed body, the institution has also been successful in raising funds for direct application. By early 2017, BIOFUND had drawn up agreements with two development partners, the French Development Agency (AFD) and the World Bank through its MozBio programme, to channel and follow funds for the Conservation Areas.

⇒ ***Wildlife Conservation Society***

The Wildlife Conservation Society (WCS) developed the Impact Mitigation and Biodiversity Offsets in Africa (COMBO) regional project, including in Mozambique, which aims to contribute to the establishment and implementation of effective mechanisms to avoid, reduce and compensate impacts to biodiversity and ecosystems, in order to achieve "no net loss" or a "net gain" of biodiversity, with the improvements in mitigation, particularly the last step of offsets (or compensation) generating additional funds for conservation activities. A biodiversity offset strategy developed by WCS, with support from BIOFUND, was recently approved by government.

⇒ ***The Blue Action Fund (Germany, France, Sweden)***

Disbursed funds to NGOs individual grants to selected conservation projects in marine protected areas (MPAs) and their buffer zones, focusing on the most sensitive coastal waters of Africa, Latin America and Asia/Pacific. Its goal is to contribute to reducing the dramatic loss of marine biodiversity and to advancing local development, for instance through stabilizing incomes in coastal communities or enhancing coastal protection. The Blue Action Fund funds a WWF project on the development of an effective management regime of The Primeiras and Segundas Environmental Protected Area (PSEPA) to the amount of € 2,250,000 over 4 years. The project includes a livelihood component

⇒ **WWF**

WWF has maintained a presence in Mozambique since 1999, and has developed a marine programme that focuses on conservation, responsible fisheries and habitat conservation. The overall objective of the programme is conserving biodiversity and biological processes in Mozambique's key coastal and marine ecosystems, while ensuring the management and equitable use of the country's marine resources. A new strategy for the period 2020-2030 is currently under development.

WWF also maintains a natural capital presence in Mozambique as part of its wider Natural Capital Project. WWF worked with the Mozambican government and the Natural Capital Project to assess risks to habitats and identify options for critical protection to preserve ecosystem services. On the basis of this assessment, WWF and MITA identified opportunities to encourage and facilitate sustainable development based on the sustainable exploitation of resources in the Primeiras e Segundas Protected Area. This analysis demonstrated where mining operations and infrastructure are most at risk from coastal hazards and informed strategies for locating infrastructure and operations strategically to both reduce impacts to ecosystem and reduce risk to investments. The next steps are to assess key ecosystem services for communities in Primeiras e Segundas and to support the government's development of a national blue/green economy plan.

Annex 3: Full list of considered investment opportunities

Key points

A number of investment opportunities for Mozambique's blue economy are proposed, on the basis of consideration of the challenges facing the country and the development objectives set out in national strategies and the socioeconomic conditions of the country.

These opportunities range from short- to medium- to long-term prospects with a brief discussion of the context, potential investment approach, needs and key stakeholders for each opportunity. Each opportunity also features a SWOT analysis to help guide and inform the viability of these opportunities and what steps may be necessary to develop them further.

In this annex a number of investment opportunities across a range of blue economy sectors are proposed. Overall, the proposed opportunities are focused on investments aiming at building resilience of coastal communities and promote an inclusive diverse and sustainable blue economy. To inform the opportunities and their feasibility the following have been taken into consideration:

- The National Development Strategy (2015-2035), the Government 5-year plan (PQG, 2019-2024) and the Sea policy and related sector-based policies
- The socio-economic environmental, financial and institutional context of Mozambique noting the large forecasted revenue from extractive industries which offers opportunities or future investment and diversification
- Current initiatives on which to build upon; and
- The vulnerability to climate Change and external shocks (including COVID-19) which impacts on livelihoods, infrastructure, and the economy (IMF GDP costs) and the coastal and marine environments and resources they depend on.

As a principle, the focus lies with blue economy investment opportunities that deliver diversification, sustainability and inclusiveness within and across blue economy sectors as

well as demonstrate the value-adding of an integrated and sustainable blue economy taking advantage of synergies, addressing common challenges and achieving positive outcomes across sectors. To help parameterise the investment opportunities, the investment objectives that these opportunities help meet are the following:

1. Focus on protecting coastlines and habitats (through natural infrastructure, including MPAs and critical habitat restoration) and marine resources (e.g. fish stocks, genetic resources and marine ecosystems)
2. Foster innovation and domestic business and enterprise skills – improving the business environment in Mozambique
3. Promote MSMEs and sustainable economic opportunities focusing on rural coastal communities (e.g. Small-scale Fisheries, Tourism, aquaculture, biotechnology)
4. Expand infrastructure to coastal communities (such as off grid solar energy electricity, access to telecommunications (mobile network), water and waste management services, ports and maritime transport and transport corridors)
5. Take advantage of Mozambique’s strategic location and comparative advantage as a potential east African hub
6. Reduce environment and socioeconomic vulnerability and contribute to COVID-19 recovery

Many of the proposals are interrelated, and opportunities for integration and harmonization exist among them, to offer a flexible set of solutions that may support both short- and long-term development needs that can be scaled up or down depending on feasibility and on-the-ground conditions. All of the proposals require some level of policy reforms and strengthening of governance arrangements as well financial and political stability, and build on the suggestions outlined in the ‘needs and enablers’ chapter. All would require a blending of public and private investment. All may be impacted by Covid-19 in ways yet to be known. To aid the reader they have been arranged from short-term opportunities to longer-term opportunities, with an attendant increase in complexity and requiring additional reforms and enabling conditions to be met to be viable.

Table 14 - Long list of potential investment opportunities

Opportunity	Description	Timeframe	Sector
1	Ocean governance and innovative tools for maritime security	Short-term	Security; innovation
2	Blue incubator	Medium-term	Integrated; MSMEs
3	Aquaculture for food security and job creation	Medium-term	Aquaculture
4	Innovative tools for sustainable fisheries	Medium-term	Fisheries
5	Marketing Mozambique as a tourism destination	Medium-term	Tourism
6	Investment opportunities in fisheries sector diversification	Medium-term	Fisheries
7	Green port development	Medium-term	Ports
8	Improving returns on industrial fisheries resources	Long-term	Fisheries
9	Coastal and marine conservation and climate resilience	Long-term	Conservation; coastal infrastructure
10	Building marine knowledge and capacity for marine conservation and bio prospecting	Long-term	Conservation; bioprospecting
11	Integrated development of Sofala Bank	Long-term	Integrated; tourism, fisheries, coastal infrastructure
12	Building a vibrant blue economy private sector for an inclusive and diversified Economy	Long-term	Integrated MSME

In addition to the fully developed opportunities, included here are a number of smaller, more immediate interventions that may be made in order to move towards a sustainable blue economy in Mozambique. These are outlined in the following text box.

Box 1 - Low-hanging fruit opportunities

These are defined here as smaller, more immediate interventions distinct from the more fully articulated investment opportunities, which would nevertheless make a meaningful early contribution to Mozambique's blue economy. As the challenges facing Mozambique's blue economy are significant, these low-hanging fruit opportunities are based on *implementing previously described needs and scaling up existing activity*.

1. Implementing a blue economy satellite account -As described in the needs chapter, implementing a blue economy satellite account would provide a means for MEF and the rest of the GoM to gain clarity on the financial flows related to the blue economy, underscoring its importance to the economy and inclusive development and providing clarity on where greater funding and investment are needed. The blue economy satellite account would not require significant investment beyond personnel expertise and coordination across government to manage the account and track capital flows, and could be integrated into the programme and budget cycle.

2. Technical and vocational training through extractive industries CSR and proceeds - Throughout this document the role of the private sector in enabling the blue economy is touched upon but no specific examples are provided of how it might support its development. The use of corporate social responsibility (CSR) resources from large multinationals investing in Mozambique's development (particularly oil and gas companies looking to invest in LNG fields in northern Mozambique) may prove a route for rapid deployment of resources to address one of the blue economy's key needs – for technical and vocational training for blue economy sectors to meet demand and government requirements. This would be particularly applicable to rural communities where existing opportunities for training and education are limited.

3. Scaling up of existing activities - Two notable examples of innovative activity for the blue economy in Mozambique are ProAzul's partnership with FUNAE for off-grid solar energy infrastructure in rural fishing communities and ProAzul's development of an app for fisheries registration, licensing and mobile payment. Both of these projects are at a trial stage, with significant potential to make a meaningful impact. As the projects are already underway and the scope for replication is apparent for both, these are prime candidates for the quick allocation of resources to replicate and scale up these projects to additional communities and a broader audience. As these also address underlying needs (for greater infrastructure and data), investing in these low-hanging fruit opportunities would also align well with larger and longer-term opportunities described below.

1. Ocean governance and innovative tools for maritime security

⇒ **Brief outline**

The protection and sustainable development of the ocean is based on the international legal framework of the UN Convention on the Law of the Sea (UNCLOS), which defines the rights, and obligations of countries in their ocean domain according to defined zones. It is implemented in Mozambique through the *Regulation for the establishment of a legal regime for the national maritime space (RJUEM, decree 21/2017)* and *POLMAR (20/2019)* both administered by MIMAIP. The National Sea Council, chaired by the President is the strategic coordinating mechanism for the implementation of POLMAR. In 2018 MIMAIP initiated a multi-stakeholder POEM process (phase one is now completed 2020) as the tool by which the spatial allocation of the uses of the sea will be defined. Ensuring the implementation of the POEM will require the ability to monitor and ensure compliance of prescribed maritime activities as well as building maritime safety and enforcement capabilities. With the increasing focus on the ocean as a development space (fishing, offshore LNG, tourism) and the importance of the Mozambique Channel for shipping, developing maritime security capacity is critical to the safety of blue economy activities.

Developing such capacity is twofold, on the one hand, infrastructure such as (patrol boats or aircraft capacity and shipyards maintenance services) and on the other hand effective marine domain awareness (MDA). Building a maritime security infrastructure requires significant upfront and ongoing investment and capabilities beyond most developing countries. Such an activity may be best approached through regional cooperation amongst coastal states of the Mozambique Channel through Regional institutions such as SADC and under the broader umbrella of the African Union African Maritime Strategy (AIMS) 2050 . Such approach would require leadership and careful negotiations, but could be cost effective and benefit all parties.

A more feasible investment in the short term and consistent with the implementation of the POEM/PNDT would be to focus on establishing/strengthening MCS capacity for MDA and developing a national maritime security strategy, informed by the AU AIMS 2050 and existing initiatives in neighbouring coastal states such as South Africa. Training opportunities could be also be considered with regional actors and development partners including South Africa, France and the US.

⇒ **Approach**

Public investment (ODA, MDB, EU) could focus on the development of a maritime security strategy to take stock of current initiatives, identify needs (including training) and set priorities for action and future investment, including the finalisation of maritime boundaries. Innovative solutions for Mozambique to consider as a low hanging fruit, in developing/strengthening MCS capacity could be in the first instance entering in partnership arrangements with NGO such as Global Fishing Watch and IMO to advise on a suitable Electronic Maritime domain awareness system and build technical capacity, taking advantage of regional platforms such as FishAfrica and initiatives (e.g. South Africa/Tanzania/ Kenya, France, US). This would provide a cost-effective way to monitor activities in the EEZ, both legal and illegal and a more targeted use of patrol boats or aircrafts in the EEZ and contributing to the implementation of the POEM/PNDT. It could be combined with strengthening effective IMO ports measures and FAO PSMA which Mozambique is signatory to. Given the importance of safety to oil and gas offshore operations in the north and the costs of illegal activities such as IUU and impacts on the environment, return on investment would come from increased exports revenue, service fees for greater security of offshore infrastructure, reduction in IUU, and a safe environment for a marine based tourism (yachting, cruise, recreational fishing), thus increasing economic activity, revenue and exports and securing employment opportunities.

⇒ **Needs**

As this opportunity is based on a dedicated effort to improve ocean governance through the development of a maritime security strategy and MCS capacity,) it would need complementary enforcement capacity which may require infrastructure and partnerships with regional actors as well as commitment to eradicate illegal activities. National coordination and coherence, in the context of the National Sea Council, and the finalisation of maritime boundaries would be important for the successful implementation of this opportunity. ⁸³

⇒ **Stakeholders**

MIMAIP, MITADER, National Institute for Fisheries (IIP), Ministry of Foreign Affairs and Cooperation (MINEC), National Institute for Hydrography and Navigation (INAHINA) National Institute of the Ocean (INAMAR) MDB, ODA, EU, GFW, IMO, AU

⁸³ Mozambique' has already developed a National Strategy and Action Plan for compliance with the PSMA (2017)

⇒ **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
<p>MCS/maritime domain awareness technologies are readily available</p> <p>Regional initiatives such as the Indian Ocean Commission MCS program for islands and some African Coastal States, as well as the forthcoming Regional SADC MCS centre</p>	Existing capacity – greater local expertise is needed	IMO training	
Regional Maritime security capabilities (SA, France, US)	Commitment to prosecute illegal activities		
AIMS strategy in place as guidance	No national strategy currently approved	Existing models e.g. ZA/Seychelles maritime security strategy to draw from	Surge in piracy Oil spill
POEM/PNDT implementation	National coordination and conflicting mandates		
Philanthropic investors would be interested in implementation of the technology	Availability of service providers (e.g. GFW and others)	Examples available (PEW Eye on the sea in Palau)	
Support from ocean users (LNG, tuna fisheries, cruise tourism, shipping)			
	Would need to be followed by pooling/investing of regional infrastructure on water/air/port support capabilities at Channel level	Regional cooperation of Mozambique channel countries in the past	Investor confidence

2. Blue incubator

 ⇒ **Brief outline**

Blue (sometimes referred to as ocean or maritime) clusters are hubs typically based on a partnership between private sector actors with the aim of leveraging competitive advantages, enhancing dialogue and collaboration (Hansen et al, 2018). In many cases, they can feature academic and public sector participation with additional foci on innovation and knowledge sharing. To date, the majority of blue clusters have been based in the developed world, and there is a clear opportunity to develop more of these approaches with a view to developing economies (Hansen et al, 2018).

For Mozambique, the development of a blue cluster-style arrangement may start with a 'blue incubator', which could follow the model adopted by the Icelandic Ocean Cluster, which focuses in part on nurturing new entrepreneurs and business ideas for the blue economy, in exchange for an ownership stake in any eventual business that's developed through the cluster (Iceland Ocean Cluster, 2020). In this way, the Icelandic cluster adopts some of the characteristics of a seed investor.

A blue incubator in Mozambique would provide a means for young entrepreneurs to develop innovations in the blue economy and provide a means to create new business and economic growth driven by domestic, rather than international, solutions and creativity.

⇒ **Approach**

The University of Eduardo Mondlane (UEM) in Maputo holds significant blue economy knowledge and expertise, and through their school of business and entrepreneurship has capacity to work with students to develop their business skills. In collaboration with ProAzul as well as the CTA, it may be possible to establish a blue incubator linked to UEM to attract young entrepreneurs to focus their talents on the blue economy, and offering connections to the private sector for long-term development.

Potential entrepreneurs from across the country may apply with a business idea for the blue economy to be part of the blue cluster, hosted under UEM's school of business and entrepreneurship. If successful, they would receive up to the equivalent of e.g. USD 5000 from ProAzul (in exchange for an ownership share) as a seed investment to develop their concept within the cluster, taking advantage of UEM's knowledge resources in both oceans and sustainability as well as business education, as well as a group of mentors and networking opportunities provided by the CTA. The CTA may also play a role in showcasing the best entrepreneurs through their annual meetings, granting exposure to Mozambique's private sector, potential follow-on investors as well as possibly offering an award incentive e.g. 'President's Medal/Award' for the best entrepreneurs.

The entrepreneurs may participate in the cluster for a maximum of 2 years during which time they would need to meet key development milestones (for example developing out a costed business plan, identifying partners, or possibly identifying post-seed investment), and on completion would have a viable business to take out into the world. The strategy is high-risk high-reward with relatively small amounts of capital, with the expectation that many of the supported businesses will not succeed, but a handful will find their niche in the market and grow significantly, through which ProAzul may generate a return on exit from the investment.

There may be an opportunity to link the blue cluster with MEF to provide tax benefits to the businesses coming out of the cluster as a further incentive to participate (and simultaneously ensuring that the entrepreneurs become part of the formal, taxed economy from the outset).

Given the focus of this approach on entrepreneurs and potential development of new MSMEs, this opportunity may be considered a short- to medium-term opportunity towards the longer-term development of a vibrant blue economy private sector (see opportunity 11 below).

⇒ **Needs**

In order to work, a blue incubator would require substantial buy-in from the key stakeholders, particularly the MEF in order to secure potential tax benefits to participating in the incubator (if possible).

The incubator would benefit from, but isn't strictly reliant upon, reforms to doing business in Mozambique. Given the opportunities presented by the incubator for entrepreneurs to establish blue economy businesses, reducing red tape and costs associated with establishing a business in Mozambique (World Bank, 2020) would be highly beneficial to the long-term success and positive impact of the incubator.

The incubator is reliant on the upfront existence of sufficient data and information necessary to develop and validate innovations in the blue economy – for example, data on fisheries catch, renewable energy potential, market demand for different kinds of products, etc. While UEM, the CTA and MEF hold some of this data that it may be possible to pool through the incubator,

access to information is key to the success of a blue incubator. Ensuring the institutions working together in the context of the incubator are able to collaborate effectively will also be important to success.

Similarly, the project requires a sufficiently large pool of candidates from which to select incubator members; at present it is unclear whether sufficient numbers of potential entrepreneurs exist to populate an incubator.

⇒ **Stakeholders**

ProAzul, UEM, MEF, CTA, Ministry of Science and Technology

⇒ **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Provides opportunities for Mozambique's entrepreneurial community to develop with a focus on the blue economy	Does not address more fundamental doing business challenges in-country	May be able to leverage CSR money from existing investors in the blue economy in Mozambique for the cluster	Viability of project may be undermined if informal sector continues to offer a more appealing route for entrepreneurs
Provides a means of ensuring new businesses are part of the formal economy from the outset through MEF involvement	Reliant on nexus effects from cities, likely Maputo in the first instance, thus removed from rural environments – does not directly address rural development needs	Potential to bring in additional funders/development partners to expand scope and/or scale (e.g. BIOFUND, development partners). Could roll out to additional locations with funding	There may not be sufficient entrepreneurs for the cluster to get off the ground
Has buy-in from the ground up – a Mozambican initiative for Mozambicans	Reliant on buy-in from MEF to support with tax benefits	May be opportunities to forge international linkages and partnerships with other clusters/incubators (e.g. Icelandic cluster) to build Mozambique's international presence on blue economy development	Lack of underlying skills and education in the population may limit upfront ideation/development of viable projects for inclusion in the programme
Relatively low capital requirement from ProAzul and other potential partners	Relatively high technical and operational requirements – will need dedicated personnel and time with mentors/experts	Could capture and leverage CTA enthusiasm for developing the blue economy and offer means to develop new business through existing CTA structures (annual meetings)	
Harnesses entrepreneurial creativity which may be directed towards multiple blue economy sectors	Reliant on ProAzul being able to invest seed capital	Potential to bring in existing investors as mentors for Mozambican entrepreneurs (e.g. Aqua-spark)	

3. Aquaculture for food security and job creation

⇒ **Brief outline**

Fish protein is an important component of the diet and protein intake of Mozambicans especially in coastal regions. Mozambique per capita consumption of fish products was estimated to be about 11.4 kg in 2016 (FAO 2019). Recent estimates of total fish production (capture fisheries and aquaculture) however show that the total production is not sufficient to cover domestic demand and as a result the country imports fish (mostly horse Mackerel) from neighbouring countries. In 2019, the aquaculture production was 3.771 tons, representing about 1% of the total fish production combined (over 420 000 tons), with 93% for domestic purpose and 7% for exports. (MIMAIP, 2019).⁸⁴ Most of the aquaculture sector consists of small, low productivity, subsistence farming operations mostly fish and seagrasses, with few large-scale commercial caged farming operation (e.g. the Chicoa farm in Lake Cahora Bassa farming the introduced Nile tilapia). A shrimp (*Panaeus*) aquaculture sector collapsed due to disease and has not yet recovered (see FAO 2020).

The government released in 2020 a strategy for the development of sustainable aquaculture (decree 55/2020) to boost aquaculture production for domestic food security and for job creation of rural populations. The strategy has identified large areas suitable for both coastal and inland aquaculture. The strategy focused on building the productive capacity of small farmers, attracting young entrepreneurs and women through access to affordable finance, encouraging private sector investment in commercial aquaculture and developing marketing strategies for aquaculture products domestically and for exports. The sector is currently regulated under the decree for aquaculture (35/2001), which includes the issuing and renewal of licenses, condition of operation, as well as fees and fines for non-compliance. Investment to date has been a combination of public investment in small poverty reduction related projects mainly by international donors and partners and private sector investment (e.g. Aqua-Spark, China) in commercial operations.

⇒ **Approach**

Given this context, the development of the sector would benefit from a combination of public investment from MDBs, development partners and proceeds and CSR from extractive industries to:

- update the regulatory framework (2001 decree) to incorporate sustainability measures as conditions of license issuance and renewal, such as environmental impact assessment and monitoring plan (water quality, disease control, invasive species etc) and include a requirement for regulator audits for commercial operations⁸⁵ and
- build implementation capabilities through registration of licenses, training or accessing qualified personnel;
- Ensure that sector development is consistent with the provisions of the PNDT and POEM, noting that the 2001 decree includes a provision which prevents the destruction of mangrove for aquaculture purposes
- Improve access to land and finance by small scale aquaculture ventures, by scaling up models such as IFAD PRODAPE and other proven initiatives in the SADC region
- facilitating locally based aquaculture cooperatives of small operators and cooperation with private sector ventures for marketing aquaculture products in domestic markets, including demand management (domestic market prefers saltwater fish)
- Developing or accessing R&D capability for aquaculture (brood stock hatchery, feed, disease control biosecurity) and training opportunities for SMEs ⁸⁶ using the technical

⁸⁴ Government of Mozambique (2020). Strategy for the Development of aquaculture

⁸⁵ The South Africa aquaculture Development bill (2018) is a useful example to consider

⁸⁶ SADC Regional Aquaculture Strategy & Action Plan (2016-2066) &Regional Aquatic Animal Health Strategy (2016-2026)

expertise available at the University of Mondlane and taking advantage of the SADC Regional Aquaculture strategy and action plan & regional aquatic animal health strategy (2016-2026).

Encourage private investment through FDI or PPP, in large aquaculture ventures by

- ensuring a favourable business environment, access to land, certainty of regulation and administrative efficiency.
- Investigating options for high value aquaculture (pearl in the northern region) for export markets, mindful of the market opportunities and barriers (including lessons learnt from the shrimp experience) and
- encouraging ecolabelling of commercial ventures for exports⁸⁷ including to the European market

The benefits of a sustainable and well managed aquaculture sector would be a reduction of reliance on capture fisheries for food security and reduction of overfishing, diversification of rural incomes, including women and youth, and a formalisation and professionalisation of the sector. Return on investment would be through taxes, license fees and export earnings from commercial ventures (if deemed feasible).

- **Needs**
- An amended legal framework specifying sustainability measures as licences conditions, with monitoring and reporting and implementation capacity (e.g. e-registration)
- Effective implementation coordination through MIMAIP/ProAzul with relevant Ministries and associated funds at central and local levels
- A suitable business environment for private sector engagement including access to land, power (e.g. Off-grid solar) and finance and financing tools for small scale and commercial ventures
- Participation of aquaculture actors in the PNDD and POEM processes to address potential conflicts
- R&D capacity for improving productivity and sustainability (e.g. selection of species husbandry, biosecurity, feed sources, disease control and environmental monitoring)
- A professionalised aquaculture sector through technical training, associations, and registration
- **Stakeholders**

MIMAIP, ProAzul, National Institute of fisheries, University of Eduardo Mondlane, MEF, MIC, MIREME, MITA, MADER, Regional partners and SADC.

⁸⁷ The Aquaculture Stewardship Council provides certification, which could be considered.

- **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Improve productivity of small-scale aquaculture sector	Currently Small-scale low productivity sector	Scaling up of existing initiatives (e.g. Chicoa, PRODAPE)	Cyclones (for coastal operations)
	Availability of hatchery and feed		
Proposal to update the regulatory framework for sustainable and profitable sector	Administrative capacity Investment Risk profile	SADC/ZA models PNDD/POEM 2020 aquaculture Strategy	Land use conflicts
	Environmental Impact Assessment Regulation 2015 (decree 54/2015) for aquaculture farms over 100t per year implementation?		
	Uncertain business environment for private sector engagement Doing business reforms	IFAD-supported Rural Enterprise Finance Project	
Exploration of potential high value export market (e.g. pearl)		Export Market Ecolabelling, MSC aquaculture	
Professionalisation of small-scale sector Skill development (animal health & business and marketing etc)	Current Lack of a skilled workforce (animal health) and low licence registration	CTA as an umbrella organisation e- registration for small scale fisheries can be extended to aquaculture sector	
R&D capability production systems	Availability of local feed and brood stock Weak environmental measures for aquaculture	University of Mondlane technical capacity (School of Marine and Coastal Sciences and teaches on the University's BSc program in Marine Biology and the MSc in Sustainable Aquaculture	Disease control (e.g. shrimp aquaculture collapse) Invasive and introduced species, hybridisation

4. Developing innovative tools for sustainable fisheries management

- **Brief outline**

A major focus of the country development agenda is a diversified and inclusive economic growth (National Development Strategy 2015-2035). With 70% of the population of Mozambique being in rural areas, and engaged in small scale agriculture and fisheries (AfDB 2018), identifying investment opportunities to improve fisheries sustainability, provide job opportunities and generate better returns from small scale fisheries makes sense. Although fisheries overall only represent a contribution of 2% to the GDP it is of critical social importance for food security with small scale fishing contributing 90% of the total catch (WB 2020).

Mozambique small scale fisheries is currently largely unregulated and open access with limited control measures for effort other than a license, with less than 50% licenses currently licensed (IOTC 2019). There is also evidence of overfishing and destructive fishing practices

(mosquito nets), limited enforcement capability and knowledge of the status of fish stocks (See FAO programme). Furthermore, Mozambique's ability to control illegal fishing and ensure compliance to management measures is limited.

The use of mobile phone apps for logging of catch data and drone technology could offer cost effective tools to empower local fishing communities to manage their fisheries sustainably and more profitably. Mobile phone app daily recorded catches logged and analysed in a central database could provide the necessary data for fishers to monitor their catches and inform fisheries management decisions. These technologies are successfully implemented in inshore small fisheries in other countries.⁸⁸ Similarly, light drone technology provides an additional cost-effective tool to monitor compliance to management measures and address illegal fishing, which according to the Mozambique government cost up to US\$60 million a year. Those technologies have been used successfully in island countries such as Belize and Seychelles⁸⁹

The introduction of such technologies in Mozambique's small-scale fisheries could support efforts at reducing overfishing and securing compliance to management measures such as the introduction of TURF access rights currently being piloted with financial support from the World Bank (WB SWIOFISH, 2018) and have been promoted by WWF, RARE. It would also improve fishers' ability to plan and manage their operations thus increasing efficiency and revenue. An added value would be to reduce by catch, especially sharks which are mostly caught by artisanal fishers (IOTC 2018). Furthermore, combined with digital registration of licences and mobile payments, they could contribute to formalising the small scale fisheries sector. (see investment opportunity 11).

Routine data collection on artisanal fisheries is now being conducted through sampling based on OPENARTFISH, with an app developed to do this electronically, which still needs to be fully operationalized. There is also previous experiences in Mozambique with apps for fisheries to log catch data, particularly with the NGO RARE and the implementation of OurFish. However, to date, the data collected have not been logged and analysed in a central database with a user-friendly interface, which has limited their usefulness. ProAzul has already developed and trialed an in-house application for fisheries registration and licensing, which includes mobile payment option. First pilots are ongoing and seems to be working. Scaling up those initiatives could provide ProAzul with a quick win.

Further, Investing in a community-based ranger programme, trained in the use of mobile app and drone technology could provide enforcement capacity as well being an educational tool for sustainable fisheries. Such a programme could manage by local fishing councils with the government and or NGO technical and analytical support of IDEPA or ADNAP.

- **Approach**

Mozambique mobile network is extensive with over 14 million subscribers (INE 2018) making a mobile catch data recording technology possible. Off the Shelf application may be customized, with international partners such as UK or WCS both already operating in Mozambique and in collaboration with a private partner. The proposed blue economy incubator (see above opportunity) could attract potential entrepreneurs in the development of the app suitable to the Mozambique context in partnership with national institutions, and international experts. Existing data logging app and digital registration tools could be refined and early trials scaled up. The Institute for Fisheries Research (IIP) or ADNAP could possibly

⁸⁸ The UK Marine Management Organization's (MMO) new digital catch recording app is an example of the application of such technology for less than 10 metre fishing fleets <https://www.gov.uk/government/news/registrations-and-records-submitted-through-the-mmos-electronic-catch-recording-app-continue-to-increase>

⁸⁹ Belize in partnership with WCS and Conservation Drones, a privately-owned company, successfully used drones to monitor their reef and illegal fishing activities (National Geographic 2018). GRID-Arendal's fishguard project, a public private partnership implemented in Seychelles is another example (Otlowski 2020).

host and manage the database and provide analytical services with the university providing environmental and climate data.

Registered fishers would have access to the data and analyses through user friendly interfaces. This would provide an incentive to register as a small business, and hence help formalizing the sector. Following a pilot programme financed by international development partners or from extractive industries revenue, the use of the app and purchase and provision of drone services could provide business and job opportunities, including applications beyond fisheries.

From the financing point of view, success would depend on seed funding from MDBs bilateral development partners to ensure the right environment is in place and assess the feasibility of developing and implementing the technologies in Mozambique. Public/private partnerships with private providers of the technologies and support from local NGOs with in-country experience of the application of such technologies to small-scale fisheries could be considered. It could be included in the proceeds of a debt restructure, assuming fiscal space) with ProAzul being a recipient of part of the proceeds as coordinating implementation and uptake through competitive grants. BIOFUND could contribute seed funding for a community-based ranger programme. The purchasing of drones ranges from US\$ 150 000 upward and license to operate the App could also be financed by LNG proceeds (as compensation/offset for impacts under the offset strategy) and then a fee from fishers as the main beneficiaries of the technologies. Return on investment would accrue to government revenue in taxes, as fishers are encouraged to register to benefit from increased CPUE as they become more efficient and IUU is reduced. Drone technology has multiple applications besides IUU and can also be applied to monitoring of MPAs, wildlife conservation and tourism safety. Providing services on a cost recovery basis for other purposes could be considered. The return on investment would be as government revenue from taxes and fees as well as exports following decreased IUU, which could be significant.

- **Needs**

In order to consider these technologies, it would be necessary to first formalise the small-scale fisheries management regime, including access rights, effort, bag limits and size limits for the species caught building on the work underway through SWIOFISH funded by the World Bank. Second, close government coordination between MIMAIP, ProAzul, ADNAP, DEPI, IDEPA and the University as technical institutions, and including delegations at the district level to empower co-managements institutional arrangements to implement management measures. Third, building ownership and capacity through training and exposure of the benefits of similar programmes with fishers, a role a community ranger programme could perform.

- **Stakeholders**

MIMAIP, ProAzul, MEF, IDPE, ADNAP DEPI, BIOFUND, WCS, Private partners, UK, WB, MDB, University of Eduardo Mondlane, local Fisheries Councils, fisheries associations, CTA, coast guard.

- **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Cost effective, readily available and tested technologies	Uncertainty about the management of the fisheries (access, catch limits)	The WB SWIOFISH programme on TURF and management planning	Political instability in the northern province
Existing fisheries science capacity	Extent of government coordination and delegation at the district level	FAO has initiated a program for assessing artisanal catch and stocks based on landings	The status quo may be preferred
Build on existing initiatives (Pro Azul, RARE and others)	No centralised data collection and analysis	Experience of international partners	
Strong mobile network penetration	Penetration of the internet in remote rural areas	International partnerships	Impacts of natural hazards
Complement MCS strategies	Level of skills needed to operate apps	Willingness to invest despite hidden debt crisis	Impacts of Covid-19 on international donor funding and budget allocations
Transparency and accountability	Lack of a small-scale fisheries association/speaking with one voice	Leveraging LNG sovereign wealth Fund proceeds	
Can incentivize formalizing the SSF sector, especially if paired with an insurance scheme for fishers against natural hazards (COAST)	Rely on MDB seed funding	Link to a blue cluster	
Regional profile		POEM PNDD implementation	

5. Marketing Mozambique as a tourism destination

- **Brief outline**

Tourism is poorly developed in Mozambique, yet its potential is high as a result of its quality cultural and natural heritage. Mozambique ranked 127th of 140 countries for overall competitiveness as a destination according to the World Economic Forum. Although Mozambique has outstanding natural and cultural assets, its tourism sector has been underperforming in part because tourism facilities and access to services are poor and its branding and marketing strategy is unclear.

The World Travel and Tourism Council (WTTC 2018) estimates that the tourism sector's direct contribution to the Mozambican economy was 3.2% of GDP generated exports amounting to 3.6% of the country's total exports. In 2017, the travel and tourism sector provided approximately 271,000 direct jobs in Mozambique, representing 2.8% of the country's total employment (WTTC, 2019). In 2017, of its 2.8 million international visitors, approximately 80% (of overnight and same-day visitors) came from within Africa (UNWTO, 2018). Self-catering and lower spending leisure visitors from neighbouring countries (mainly South Africa)

comprise the bulk of leisure tourism arrivals (World Bank, 2020) although some of its best coastal natural attractions may be in the Cabo Delgado province, a region of political instability. Opportunities to grow the sector sustainably include exploring attracting large international tourism companies and investigating the feasibility of cruise tourism taking advantage of Mozambique ports facilities⁹⁰.

The Government strategic plan for the Development of Tourism in Mozambique (SPDM II 2015-2035) aims to position Mozambique as a world class tourism destination, create employment, develop a sustainable tourism, conserve biodiversity, preserve cultural values and pride, and enhance the quality of life of Mozambicans. Five years on, the plan has yet to be implemented, in part because of a lack of dedicated finance and in part because a lack of clarity on strategic directions, and in part as a result of several government restructurings. Despite its promise, tourism development to date has been constrained by poor access to air and road, as well as difficult access to finance and utilities, visa conditions and an undiversified tourism product base.

A marketing strategy to promote and diversify of the sector should:

- Identify opportunities for establishing/strengthening initiatives in areas of high value (coral reefs, beaches, MPA, wildlife, fishing, special tourism zones etc.) with connectivity (airline, transport) and access to utilities (water, electricity, telecom, waste facilities, food supply, health and safety) and easier visa conditions (e- visa)
- Encourage the development and marketing of sustainable marine and coastal tourism products and branding of Mozambique (nature-based tourism, cruise industry?) both domestic and international, based on international sustainability criteria (energy, waste, CSR) in the context of existing regional tourism particularly in the Maputo region
- Training (business skills, management, environment, entrepreneurship)
- Explore interest from large tourism franchises (see Seychelles tourism model)⁹¹ and cruise sector taking advantage of existing port facilities.
- Develop tourism statistics capability on visitors, accommodation types, market segmentation, expenditure, revenue and investment.

- **Approach**

Developing and implementing an effective marine based tourism sector would require public investment to review the legal, policy and business environment to attract private foreign investment (FDI) facilitate MSME investment and build a quality local tourism infrastructure for Mozambique to become a competitive destination in the region. Sources of seed public finance could include MDBs ODA concessional loans, philanthropic grants to support policy reforms and setting up priority actions and institutional arrangements for implementation, monitoring and review. Domestic finance could come from debt restructuring process (if feasible), tourism taxes and fees, leveraging extractive industries revenue, to be disbursed through a Tourism Fund.

Private sector investment (DFI, PPP, CSR) could be considered to expend on large high-end tourism opportunities such as port cruise ships facilities and joint Resort ventures. For large infrastructure investment, PPP could be considered (ports, coastal and island resorts, utilities provision) building on existing infrastructure programmes in particular for transport and utilities. Investing in small scale MSMEs nature-based ecotourism ventures could be financed as part of a debt restructure proceeds through competitive grants, philanthropic funding or through access to subsidized loans, combined with an accreditation process to ensure standards are met. MSMEs Competitive grants/small concessional loans for eligible activities

⁹⁰ It should be noted that the impact of the Covid-19 pandemic on global travel and tourism will likely have a significant impact on Mozambique's tourism development opportunities which have not been accounted for here

⁹¹ Seychelles recently Tourism Master Plan destination 2023.

http://www.tourism.gov.sc/lib/TOURISM_MASTER_PLAN_PART_2_TOURISM_SECTOR_STRATEGY_DESTINATION_2023 [accessed 27 July 2020]

could be considered for refurbishing of small operations to meet sustainability standards and develop tourism products and to engender a culture of entrepreneurship and competitiveness (see Seychelles Conservation and Climate Adaptation Trust SeyCCAT model).

Technical capacity and expertise could be found with NGOs (BIOFUND) for hospitality upskilling and nature-based destination management and interpretation. As for others MSMEs, incentives for business registration and licensing could be considered. Return on investment from tourism fees, accommodation revenue/taxes and utility services fees to be re-invested in the management of the sector including reviews, data collection and analysis of visitor surveys, development and maintenance of natural and cultural assets.

Such an approach could also be merged with a broader, integrated economic development opportunity such as the one for Sofala Bank and the central coast listed further below (opportunity 10).

- **Needs**

The harmonizing of Mozambique tourism policy statements, planning guidelines and regulations and taking stock of implementation to date and develop a consistent monitoring system and review process. A review of conditions of access to land, and compliance mechanisms for access to land and siting of tourism development including approval processes and EIA (including impacts of climate change) for tourism development, consistent with the provisions of the PNDT and PEOM. Clarification is needed on the respective mandates and responsibilities for the implementation of Mozambique tourism plan and transparency of financial flows between MEF, MITADER, FNDS, MICULTUR, ANAC and MIMAIP/ProAzul, including between central, provincial district levels.

The IT and technical capability of the Ministry of Tourism and the Institute of National Statistics to collect and analyse accurate and regular tourism statistics would be essential for future planning and for marketing Mozambique as a destination.

The proliferation of poorly regulated sub-standard small-scale tourism facilities requires urgent review of approval processes and licensing regime, registration and compliance to standards.

MSME policy reform again would be essential to facilitate access to land, credit and utilities and encourage investment in local tourism businesses. A review/streamlining of the licensing system and regulations, permissions and permit conditions would be required for small accommodation and services providers to ensure standards and licensing conditions, renewal, compliance are met. E-registration of tourism operations, with incentives such as tax rebates, access to finance or to land or insurance, combined with vocational training in business skills, hospitality professions, marketing cultural and natural interpretation would facilitate the professionalization of the sector and inclusion into the taxation system. The CTA and association of travel and tourism operators can provide support and a voice for the sector. Regulations should be considered to ensure revenue from tourism fees are reallocated to destination management particularly in the case of nature-based tourism. A ranger programme could be considered in coastal and marine protected areas.

Given the importance of smoothly transporting tourists to and from destinations and the expectation of readily available power, for tourism development outside the urban centres, upfront investment in both roads and electrification is required. For areas further away from transport hubs, longer-term investment in airport infrastructure may also be considered to maximise the potential influx of tourists.

- **Stakeholders**

National: Government (national, provincial/district); Ministry of tourism and culture; Ministry of Transport and communication, Ministry of Energy and Mineral Resources, Ministry of Industry and Commerce; Ministry of Economy and Finance; NGOs, local communities associations, CTA, Association of Travel and Tourism Operators,
International: International tourism corporations. Tourism association, World Tourism Council, IATA, Global Sustainable Tourism Council.

- **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Attractive natural and cultural features including parks and reserves		High Potential for nature-based tourism	Political instability in the north where key attractions are located
Enhance the conservation of natural and cultural heritage develop an ocean stewardship culture	Poor compliance to protection land heritage laws? Designation of marine and coastal protected areas	Marine science capacity at the university High biodiversity of the Mozambique channel (World heritage nomination?)	Impacts of climate change and external shocks
Generate local job opportunities including for women and youth In hospitality services and natural and cultural heritage management	Poorly skills labour force and entrepreneurship	Vocational training and destination management and hospitality. NGO Expertise in nature-based destination Marine cluster? Marine science	Short-term demand shocks from Covid-19 impact
Development and monitoring of standards for accommodation and destination management as a marketing tool (possibility of accreditation?)	Poor tourism infrastructure Small poorly regulated tourism operations Poor access to access utilities	Existing successful tourism models in the region to learn from Port infrastructure could accommodate small cruise industry Off grid solar	Impacts of offshore and coastal development on tourism destination coastal and marine environment
Generate exports earnings	Unclear mandates, financial flows and institutional coordination for tourism development and regulation across government	The newly established Sea Council chaired by the president may provide impetus for streamlining current mandates and regulations and reviewing governance arrangements and financing mechanisms	
Marketing strategies	Accurate and up to date statistics		
	Business environment (FDI and MSME) not conducive to private investment Investor confidence	MSME reform, taxation reform, foreign ownership reform,	
Priority investment for tourism zones	Access to land restricted	PNDT and POEM	

6. Investment opportunities in fisheries sector diversification

• **Brief outline**

With most fish stocks both artisanal and semi artisanal fisheries being fully exploited or overfished, and access to the resources and effort being increasingly regulated, investment opportunities will depend on diversification of the sector as well as alternatives forms of employment. There is an opportunity for increased value-added if a growth in professionalism is combined with the control on the number of people in fisheries, losses are reduced, and market access is increased (World Bank 2020).

Encouraging sector diversification and alternatives employment/private sector investment opportunities within or outside the sector could focus on fish value chains processing plants (smoking, salting, freezing) facilities, extraction of high value products from fish waste/by catch for pharmaceuticals (e.g. Omega 3) to reduce post-harvest losses (estimated at 25%, SWIOFISH 2018), diversifying services to the sector (boat maintenance, construction, resource management, compliance, monitoring) and better access to markets locally or regionally (e.g. tourism, megaprojects, regional trade), taking advantage of ports rail corridors and the newly established maritime cabotage route linking the 3 ports, or shifting from wild caught fisheries to small sustainable Aquaculture development.

The Netherlands-based Aqua-spark venture in the Zambezi region (Chicoa Fish Farm) provides an example whereby foreign investment in a small-scale aquaculture project has catalysed a local shift from wild caught fishing to small-scale aquaculture investment and facilitated better access to markets. Similarly, a Vale CSR funded fisheries project in the northern region has created a reliable market for fisheries products, and subsidized rail passenger transport along the Nacala corridor facilitating local trade. Such private sector driven initiatives provide models for incremental change, as achieving transformational change takes commitment, innovation, time and resources. These can be scaled up through peer-to-peer learning and training building local skills and capacity. Importantly, in both those cases the overwhelming constraints has been the lack of access to affordable credit ahead of limited infrastructure.

• **Approach**

Initial MDB/bilateral finance, or LNG sovereign fund proceeds, funding allocation to ProAzul could help build the necessary collaborations with local fishers, private sector and expertise and help coordinate across government (MEF, Ministry of commerce and industry, Ministry of Transport, MIMAIP) to assess the potential for post-harvest and servicing opportunities, including policy reform (see MSMEs section, opportunity 12) and infrastructure needs. PPP could be considered for the establishment of cold facilities, access to markets, provision of energy (e.g. off-grid solar would be an option in many remote coastal areas). A critical success factor would be the professionalizing the small-scale fishing and associated activities sector to take on those opportunities. Strategies to consider include establishing/strengthening fisheries cooperatives (regional, national) and representation in district to national policy platforms through CTA or other platforms (there is an IOR small scale fisheries association that could help); peer to peer training on post-harvest and services opportunities and encouraging full registration (and mobile tax payment) of fishing operations by providing access to parametric insurance against disasters (based on the “Caribbean Oceans and Aquaculture Sustainability Facility (COAST), time bound or performance based tax rebate and access to subsidized bank loans or microfinance. Thanks to the formalization of the sector, revenue generated would be through sales, taxes and access fees and rental of premises etc. Such an approach could also be merged with a broader, integrated economic development opportunity such as the one for Sofala Bank and the central coast listed further below (opportunity 10).

- **Needs**

A combination of policy reforms (e.g. MSMEs, tax reform) whole of government coordination, administrative financial management capacity, and consideration of incentives measures and up skilling and R&D to facilitate greater diversification would be necessary:

MSME doing business policy reform to improve better access to credit and utilities combined with a legal framework for the management of the fisheries which ensure the long-term sustainability of fish stocks and certainty of supply as core to a diversified sector.

Effective coordination through MIMAIP (policy) and ProAzul (blue financial, operational) across government in particular the ministry of finance, the bank of Mozambique, the Ministry of Industry and Commerce responsible for MSME policy reform, and with private investors and insurance providers.

Government administrative financial management capacity (e.g. e- registry of fisheries operations, availability of mobile payments for taxes and fees, monitoring compliance and consistency with planning requirements. Transparency of financial flows between various ministries, provincial and district level institutions, including MIMAIP, ProAzul and other relevant institutions.

The feasibility of an Incentive scheme to retire excess fishing effort and facilitate a transition to other aspects of the sector to be funded by LNG megaprojects revenue, or possibly as part of a debt restructure.

R&D in new technologies for fish processing, biotechnology, seafood marketing and business training and entrepreneurship and start up (see blue cluster) or new ventures focusing on women and youth.

- **Stakeholders**

MIMAIP, ProAzul, MEF, IDEPA, ADNAP DEPI, Sovereign fund Private partners, WB, MDB, NGOs, fisheries associations. CTA. Bank of Mozambique.



- **SWOT analysis**

Strengths	Weaknesses	Opportunity	Threats
Addresses overfishing and employment needs	Highly dependent on closing access to the fisheries and incentives to retire effort and promote alternatives	Small scale aquaculture already developing Aquaculture strategy Local content bill requiring local employment	Natural hazards and Covid-19
Professionalization of the sector through professional associations and Cooperatives Representation at government policy Could provide new opportunities for Women and youth in villages	Dependent on local social cohesion and entrepreneurship Dependent on R&D availability Availability of relevant skills	Access to Blue economy incubator to attract Entrepreneurs CTA representation in regions and centrally.	Lack of skills and education to take advantage of opportunities Blue cluster will not attract sufficient applicants
Development of an MSME sector in rural regions Mainstream the use of insurance as an incentive for formalization of the sector	Local investment constrained by access to affordable credit, land and utilities (energy)	IFAD ProDAPE to access credit for aquaculture development could be used for other ventures PNDDT near completion will determine access to land Off grid solar roll out as source of power Existing rail/ports cabotage route Megaprojects CSR and LNG sovereign fund as a source of domestic finance	Willingness/ability to reform doing business Lack of diversified financial products and insurance products
Strengthen government e-capacity to raise tax revenue	Require good collaboration between government institutions	Market opportunities for processed fish products (tourism, megaprojects, regional)	Informality may be more attractive locals

7. Green port development

- **Brief outline**

Mozambique features three primary container ports along its extensive coast, Nacala in the north, Beira along the central coast and Maputo in the south. These ports serve as primary gateways for the import and export of goods, including agricultural products and coal, not only for Mozambique but also its extensive hinterland of landlocked countries⁹², which rely on rail connections to Mozambique's coast for their trade and which are part of SADC regional agreements. The Port of Maputo sees the most vessel movements, followed by Nacala and Beira, though Beira remains the largest port for containerised traffic in the country (TPF & Biodesign, 2020). Annual growth in Mozambique's ports over the past decade has amounted to approximately 15.5%, due in part to entry into operation of the new port of Nacala-a-Velha in 2016. Before Covid-19, growth potential was anticipated to remain high, closely linked to the development of agribusiness and the recent reintroduction of marine cabotage to Mozambique (Club of Mozambique, 2019).

⁹² Notably Malawi, Zimbabwe, Botswana and Zambia

While Mozambique's main ports are fully operational, there are substantial opportunities both to expand Mozambique's port infrastructure (notably in the context of new terminals to service the offshore LNG investments in Cabo Delgado and Nampula) as well as to make existing port infrastructure greener. It is this latter set of opportunities that will be the focus of this chapter.

Ports play a role in their local environment beyond their operational functions, acting in many instances as landlord, regulator and community manager (Acciaro et al, 2014). Green ports have become an area of focus for sustainability and reducing emissions relatively recently, and literature regarding green port development is largely focused on developed economies and the world's largest ports (Acciaro et al, 2014; Berqvist & Monios, 2019). Nevertheless, a number of approaches to greening port infrastructure are highly relevant to Mozambique.

Among these are developing refuelling facilities for LNG-fuelled vessels; cold ironing opportunities based on renewable energy generation and ensuring effective waste management (in terms of both wastewater and hull fouling) infrastructure is in place at Mozambique's three key ports.

Port refuelling services offering LNG rather than marine fuel oil or similar alternatives would contribute significantly to emissions reductions, and contribute to overcoming the main barrier to global uptake of LNG as a fuel source for merchant vessels, which is the lack of refuelling locations (Berqvist & Monios, 2019). Given the presence of LNG fields in Mozambique and recent efforts to develop this industry, a domestic supply of fuel would be readily available, keeping costs down. Alternative fuels, including biofuels and hydrogen also being considered worldwide for shipping, but these are in their infancy and likely not practical for Mozambique.

Cold ironing is the process whereby ships at berth connect to shore side electricity rather than running their own generators in order to provide power. Its efficacy in terms of emission reduction depends on the proportion of renewable energy generation in that country, so countries with less environmentally friendly electricity production will simply be transferring emissions elsewhere (Berqvist & Monios, 2019). The existing barriers to implementation of cold ironing are the expense of installation and the fact that each vessel must also install the connecting technology on board, which they will only do if they are likely to use it frequently (Innes and Monios, 2018). However, feasibility studies based on the relatively small port of Aberdeen have shown cold ironing to be viable for smaller ports (ibid) such as those found in Mozambique, and in combination with terrestrial renewable electricity generation may represent significant CO₂ reductions as well as cost savings for berthed vessels.

Additionally, some ports around the world have implemented various indices to incentivise greener vessels by offering discounts on port dues to carriers calling at their ports according to certain criteria. This is an indirect way to influence the environmental performance of vessels at sea, in addition to their actual emissions within the port area. For example, in Singapore the Green Port Programme (GPP) was announced on 1 Jul 2011 under the Maritime Singapore Green Initiative to quicken ocean-going ships calling at the Port of Singapore to reduce the emission of pollutants like sulphur oxides and nitrogen oxides. Under this programme, 15% concession in port dues were granted to those vessels that use certain specialised technologies or burn clean fuels with low sulphur content during their entire port stay within the port's limits.

Ports also increasingly implement environmental management systems (EMS) which are a systematic approach to manage a port's environmental programmes for pollution prevention, protection and control (Lam & Notteboom, 2014). EMS serves as a documented system to help organizations comply with environmental laws and prove their commitment to improve environmental performance. Antwerp, Rotterdam and Singapore adopted the ISO 14001 standard as the baseline for their EMS. Matters such as air quality, energy consumption,

waste, including wastewater, and transport have been included in the EMS. This may provide a helpful additional framework for Mozambique's ports and port-related legal frameworks to move towards best practice in sustainability matters.

- **Approach**

As much of the opportunity presented in this section builds on existing private sector services, significant scope for relatively straightforward private sector-led project finance exists, particularly in the context of LNG refuelling infrastructure and cold ironing. In the context of wider EMS or incentivisation of sustainability, blended finance opportunities may exist for government to work with the private sector for implementation. Here, existing legal frameworks, notably the Regulation for the Prevention of Pollution and Protection of the Marine and Coastal Environment (Decree 45/2006) provides for a set of instruments to finance the prevention and control of marine pollution, notably regarding tax on ship-generated waste (Article 10), with a view to covering the costs of using port reception facilities for ship-generated waste, including treatment and disposal (TPF & Biodesign, 2020).

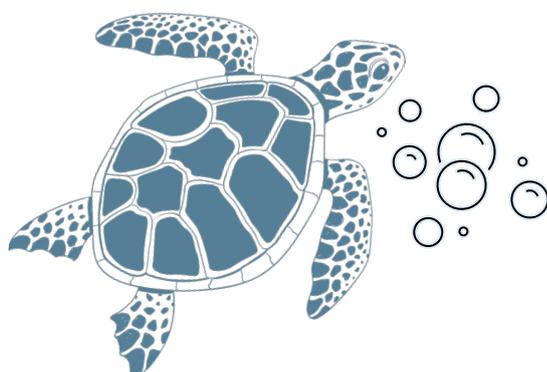
- **Needs**

Central to the success of this potential opportunity is sufficient demand for the more sustainable services that Mozambique's ports could offer. Thus, analysis of the existing rate of uptake of vessel cold ironing infrastructure as well as retrofitting to accept LNG as a fuel alternative, and comparative analysis of this uptake with vessels likely to use Mozambique's port infrastructure (as well as potential future use) is required.

From an investment standpoint, as for other opportunities presented in this chapter, improvements to the business climate in Mozambique and a reduction in (perceived) risk of investment in Mozambican infrastructure is required for success – in particular, assurances that the capital investment required to make infrastructure changes is likely to be repaid over an acceptable timeframe are key. While the Aberdeen case study of cold ironing in a smaller port is very helpful to assess viability in analogous ports in Mozambique, country-specific assessment would be necessary to determine feasibility.

- **Stakeholders**

Port Authorities, CFM, Ministry of the Sea, private investors (e.g. DP World, Port of Rotterdam, who have already invested in Maputo Port and Beira Port, respectively)



- **SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
Very commercially oriented project opportunity requiring minimal investment from government	Cold ironing or LNG as a fuel alternative reduces but does not eliminate emissions associated with ports and shipping	May be opportunities to leverage LNG investments in the country to develop uses for LNG in Mozambique's ports	Covid-19 impact on global economy and likely impact on global shipping may reduce attractiveness of port-related infrastructure investment in the short to medium term
Sustainability in ports is an emerging issue and investment would place Mozambique at the forefront of these efforts in the region	Does not address wider environmental impacts of ports in the immediate environment – though possible to integrate these considerations	Modernize environmental legislation, adopt investors national legislation	
Builds on existing port infrastructure and customer base, expanding service offering may make ports more attractive along global shipping lanes	Assumes sufficient capacity from existing maritime traffic to warrant investment in additional services		
Potential co-benefits from energy infrastructure for cold ironing could provide additional green energy to adjacent communities		Modernize environmental legislation, adopt investors national legislation	

8. Improving returns on industrial fisheries resources

- **Brief outline**

Two opportunities for large scale FDI investment include offshore caged aquaculture (check the aquaculture strategy) and improving foreign investment in post-harvest industrial tuna fisheries processing, provided tuna landed in Mozambique is competitive and land available for supporting facilities and there is in place a management regime to ensure the sustainability of the fishery. Aquaculture so far has focused on lake-based ventures, with mariculture still in early days⁹³.

With industrial IOTC fishing being below MSY (7583 t), consisting of 37% DWFN % domestic fleet with only 3% domestic tuna fleet (IOTC 2018), there is an opportunity to develop a management regime which better capture the returns from Tuna distant water fishing nations whilst at the same time ensuring the sustainability of tuna stocks. Previous attempts to build a national tuna fleet failed (hidden debt crisis). An alternative model based on the Pacific Parties to the Nauru Agreement (PNA)⁹⁴ experience could be considered. It is based on regulating access fees by Distant Water Fishing Nations (DWFNs) to tuna resources in their EEZ through a vessel day scheme to constrain and reduce catches of target tuna species, and increase the rate of return from fishing activities through access fees paid.

⁹³ The government has approved a new aquaculture strategy in June 2020 (decree 55/2020).

⁹⁴ <https://www.pnatuna.com>

The vessel day scheme allocates access to tuna resources to DWFNs based on the respective quotas of parties as determined by their respective EEZ and available stock information provided by the Western Central Pacific Fisheries Commission. This system has been successful in generating significant returns to those Pacific coastal states (internalizing the true value of the resource) and much safer revenue stream compared to establishing a national fleet which requires significant upfront investment, ongoing fleet costs, market access and high risks as was demonstrated by the hidden debt crisis of 2016.

There could be an opportunity to develop a regional approach engaging Mozambique channel coastal states (similar to the Pacific Parties to the Nauru Agreement (PNA) as a long-term investment opportunity which Mozambique could benefit most given its large EEZ and taking advantage of its port infrastructure.

- **Approach**

Political will and ability to drive a negotiated agreement with neighbouring coastal states would be essential to contemplate such a system. Assuming political agreement and feasibility, investment into the design of a customized vessel day scheme to the Mozambique channel circumstances would require technical and legal expertise to design a scheme, agreements with DWFNs, allocation of revenue to the parties and transparent use of the proceeds including for monitoring and compliance and IUU capabilities. It could be combined with the implementation of the POEM, once it is in place with synergies with the current MCS programme (See proposed investment opportunity in Ocean governance and maritime security).

Mozambique contribution to the initial investment to the feasibility and design of an agreement and supporting studies could come from a combination of domestic revenue (the LNG sovereign fund or government revenue from the use of the sea fee or existing licenses) and MDB/EU/ODA concessional loans. Long term returns would come from increased value of the tuna licenses, taxes, port fees and services.

- **Needs**

Regional Cooperation and a legal instrument between coastal states are essential to this investment opportunity to avoid unnecessary competition between neighbouring countries and regions and DWFN cherry picking.

- **Stakeholders**

IOTC, coastal states, MIMAIP, MEF, existing DWFN tuna fleet. Ports Authority
Ministry of transport,

- **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Secure long-term revenue which could balance extractives revenues and avoid Dutch Disease	Depend on the strength of geopolitics	If well planned and implemented could provide a significant contribution to GDP	Conflicts within and between coastal states Piracy and other illegal activities
IOTC stock assessment data availability. Listing of IUU vessels Tuna stocks only fished by DWFNs	Extent of Mozambique tuna fishing ground (comparative advantage? Status of MCS capability following hidden debt crisis?	Current catches below MSY Large EEZ and good ports facilities for servicing	Climate change impacts on distribution of tuna stocks
An existing model to learn from	Competition from other IOTC members (e.g. islands)		
Initial investment affordable		Existing ports and railway hubs for domestic regional markets Asia and EU markets	
Would local employment opportunities?	Skill shortage to take up opportunity (observer programme, associated land-based services	Regulation for landing catches in Mozambique? Local content bill would apply? Opportunities for a service sector at landing ports	Transshipments at sea
Security of entitlements for industry and sustainability		EU and Asia markets	
Self-interest of DWFNs in reporting on IUU		Could be combined with remote vessels movements monitoring (e.g. global fish watch)	EU IUU rules

9. Coastal and marine conservation and climate resilience

- **Brief outline**

Mozambique is vulnerable to the impacts of climate change, particularly in its low-lying regions along the central coast. Hurricanes Idai and Kenneth have clearly demonstrated the social and economic impact of extreme weather events faced by Mozambique (World Bank, 2019), predicted to get more severe through the 21st century as the impacts of climate change increase. However, this presents an opportunity through the development of a climate-resilient coastline and coastal communities, pairing conservation objectives with livelihood securities and coastal defence.

Within the context of the development of both the terrestrial and marine spatial plans for Mozambique (PNDT and POEM, respectively), and leveraging existing momentum through ANAC, WCS and BIOFUND to establish new marine protected areas, there is an opportunity for investment in conservation and resilience.

This opportunity manifests as a public sector investment in climate research and emergency planning, mapping vulnerability in coastal areas and investing in repair and recovery of nature-based infrastructure (for example mangrove restoration or coral reef repair) to build coastal

defences against storm surge. This, in combination with investment in remote buoys and other early warning infrastructure will enhance Mozambique's ability to prepare for extreme weather events and other natural hazards (such as tsunamis) while simultaneously offering potential sources of revenue associated with nature-based infrastructure.

Evidence suggests that nature-based infrastructure can provide ecosystem services and added livelihood benefits for local communities at lower overall long-term cost than provided by traditional, man-made (or 'grey') coastal infrastructure due to the inherent value of natural systems, reduced maintenance costs and potential economic benefits of ancillary economic activity (Nayaran et al, 2016; Sutton-Grier et al, 2018). There may be significant opportunities for Mozambique to explore the restoration of coastal ecosystems with proven defensive capabilities that enhance the resilience of the coastline, such as mangroves, dunes and coral reefs.

For example, the designation of a protected area around a mangrove forest will not only provide a vital protective ecosystem service through coastal defence from flooding, the role of the mangroves as nursery grounds for fisheries as well as a potential 'blue carbon' sink for atmospheric CO₂ provides additional revenue opportunities through enhanced fisheries productivity as well as opportunities to develop blue carbon credit systems. There is also a prominent role for tourism in the context of visiting coral reefs, and revenue potential through charging access fees to reefs situated within protected areas.

Note that this opportunity may also form a part of the wider integrated approach to development of the central coast and Sofala Bank outlined further below (opportunity 10).

- **Approach**

Given the ecosystem services provided through conservation and an emphasis on resilience, investment in this opportunity would focus largely on public, philanthropic and donor capital to establish the conservation measures needed to secure the health of marine ecosystems. However, given the secondary benefits from conservation on established blue economy sectors such as fishing and tourism, there are potential linkages to private sector investment through long-term approaches to blending finance over time (Environmental Defense Fund and Duke University, 2018), whereby upfront governance costs are linked to future upside in revenue.

It may be possible to consider a debt swap (sometimes referred to as a debt conversion) of Mozambique's public debts to international creditors in exchange for greater conservation of Mozambique's marine and coastal environments. Based on the experience from the debt swap in the Seychelles, this would be an attractive mechanism to unlock greater working capital for conservation outcomes despite Mozambique's highly limited fiscal space. However, a debt swap is a lengthy process and requires political commitment at the highest level, and should not be perceived as a 'quick win' solution.

There may also be an opportunity to leverage and build upon existing work undertaken by BIOFUND and WCS regarding biodiversity offsets in the marine environment (WCS, 2020) and working with the private sector to direct capital towards the designation of new protected areas. Integrating this existing approach with a broader climate resilience narrative would provide an opportunity to amplify conservation efforts in Mozambique's marine environment.

Other potential instruments that may be applicable to this approach build on the work done in the Caribbean around coastal resilience through parametric insurance for reef conservation, an approach spearheaded along the meso-American reef in Mexico (TNC, 2019). Here, insurance premiums for coastal resilience are paid by local municipalities and the tourism sector into a trust fund that takes out a parametric insurance policy with a provider. The parametric insurance is designed in such a way that pay-out is automatically triggered by

environmental conditions (e.g. wind speed) and insurance money is partly allocated towards ongoing maintenance and repair of the coral reef system that provides defence against hurricane impact, thus lowering the cost of the insurance premium. A similar model may be possible to develop for Mozambique.

Such an approach could also be merged with a broader, integrated economic development opportunity such as the one for Sofala Bank and the central coast listed further below.

- **Needs**

Given the sub-national focus of this opportunity, it is reliant on having effective decentralisation of management authority to provincial and local governments. A clear need therefore is to ensure the existence of effective delegation of management authority from central ministries into the provinces and coastal regions of Mozambique. Closely related to this point, given the number of stakeholders involved with this process, notably the roles for both MIMAIP and MITA, there is a strong need for institutional coordination and well-defined mandates to enable smooth implementation. Capacity development, both at the central as well as the provincial and regional levels to build skills and ensure effective implementation will also be vital to success for a project of this nature.

In the event of a potential link with a debt conversion, a highly skilled intermediary would be required in order to broker the conversion between Mozambique and its debtors, able to address the needs and priorities of the debtors as well as navigate the complexity of Mozambican politics at a high level. Similarly, for success this will require high-level buy in from senior government officials in Mozambique to sign off on a conversion.

- **Stakeholders**

Community fisheries management councils, WCS, BIOFUND, Peace Parks Foundation, African Parks Foundation, MIMAIP, MITA, ANAC, Ministry of Public Works, Water Resources and Housing (MOPRHA), National Disaster Management Institute (INGC) provincial and local governments, private sector investors in coastal areas (Ports, O&G)

- **SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
Leverages existing activity focusing on MPA establishment and POEM/PNDT implementation	Heavily reliant on public investment, especially upfront, which is challenging given limited fiscal space	Entry by new private actors, notably in oil and gas into the Mozambican marine environment may provide opportunities to capture additional resources – e.g. through additional biodiversity offsets	Impact of Covid-19 on financial markets as well as national economy and society may jeopardise availability of capital
Integrated approach to coastal resilience and conservation captures multiple co-benefits and potential revenue streams (e.g. fisheries productivity, tourism value) in a single project	Due to data constraints, no clearly identifiable project opportunities at this stage	Establishment of sovereign wealth fund may provide additional source of public capital to deploy towards coastal resilience and conservation New Mangrove restoration and conservation decree	Further development of LNG poses a risk to conservation in the north of the country
Supports the achievement of Mozambique’s conservation targets for biodiversity and protected area coverage	Reliant on quantification of potential benefits from conservation to build business case – data limitations make this a challenge	Covid-19 global response may be sympathetic towards need to relieve debt burden in developing countries, which may be leveraged for a conversion opportunity	Political instability and insurgency in the north may reduce ability to guarantee positive impact of potential conservation projects
Aligns with donor priorities for conservation from multiple donor agencies	Current limitations in institutional coordination and effective delegation of management to regional government inhibits scope for effective coordination	Set-up a donor dialogue platform, similar to the ones for conservation and climate change	

(including AFD, KfW, USAID)	and collaboration between stakeholders		
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10. Building marine knowledge and capacity for marine conservation and bio prospecting

• **Brief outline**

With a coastline of 2700 km² and an EEZ covers 578 986 km², Mozambique hosts globally significant coastal and marine biodiversity, most of which has yet to be fully described let alone protected. Several NGOs such as IUCN and WCS have been working with the government and local communities to better characterize and protect coastal ecosystems (e.g. COMBO and KBA projects), However little is known about offshore marine ecosystems and biodiversity and to date there has been no designation of offshore marine protected areas.

Scientific Knowledge of marine biodiversity and its resource potential is limited. Such information would not only inform the protection of offshore high biodiversity areas, it could also be a source of future revenue, through the exploration of biological material for commercially valuable genetic and biochemical properties for pharmaceutical, cosmetic and the food industry, an activity called bio prospecting⁹⁵.

Due to the high costs of exploration and commercialization, most of bioprospecting has been undertaken by developed countries through both publicly funded academic institutions and private companies (Benzaken 2017). The exploration and exploitation of marine genetic resources could provide a significant source of revenue over the longer term, provided a strong regulatory framework is in place and enforced. Mozambique ratified the Nagoya Protocol in 2014 and adopted its ABS regulation in 2007(decreed 19/2007). The objective of the regulation is to establish rules governing access to, and protection of, genetic resources, as well as the associated traditional knowledge (TK) relevant to the conservation and sustainable use of biodiversity, and fair and equitable benefit sharing resulting from their use and exploitation. The rules apply to: (a) access to components of Genetic Resources in the national territory, the continental shelf and exclusive economic zones for the purposes of scientific research, technological development or bio prospecting; (b) access to TK associated with GR relevant for the conservation of biodiversity, the integrity of natural resources and the use of its components; (c) the fair and equitable sharing of benefits derived from the development of components of GR and associated TK; and (d) access to technology and the transfer of technology for the conservation and use of biodiversity. The dispositions apply to all individuals and enterprises involved in bio prospecting, whether domestic or foreign (Cabrera Medaglia et al 2014). Mozambique NBSAP (2015-2035) Target 16 to implement by 2020 national legislation on access and benefit sharing arising from the use of biodiversity and genetic resources, has yet to be implemented. The POLMAR does not specifically refer to reference to marine genetic resources, but to the sustainable use of biodiversity, and one of the activities under consideration in phase 2. However, the status of bio prospecting and implementation of the legislation in Mozambique EEZ is not known. Some countries in the region have entered in PPP arrangements with international companies including Madagascar, Kenya and South Africa (Benzaken 2017).

• **Approach**

Investment in marine scientific knowledge and its potential as a future resource is a long-term endeavour. It could take the form of partnerships between the University, government and multilateral science programmes and international academic institutions such as EAF-Nansen or Nekton, which have conducted expeditions in the Indian Ocean region, and are financed by ODA funds (e.g. Norway, the UK). An alternative route would be to seek interest from private companies to enter in PPP arrangements to map out potential for marine genetic resources in

⁹⁵ The Global Ocean Commission (2013) looked at patents from marine organisms sponges, cone shells and an ascidians for pharmaceutical mostly cancer drugs. They are worth millions of dollars annually (See chapter 30 in [UNEP report](#))

Mozambique EEZ under the current legal framework. If financially feasible, a debt for nature swap may provide the finance for the designation and management of offshore marine protected areas (following the Seychelles Model). Return from bio prospecting would come from research permits and fees, patents and royalties. Ensuring technical capacity to implement the provisions of the legislation are met would be essential.

- **Needs**

Marine research and development is essential to the long-term diversification and future blue economy development of Mozambique, as well as to the protection of its coastal and marine ecosystems. With the PNDD and the first phase of the POEM now completed, it is important that the second phase is able to map and potentially designate important areas for biodiversity and incorporate marine genetic resources as a legitimate use, as a source of future high value export products. Whilst the implementation of biodiversity related activities rests with MITA and ANAC, national strategic coordination through the sea council and implementation through a jointly chaired MIMAIP/MITADER/MEF cross-sectoral mechanism will be critical. A healthy macroeconomic status and fiscal space would be required to consider a debt swap as well as transparent processes for potential PPP or FDI arrangements across the supply chain to ensure investor confidence and secure returns to Mozambique. Given the highly specialized field of biotechnology, acquiring or building the necessary capacity would have to be considered.

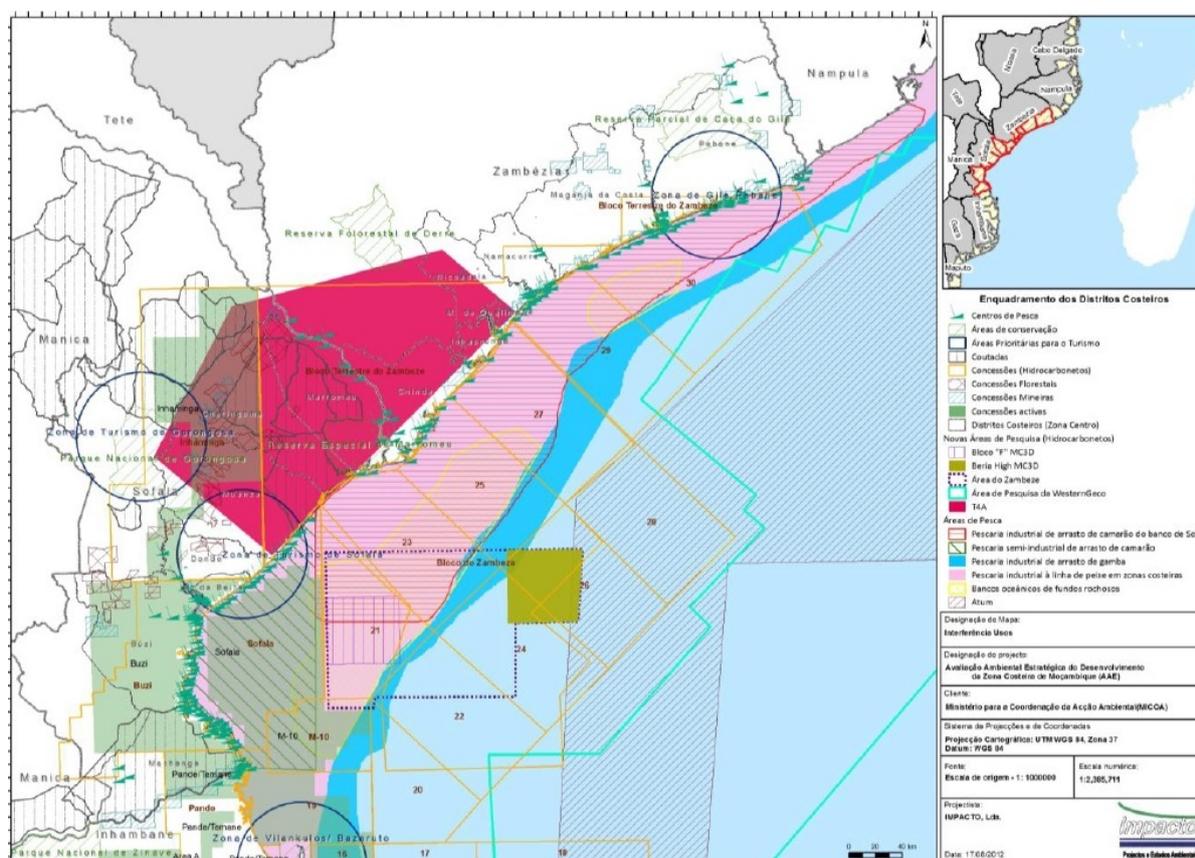
- **Stakeholders**

MIMAIP/ProAzul, MITA, Eduardo Mondlane university, ADNAP, MEF, ANAC, FNDS, CTA, (this is now MITA) the Ministry of Science and Technology, the Ministry of Agriculture and Rural development, the Ministry of Tourism, the Ministry of Mineral Resources, and the Ministry of Industry and Commerce.

- **SWOT analysis**

Strengths	Weaknesses	Opportunities	Threats
Long term opportunity of high value products	Time frame for benefits to be realized and dependence on high tech. Limited marine research capacity	International partners interest International NGO/philanthropic support for Ocean governance	Illegal activities IUU
ABS legislation in place	Has yet to be tested	Current negotiation on BBNJ and ABS	
POEM and PNDD Territorial plan	Maritime boundaries (continental shelf extension) not finalized	Offshore MPAs designation including around LNG? (Gabon model) may reduce conflict and benefit fisheries	Competition with other ocean uses (fisheries, mining, shipping?)
	Fragmented ocean governance along sectors	Institutional arrangements yet to be operational (e.g. role Sea council)	
Mozambique channel biodiversity hot spot	Limited data on offshore biodiversity	Neighbouring Channel states Kenya and South Africa experience	
	High costs of exploration and investor confidence.	Improved macro-economic reform and SOE transparency regulation	
Responds to the international commitments on BBNJ Fosters conservation and restoration of coastal and mangrove areas	Requires management partners and investors	Propose new marine landscape and protected coastal marine areas Foster research and species protection, promote research hubs for young researchers, link to international research centres	
		MPA designations may serve as future potential focal areas for tourism	

11. Integrated development of Sofala Bank and central coast



Source: TPF & Biodesign (2020) ELABORAÇÃO DO PLANO DE ORDENAMENTO DO ESPAÇO MARÍTIMO (POEM)

• Brief outline

Mozambique's central coast is an area of high biodiversity, economic activity and human settlement (TPF & Biodesign, 2020). It features mangrove ecosystems, abundant fishing grounds for both small-scale as well as semi-industrial fishing (notably for shallow-water Indian shrimp *Fenneropinnaeus indicus*), a major port in the city of Beira and opportunities for the long-term development of both offshore renewable energy (Elsner, 2019) as well as coastal tourism, notably around Vilankulo and Bazaruto in the south (Government of Mozambique, 2015). Immediately off Mozambique's central coast lies Sofala Bank, an area of relatively shallow continental shelf extending up to 140km from the shore at Beira. The warm-water Mozambique current runs directly through the bank, which is also fed through run-off by 24 different river systems, including the Zambezi.

UNEP has previously undertaken studies of the value of Mozambique's marine ecosystems both in terms of their provisioning services as nursery grounds for fisheries as well as storm protection. For the provinces of Zambezia and Sofala, the central provinces along the Sofala Bank, contribution from mangrove and coral ecosystems amounts to approximately 5,000 tonnes of fish per year and total storm protection value of USD 549,000 per year (UNEP-WCMC, 2019).

At the same time as being a centre of blue economy activity for the country, Mozambique's central coast has borne the brunt of recent extreme weather events, with both hurricanes Idai and Kenneth striking Beira and surrounding regions.

As a result of its numerous economic and ecological features, human activity and development potential, Sofala Bank and the associated central coast of Mozambique presents an opportunity to take an integrated approach towards blue economy development across a contiguous ecoregion.

Key components to an integrated blue economy development programme for the Sofala Bank and central coast might include a number of different sector-specific investment opportunities, a number of which are detailed elsewhere in this chapter:

- Green infrastructure investment, notably through mangrove restoration along rural and peri-urban stretches of coastline to complement grey infrastructure in urban centres. This green infrastructure would provide flood defence (as highlighted through the UNEP-WCMC study) as well as secondary benefits including nursery grounds for key commercial fish species as well as potential tourism development opportunities
- Development of a professionalised, formalised small-scale and semi-industrial fishing sector for the Sofala Bank fishing region that includes electrification opportunities (building on the approach taken by ProAzul and FUNAE previously to expand solar energy availability for remote coastal fishing communities), cold chain infrastructure and market-oriented infrastructure development through the fishing port at Beira
- Development of the container port at Beira to offer more sustainable port services (including, for example, renewables-based cold ironing – see separate opportunity below)
- Development of circular economy waste management infrastructure in Beira to reduce solid waste and wastewater influx into the marine environment along the central coast
- Development of sustainable tourism opportunities in key tourism hotspots, particularly along the southern half of the central coast around Vilankulo and Bazaruto national park
- Over time, development of offshore wind farms in the shallow waters of the Sofala Bank (though recognising that onshore wind and solar energy is currently significantly cheaper to develop for Mozambique)

As an integrated approach to blue economy development, the Sofala Bank and central coast region also provides a practical and smaller-scale area to implement the POEM marine spatial planning process currently being developed for Mozambique, and through which different users of the marine environment can find ways to coexist in the same space.

- **Approach**

An integrated approach to developing the blue economy such as the one presented here would enable investment at a larger scale than for a sector-specific opportunity, which may attract larger-scale capital providers. While Mozambique's fiscal space is limited, debt instruments to finance integrated development may be possible if blended with concessional finance from multilateral institutions as well as private capital for revenue-generating components of the wider approach, such as waste management, port and fishing infrastructure.

It may also be possible to explore linking this integrated development approach to a debt conversion scenario similar to the debt swap that took place in the Seychelles, particularly if the development of the central coast includes social and environmental objectives (such as protected area designation and enforcement) that would be attractive to creditors in exchange for a debt conversion. This would need to be explored further with the Ministry of Economy and Finance as well as the Bank of Mozambique.

- **Needs**

An integrated approach such as the one presented here is highly complex and would rely on substantial coordination and collaboration between stakeholders. As such, this approach

would be unlikely to succeed without very clearly defined cooperation and resource-sharing between government departments to coordinate a multi-sector investment strategy. It would also require substantial reform to the doing business environment in Mozambique to enable easier business transactions and reduce administrative burdens for the private sector.

As this integrated project is reliant on multiple sectors, it is also heavily reliant on the successful authorisation and implementation of both the POEM and the PNDT for Mozambique's marine and coastal environments, with good stakeholder participation from each of the relevant sectors and stakeholder groups, including empowered and well-represented provincial and local governments.

- **Stakeholders**

ProAzul, provincial governments, ministry of energy, ministry of environment, ministry of tourism, ministry of economics and finance, private sector, community fisheries management councils

- **SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
Offers means to weave natural capital into central thesis of economic diversification through new opportunities associated with natural systems (tourism, fishing etc)	Very difficult to quantify economic benefits of natural systems, particularly in comparison with well-costed grey infrastructure	Significant, diversified opportunities to capture co-benefits from e.g. tourism opportunities, greater fisheries productivity, aquaculture opportunities	Complex project, liable to political capture and any number of external changes that may limit or prevent implementation
Provides a broad set of economic activity for Mozambique's central coast that diversifies the economy and may serve as a business for long-term growth along the central coast	Green infrastructure requires a lot of space, which may be difficult and expensive to acquire given ownership challenges in Mozambique (much coastal land is privately held, often by South Africans)	Touches on a number of other economic and development priorities for Mozambique – e.g. electrification and telecommunications – may be able to access other development funds	
Provides a clear investment rationale for implementation of the POEM	High number of stakeholders – coordination between interests and reconciling conflicts will require skilled intermediation	Provides an opportunity for greater provincial/district-level ownership of the blue economy agenda and could empower their involvement in decision-making	
Portfolio of investment opportunities spreads risk and offers greater scale, attractive for larger financial institutions			

12. Building a vibrant blue economy private sector

- **Brief outline**

The private sector in Mozambique is characterized by a high degree of informality, and a large number of micro enterprises. The informal sector is estimated to be 89% of enterprises and 30.9% of GDP. (World Bank 2020). Strengthening MSMEs to lift rural coastal communities out

of poverty and creating job opportunities (including for women), will not only benefit those communities and local economies, it will also contribute to the country economy and provide a balance to an economy highly dependent on few extractive industries, with limited government revenue and benefits flowing to the wider population. Much of the key constraints to private sector development are systemic and affecting a broad range of sectors. Those investigated in this report focus on blue economy sectors such as fisheries, aquaculture and tourism, and those services on which blue sectors depend on such as energy, telecommunications or transport.

Building a vibrant blue economy MSME, requires a multi-prong approach, on the one hand public investments in policy and regulatory reforms to improve the business environment and in particular ease of doing business, simplifying legislation for FDI investment and access to information, streamlining institutional arrangements (see section on needs), and on the other hand the professionalization of blue economy MSMEs, through business registration training, R&D, adoption of best practice standards, and as well as institutional development and representation in regional and national platforms and to facilitate development and greater access to markets for MSMEs goods and services.

Implement MSME doing business policy reform to improve the business environment combined with taxation reform to bring the MSME informal sector on board would generate increased domestic revenue. Access to affordable credit (e.g. commercial loan) would require a review of national banks' operations on the one hand (e.g. BNI) to be more MSME focused (e.g. collaterals, interest rates) and the use of more adapted finance products such as micro finance in rural areas, and insurance products, as well as training of potential borrowers in business skills. Up scaling/mainstreaming off grid solar in rural areas and access to reliable mobile/internet networks and mobile payments would significantly improve the development of an MSME sector. To formalize the sector, incentives to MSME business registration could consider initial tax rebate, access to subsidized bank loans or competitive grants and business training and readily access to mobile payments.

Professionalization of the MSME sector would require a combination of basic education, technical and vocational training, professional development including business literacy and e-literacy, the latter developing fast although the penetration in rural areas is not known. (e.g. extensive mobile phone network and affordable internet access). Developing and resourcing a R&D capability (e.g. aquaculture, value chains, tourism and hospitality, creating new markets, marine conservation and education) building on the university and other existing institutions (see blue incubator above) would be essential to create opportunities the MSME sector could take advantage of. Establishing a blue incubator to harness the country innovation and entrepreneurship. Finally encouraging professional cooperatives and taking advantage of existing platform such as CTA would give a voice to the sector in policy and financing fora.

- ***The approach***

Public sector investment (MDB, ODA) as grants (e.g. AfDB FAPA) or concessional loans in policy reforms in MSMEs, taxation, and education and training could be combined with a blue incubator approach (see blue incubator investment opportunity) and knowledge sharing and capacity building mechanisms to attract local R&D entrepreneurs and MSME private investment and raise awareness of blue economy and conservation of coastal and marine areas.. Domestic finance through diversification of LNG proceeds (license conditions, CSR and sovereign fund allocations) to improve MSME services to megaprojects and blue economy sectors. Up scaling infrastructure development would require either PPP, FDI (e.g. telecommunication hardware, off grid solar). Return on investment would come from service fees to beneficiaries, taxes through increased economic activity and business registration, as well as improved MSME's efficiencies and professionalization.

- **What is needed**

Commitment and capacity for the MSME and taxation reform process as contributing to an inclusive economic development (e.g. implementation of Mozambique Action Plan for improving the business environment 2019-2021) including reform of SOEs for level plain field and transparent and competitive access to government procurement (see the WEF indices). Streamlined and transparent procurement process to ensure Investor confidence and attract FDI.

Effective coordination across blue economy ministries and other relevant ministries and progress on the establishment of the Sea Council. Strengthening of E-government administrative capacity (e-Registers across sectors, mobile networks payments, PAYGO (fast and reduce opportunities for corruption), monitoring of uptake of reform process and resulting financial flows. And readiness finance for bank loan application (e.g. IFAD ProDAPE bank loan model) for MSMEs.

- **Stakeholders**

MEF, Bank of Mozambique, BNI, private bankers (potentially as champions) Ministry of commerce and industry, Ministry of Energy, Ministry of transports and Communication, Ministry of Tourism and Culture, The University of Eduardo Mondlane, Ministry of Agriculture and rural development. MIMAIP/ProAzul coordination across sectors through the Sea Council of relevant sector ministries. CTA, international companies.

- **SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
MSME Policy reforms would have benefits across blue economy sectors and beyond	Commitment and capacity for reforms including the role of Banks and new financing products unknown	SOE reforms LNG sovereign fund negotiation on going	Changes in government priorities due to Covid-19
Building on Infrastructure planning (electrification, internet mobile phone networks off grid solar power networks, cabotage transport)	Extent of penetration in rural areas		Natural hazards
Blue sectors opportunities for diversification and inclusive development	Large number of informal MSME sector	SSF and tourism and services megaprojects underdeveloped	
Formalize the MSME blue sectors		Generate tax revenue	Benefits of Informality may be greater than registration
Encourage professionalization of MSME sector leading to increased economic activities	Cohesion of a MSME sector is not known.		

