



# MOZAMBIQUE

## UPSCALING NATURE-BASED FLOOD PROTECTION IN MOZAMBIQUE'S CITIES

Enabling Environment

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**Project**

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## ABBREVIATIONS

AIAS	Administração de Infra-estruturas de Água e Saneamento	CRA	Conselho de Regulação de Abastecimento de Água
ARA	Administração Regional de Águas	COE	Centro Operativo de emergências
AQUA	Agência Nacional de Controle de Qualidade Ambiental	CONDES	Conselho de Desenvolvimento Sustentável (Sustainable Development Council)
CBD	Convention on Biological Diversity	CT	Conselho Técnico (Technical Council)
CCAP	Climate Change Adaptation Programme	CTGC	Conselho Técnico de Gestão de Calamidades
CCGC	Conselho Coordenador de Gestão de Calamidades	DINAB	Direcção Nacional do Ambiente
CES	CES Consulting Engineers Salzgitter GmbH		



DINOTER	Direcção Nacional de Ordenamento do Território e Reassentamento	MEF	Ministério da Economia e Finanças
DNAAS	Direcção Nacional de Abastecimento de Água e Saneamento	MIC	Ministério de Indústria e Comércio
DNDA	Direcção Nacional de Desenvolvimento Autárquico	MICOA	Ministério da Coordenação Ambiental
DNGRH	Direcção Nacional de Gestão de Recursos Hídricos	MICTUR	Ministério de Cultura e Turismo
DPOPHRH	Direcção Provincial das Obras Públicas, Habitação e Recursos Hídricos	MINEC	Ministério de Negócios Estrangeiros e Cooperação
DPTA	Direcção Provincial de Terra e Ambiente	MIREME	Ministério dos Recursos Minerais e Energia
DRR	Disaster Risk Reduction	MISAU	Ministério da Saúde
EMUSA	Empresa Municipal de Saneamento	MTA	Ministério da Terra e Ambiente
ENAMMC	Estratégia Nacional de Adaptação e Mitigação de Mudanças Climáticas	MMAIP	Ministério do Mar, Águas Interiores e Pescas
FIPAG	Fundo de Investimento e Património de Abastecimento de Água	MOPHRH	Ministério das Obras Públicas, Habitação e Recursos Hídricos
FNDS	Fundo Nacional de Desenvolvimento Sustentável	MRV	Mecanismos de Monitoria Reporte e Verificação
FUNAB	Fundo Nacional do Ambiente	MTC	Ministério dos Transportes e Comunicação
GAS	Grupo Subsectorial de Água e Saneamento	NBS	Nature-based Solutions
GoM	Government of Mozambique	PEU	Planos de Estrutura Urbana
GFDRR	Global Facility for Disaster Reduction and Recovery	PGPU	Planos Gerais e Parciais de Urbanização
HCT	Humanitarian Country Team	PLA	Plano Local de Adaptação
INDC	Intended Nationally Determined Contribution	PNUD	Programa das Nações Unidas para o Desenvolvimento
INGC	Instituto Nacional de Gestão de Calamidades	PQG	Plano Quinquenal do Governo
IPA	Imposto Pessoal Autárquico	PROFOR	Program on Forests
KfW	German Development Bank	SDG	Sustainable Development Goals
MAEFP	Ministério da Administração Estatal e Função Pública	SDPI	Serviços Distritais de Planificação e Infra-estruturas
MADER	Ministério de Agricultura e Desenvolvimento Rural	ToR	Terms of Reference
MCTESTP	Ministério de Ciência e Tecnologia, Ensino Superior, Técnico Profissional	UCM	Universidade Católica de Moçambique
		UEM	Universidade Eduardo Mondlane
		UNFCCC	United Nations Framework Convention on Climate Change
		USAID	United States Agency for International Development

# 1 INTRODUCTION

## 1.1 NATURE-BASED FLOOD AND EROSION PROTECTION IN THE URBAN CONTEXT

Mozambique's coastal as well as parts of its inland cities comprise risk areas prone to erosion and flooding. Heavy rainfalls regularly inundate settlements and roads and erosion increasingly threatens housing and public infrastructure, leading to human and economic losses. These risks, on the one side, are caused by the exposure of the land, its population and infrastructure to natural hazards, which is the case particularly along the coast with its low-lying estuary areas. On the other side, inappropriate land use increases flooding and erosion risks, with settlements occupying protection areas (e.g. floodplains and wetlands) and with the degradation of forests and vegetation.

Accordingly, flood and erosion management is one of the first priorities in affected cities. The majority of protection measures, in Mozambique and worldwide, comprise the rehabilitation and construction of grey infrastructure, such as drainage canals, retention basins, protection walls and their appurtenant infrastructures. While there are several reasons to consider for and against grey infrastructure, incl. degree of urbanization, existing infrastructure, local capacities (construction and operation), etc., nature-based solutions are an alternative/ complementary approach receiving more and more attention at local, national and international level. Especially when looking at small-scale interventions, nature-based solutions can be a more cost-effective option and may also be implemented and operated/ maintained by local stakeholders, including communities and NGOs (e.g. afforestation measures). They can thus be included in urban planning without major costs, not only reducing flood risks but avoiding them in the first place.



**Figure 1-1: Detention Ponds - NBS for flood protection**



**Figure 1-2: Ecologs – NBS for erosion protection**

Nevertheless, it needs to be pointed out that nature-based as well as hybrid flood and erosion protection measures may also be very complex in their planning and implementation, requiring expertise not only in engineering but also in specific areas of environmental science (e.g. ecology, zoology, botany, oceanology, soil science, and geology) and social science.

In Mozambique, small-scale initiatives of nature based solutions (NBS) can be found. Mangrove reforestation and planting of dune vegetation are erosion protection measures mostly carried out with local communities or community-based organizations. However, the use of NBS for investments in public infrastructure though national and local authorities is not a common practice.

Pilot projects with a larger scale have been launched and implemented through international funding, as it is the case of the Chiveve Rehabilitation and Green Urban Infrastructure Project in Beira City,

implemented by the Administration for Water and Sanitation (AIAS) and financed through the German Cooperation (KFW) and World Bank.

Considering that the use of NBS for flood and erosion protection is currently in a piloting stage, questions arise about who is in the lead of this process, who establishes policies, norms and guidelines and who is responsible for the implementation and operation at local level.

## 1.2 OBJECTIVE OF THE CONSULTANCY

The World Bank, with funding from PROFOR and the GFDRR Multi-Donor Trust Fund for Mainstreaming Disaster and Climate Risk Management in Developing Countries (City Coastal Resilience Project – City-CORE Africa), is providing technical assistance to the Government of Mozambique (GoM) for the up-scaling of nature-based solutions for urban flood risk management in Mozambican cities.

The objective of the present Consultancy is to provide technical and analytical support to contribute in the upscaling of nature-based solutions for urban flood risk management, particularly in coastal cities. Specific objectives of the consultancy services are:

- (1) to identify the lessons learnt of the green urban infrastructure pilot project in Beira, as well as legal, regulatory and institutional constraints and opportunities to integrate nature-based risk management solutions in the cities of Mozambique; and
- (2) to identify different options for nature-based and hybrid solutions to manage urban flood risks in two pilot cities and assess their effectiveness, costs and benefits.

It is expected that the consultancy contributes to the following outcomes:

1. Knowledge gap in the preparation and implementation of nature-based solutions for urban flood risk management has been reduced.
2. Recommendations to improve the enabling environment for nature-based solutions for risk reduction are being discussed by decision-makers in Mozambique.
3. The full range of possible nature-based and/or hybrid green-grey solutions flood risk management solutions for two pilot cities (Quelimane and Nacala) has been analyzed based on a comprehensive urban flood risk assessment for different climate change and urban growth scenarios.
4. Rough cost-benefit analysis for different investment scenarios for selected cities in Mozambique has been completed to allow for an initial comparison of potential traditional and nature-based approaches and contributes to improving methodologies to carry out cost-benefit analysis for nature-based approaches.

The 'Enabling Environment Report' presents the main result for the second outcome, elaborated under Task 2 of the consultancy. The objective of this task is to provide a detailed assessment of the legal and institutional environment to mainstream nature-based approaches for urban flood risk management and erosion protection solutions in the cities of Mozambique.

Specific objectives of the Enabling Environment Report are to:

- Collect and review relevant legal documents and the regulatory framework;
- Analyze gaps / inconsistencies regarding principles and mandates as well as synergies / potential convergence points regarding the application of nature-based approaches for flood and erosion protection;
- Prepare a stakeholder mapping with relevant mandates for the implementation of nature-based flood / erosion protection solutions at national, provincial and municipal level
- Analyze stakeholder strengths and weaknesses in the implementation of nature-based solutions;

## 2 METHODOLOGY

### 2.1 ORGANIZATION OF THE CONSULTANT'S TEAM

The team of experts for this task is shown in the table below. Under the coordination of the Project Team Leader, the Institutional Expert and the Data Management Expert conducted a series of interviews and collected data at national, provincial and municipal level.

**Table 2-1 Overview of Experts for the Enabling Environment Report**

Expert	Position
Matthias Fritz	Team Leader and Senior Hydraulic Engineer
Bianca Reichel	Institutional Expert
António Beleza	(DRM) Data Management Expert

Accordingly the task was carried out partly as desktop work for the review of legal documents and partly field-based. Interviews were conducted in Maputo, Quelimane and Nacala. The two cities are the selected pilot cities for the Consultancy's Task 3 and have been used as a source of information regarding the institutional set-up, capacities and coordination mechanisms.

### 2.2 CONCEPTUAL FRAMEWORK AND RESEARCH THEMES

Over the past years there has been a growing consensus that countries worldwide should follow a development route and policy agenda that simultaneously builds resilience, improves mitigation, and encourages sustainable development. This means pursuing a national policy and planning strategy that seeks to affect the dual imperatives of i) continued economic growth needed for instance by developing countries to reduce poverty and improve wellbeing; and ii) improved environmental management needed to tackle resource scarcities and climate change impacts.

Mozambique is one of the African countries most affected by the impacts of climate change. With approximately 2,500km of coastline and located downstream of nine transboundary river basins, Mozambique is immensely exposed to coastal and river flooding in Africa. The World Bank has been active in providing emergency recovery after flooding events in Mozambique and is increasingly supporting the Government of Mozambique (GoM) in preventive disaster risk management operations at city and regional levels (e.g. the 3CP - Cities and Climate Change Project). While traditional infrastructure-based interventions still make up the majority of global financing to improve disaster risk management, the application of nature-based solutions is gaining momentum.

One out of approximately 70 pilot nature-based urban flood management projects supported by the World Bank between 2012 and 2019 is located in the coastal city of Beira in Mozambique. To maximize results from such projects, it is important to clarify the benefits for urban flood risk management and how such approaches can be scaled up and adjusted to other cities in Mozambique and other countries in Africa. More generally, nature-based urban flood risk management projects struggle to provide a structured and comprehensive assessment of grey and green infrastructure solutions and produce and communicate evidence on the cost effectiveness of such solutions compared to other priorities.

In order to provide information on the existing enabling environment for the upscaling of nature-based flood and erosion management, the Consultant defined the following research themes as the basis of the assessment and present report:



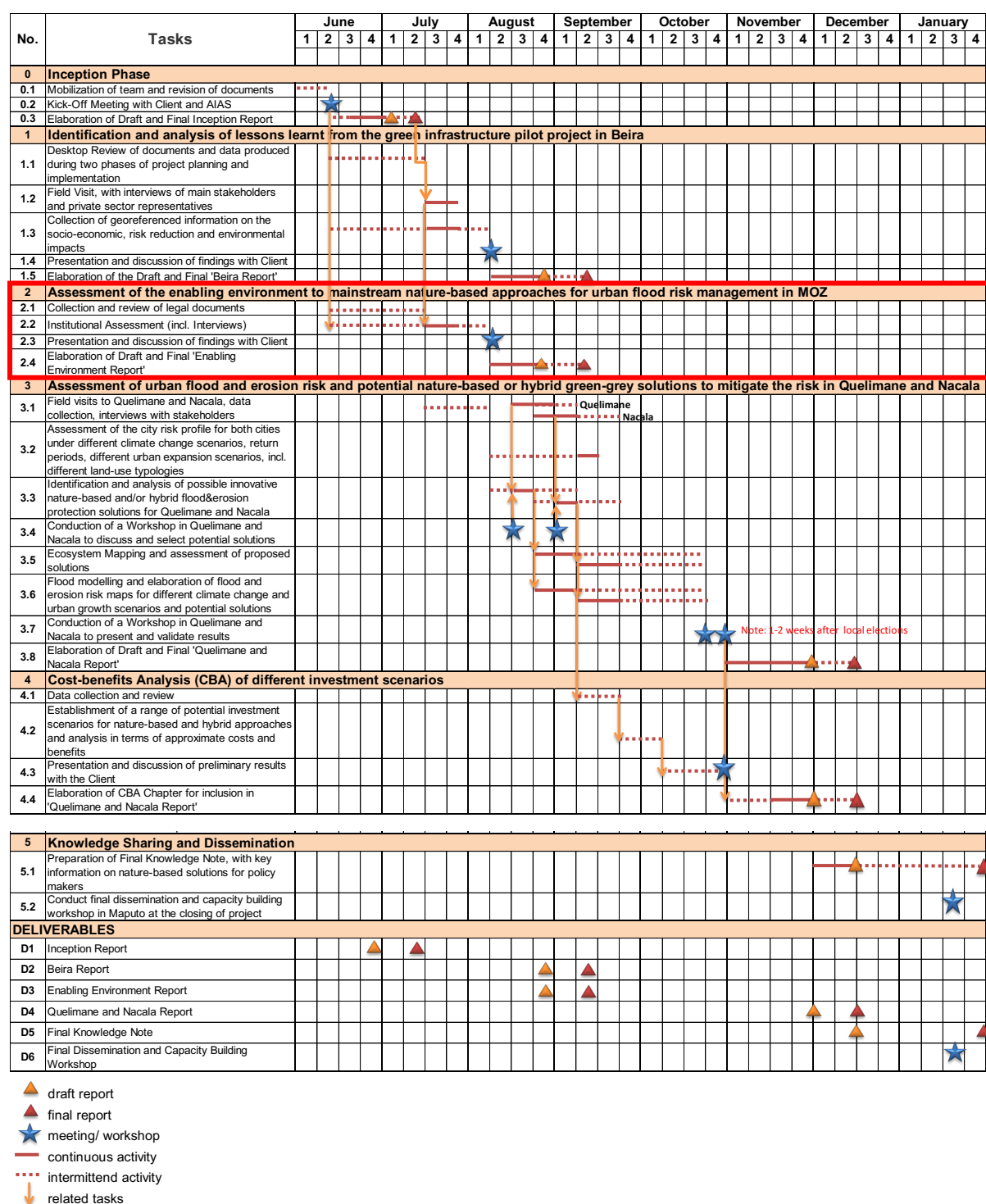
- i. **Legal framework:** The laws, regulations and policies orienting nature based urban flood and erosion management.
- ii. **Institutional mandates and coordination:** The institutional architecture, mandates and considerations of leadership to mainstream nature-based approaches for urban flood risk management and erosion protection in Mozambique.
- iii. **Conflicts and Potentials:** Gaps and conflicts of sector-policies and mandates, possibilities for an improved engagement and coordination of institutions.

### 2.3 RESEARCH METHODOLOGY AND WORK PLAN

Based on the Terms of Reference (ToR), the road map presented in Table 2-1 was agreed and applied following the Consultancy's kick-off meeting.

The first field mission for Task 2 was planned for the period 15/07/2018 to 20/07/2018, where interviews were conducted and secondary data collected in Maputo. The Consultant identified and approached key government actors in the sectors of environment, water, urban development, climate change and disaster management in order to better understand the policies, mandates, institutional architecture, capacities and considerations of leadership for mainstreaming nature-based approaches for urban flood risk management and erosion protection in Mozambique. With the same aim, the second field mission happened in the second week of August, where the Consultant visited Quelimane, Nampula and Nacala. Considering that due to logistical reasons the second field mission was partly combined with Task 3, data collection therefore took approximately 2 weeks longer than planned. The finalization and submission of the Report was then extended, followed by a revision process with the World Bank.

Table 2-2 Updated Schedule of the Consultancy



## 2.4 SOURCES OF DATA AND INFORMATION

This report was based on data obtained from different sources namely:

- Literature review:** an expanded desktop review of the Mozambican laws and regulations which define mandates and criteria relevant for the mainstreaming and implementation of flood and erosion protection measures as well as international conventions was carried out by applying the content analysis technique.

- ii. **Interviews:** twenty-eight key informants from the central, provincial, municipal as well as district governments were interviewed. The interviews were conducted based on the research questions presented in Annex 1.

## 2.5 PROJECT STAKEHOLDERS

The team identified and approached a number of key stakeholders during this assignment. The engagement started during data collection for this task and contacts were established at that point. Table 2-3 presents an overview of potential stakeholders at national and sub-national level.

**Table 2-3 Overview Project Stakeholders**

Institution	Name of Focal Person	Position
AIAS	Paulo Oscar Monteiro da Silva	Cities and Climate Change Project Manager
MITADER (now MTA)	Guilhermina Amurane	Head of Environmental Management Department
INGC	Higino Rodrigues	National Director, Post Disaster Reconstruction Office
FIPAG	Fernanda Quintano	tbd
Municipal Council of Quelimane	Silverio Cipriano	Director of the Municipal Sanitation Company (EMUSA)
Municipal Council of Nacala	Adelino Cobre	Director of Urban Services and Equipment
DPOPHRH (Nampula)	Arlindo Issa	Technical staff of Provincial Directorate for Urbanization and Housing
AIAS Zambezia	Julia Uarela	Regional Delegate
DPTADER (now DPTA) (Zambézia)	Chicuate	Head of Environmental Department
DPTADER (now DPTA) (Nampula)	António Comboio	Head of Provincial Department for Land Use Management and Resettlements
ARA Centro-Norte	Carlitos Omar	Director of ARA Centro-Norte

Other institutions were involved during data collection but are not presented here as key stakeholders in terms of their mandates to drive policies, investments and / or operation of nature-based flood and erosion protection infrastructures. A full list of interviewees is provided in Annex 2.

### 3 POLICY FRAMEWORK

During the inception phase, the team started with the collection of existing Mozambican laws and regulations which define mandates and criteria relevant for the mainstreaming and implementation of flood and erosion protection measures. Below sections present a selection of the most relevant legislation in force that enables the NBS environment and point out their crucial standards and guidelines for upscaling, planning and implementing nature-based flood and erosion protection measures in Mozambican cities. A full, but not exhaustive, list of documents reviewed by the Consultant is provided under Annex 3.

Under section 3.4, a comparative analysis is provided on the principles and standards given in the different sector legislation and policies in regard to (nature-based) flood and erosion protection. This includes the definition of protection zones, disaster risk zones, as well as principles on flood and erosion protection.

#### 3.1 ENVIRONMENT, LAND, WATER AND DISASTER RISK REDUCTION

The overall legislative framework comprising the sectors environment, land, water and disaster risk reduction provides some guidance for flood and erosion control, also looking at the application of nature-based solutions in the urban context. Below table provides an overview of the most important sector-specific legislation and its relevant contents which enable the use of NBS for flood and erosion management.

**Table 3-1 Environmental, Land Water and DRR Legislation**

Type and N°	Name/ Description	Relevance for NBS
<b>1. LAWS AND REGULATIONS</b>		
<b>a. Environmental Management</b>		
Lei n° 20/97	Lei do Ambiente/ Environmental Law	<ul style="list-style-type: none"> <li>- Establishes principles based on constitutional law for an environment conducive to environmental management based on preventive systems</li> <li>- Encourages the implementation of <b>protection and valorization measures of the environmental heritage</b> in particular the historical and cultural heritage, with the involvement of communities and environmental protection associations</li> <li>- Promotes the implementation of appropriate measures contributing to the maintenance and regeneration of animal species, <b>recovery of damaged and creation of new habitats</b>, controlling activities or the use of substances that may affect the faunistic species and their habitats</li> <li>- <b>Prohibits activities and/ or infrastructure that accelerate erosion, degradation of wetlands, desertification, deforestation or any other form of environmental degradation</b></li> </ul>



		<ul style="list-style-type: none"> <li>- Stipulates specific rules for the protection of the environment, incl. the prevention of environmental damage and compensation measures</li> </ul>
Lei nº 10/99	A Lei de Florestas e Fauna Bravia/ Forestry and Wildlife Law	<ul style="list-style-type: none"> <li>- <b>Promotes incentives for planting forest species for protection and/ or recovery of degraded areas in fragile ecosystems</b> (hydrographic basins, dunes, erosion zones)</li> <li>- Provides guidance of measures to encourage the national private sector to participate in the exploration, management and conservation of plant species</li> </ul>
Decreto nº45/2006	Regulamento para a Prevenção da Poluição e Protecção do Ambiente Marinho e Costeiro/ Regulation for the Prevention and Protection of the Marine and Coastal Environment	<ul style="list-style-type: none"> <li>- Defines limits of pollution to coastal environment, incl. liquid discharges and solid waste</li> <li>- Prohibits deposit of liquid and solid waste along the coast, especially in fragile ecosystems</li> <li>- <b>Defines beach/ coastal management practices and prohibitions, incl. protection of wetlands and prohibition of introducing new/exotic species</b></li> <li>- <b>Defines partial protection zones, incl. riverbeds and surroundings of water bodies</b></li> </ul>

#### b. Land Use Management

Lei nº 19/97	Lei de Terras / Land Law	<ul style="list-style-type: none"> <li>- Encourages the use of land as a contribution to the development of the national economy</li> <li>- Requires national land cadaster to comprise data on the legal status of land, type of occupation, forests, reserves, etc. to efficiently organize the use of land, while cautioning its elements of protection and conservation;</li> <li>- Defines <b>total and partial protection zones as public domain areas</b>, considering total protection zones as areas for nature conservation or preservation activities and of State security and defense by <b>establishing parameters for the definition of partial protection</b> (see section 3.4);</li> <li>- Determines total and partial protection zones as areas where no rights for the use and exploitation of land can be assigned, with the exception of <b>special licenses for the exercise of certain activities</b>;</li> <li>- Defines technical/ political guidelines on the parameters for <b>land use and the role of local governments / communities in this process</b></li> </ul>
Decreto nº 66/98	Regulamento da Lei de Terras / Regulation of the Land Law	<ul style="list-style-type: none"> <li>- Regulates that any <b>construction in partial protection zones adjacent to waterbodies requires a license</b> from the government entities responsible for interior and maritime water management</li> <li>- Enables the creation of conditions for the demarcation or delimitation of new areas for undertaking projects in areas occupied by local communities</li> </ul>

		<ul style="list-style-type: none"> <li>- Envisages public participation during the elaboration and execution of land use plans</li> </ul>
Lei nº 19/2007	Lei de Ordenamento do Território / Spatial Planning Law	<ul style="list-style-type: none"> <li>- Aims at preserving the <b>ecological balance, incl. defense of ecosystems and fragile habitats</b>, amongst others</li> <li>- Envisions the <b>preservation of the built heritage and the natural or man-made landscape</b>, which includes green, blue and grey infrastructure</li> <li>- <b>Promotes requalification of urban areas that are degraded</b>, occupied informally or as emergency measure</li> <li>- Promotes the compatibility and coordination of environmental policies and land use strategies, respecting the current forms of occupation</li> <li>- Requests national, provincial, district and municipal government to apply spatial planning instruments and general instruments incl. land qualification, classification, cadaster, environmental and socio-economic inventories and zoning</li> <li>- Defines public participation mechanisms in the spatial planning process</li> </ul>
Decreto 60/2006 (altered by Decreto nº 23/2008)	Regulamento do Solo Urbano / Regulation of Urban Land	<ul style="list-style-type: none"> <li>- Classifies <b>land use plans in <i>Plano de Estrutura, Plano Geral e Parcial de Urbanização e Plano de Promenor</i></b>.</li> <li>- Promotes <b>establishment of socially useful spaces</b> on the basis of principles and spatial planning directives</li> <li>- The <i>Plano Promenor</i> defines in detail the typology of occupancy of any specific area of the urban center, <b>incl. land uses and general building conditions, the characteristics of infrastructure networks and services</b></li> <li>- <b>Risk and protection zones, water courses, green spaces to be integrated in land use plans</b></li> </ul>

### c. Disaster Risk Reduction

Lei nº 15/2014	Lei da Gestão de Calamidades / Disaster Management Law	<ul style="list-style-type: none"> <li>- Gives guidance on prevention, mitigation and development of actions for reconstruction and recovery of areas affected by disasters</li> <li>- Gives orientation on the need for technical-scientific cooperation with academic and research institutions in the search for <b>solutions and appropriate ways of preserving the environment and preventing disaster risk</b></li> <li>- Guides the institution for disasters management in defining policies, plans, prevention and mitigation strategies that aim to prevent or reduce the impact of disasters on the lives of people or communities</li> <li>- Defines prevention measures, committing governments to <b>adopt legislation on construction and other projects that make them more resilient</b> to the impact of floods, cyclones, erosion, among others</li> <li>- Assigns responsibility to provincial and municipal governments to <b>define disaster risk areas and to ban the</b></li> </ul>
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		<b>construction of infrastructure in these areas, unless appropriate technologies are applied.</b>
Decreto nº 7/2016	Regulamento da Lei da Gestão de Calamidades / Regulation of the Disaster Management Law	<ul style="list-style-type: none"> <li>- Foresees provision of technical/ political <b>guidance to local institutions</b> / bodies on the need to <b>build infrastructure resilient to extreme events</b></li> <li>- Promotion of <b>new equipment and technologies suitable for the prevention and mitigation of disasters</b></li> <li>- Defines responsibility of mapping of disaster risk zones by INGC and demarcation by local government. <b>Prohibits any infrastructure construction in risk zones.</b></li> </ul>

#### d. Water

Lei nº 16/1991	Lei de Águas / Water Law	<ul style="list-style-type: none"> <li>- Defines the <b>entitlement and legal qualification of flood zones to determine security restrictions for persons and property</b></li> <li>- Promotes better use of water bodies for the public domain, avoiding wastefulness and losses to the sea, increasing multiple purposes uses, recycling, <b>works and equipment for water retention/ storage</b> and regularization of flows.</li> <li>- <b>Prevention and control of harmful effects regarding soil erosion and flooding</b></li> <li>- <b>Improving the management of hydraulic infrastructures (incl. drainage)</b></li> </ul>
Resolução nº42/2016	Approves the National Water Policy	<ul style="list-style-type: none"> <li>- One of key objectives is to <b>preserve water for protection of ecosystems and to reduce vulnerability to floods and droughts (through better coordination and planning of structural and non-structural measures)</b></li> <li>- The main objectives in regard to flood management are to prevent the loss of human lives, minimize negative social and economic impacts, damage to property and infrastructure, disruption of social and economic life;</li> <li>- Defines physical and planning measures to improve mitigation of floods impacts, including <b>protection of flood-prone urban areas by dikes, floodplain zoning of rivers and licensing of occupations in these plains</b> (occupation according to degrees of risk)</li> <li>- <b>Municipalities as local regulators of pollution to be involved in the integrative management of hydro-graphic basins and water resources in general</b></li> </ul>

## 2. POLICIES, STRATEGIES AND PLANS

ENASU 2011-2025	National Urban Water and Sanitation Strategy 2011-2025	<ul style="list-style-type: none"> <li>- Prioritizes the improvement of urban sanitation services through the rehabilitation and expansion of existing waste water and storm water drainage infrastructure.</li> </ul>
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		<ul style="list-style-type: none"> <li>- Assigns the responsibility for the implementation and management of these infrastructures to municipalities, with the national Government being responsible for monitoring these activities, as well as technical and financial support.</li> <li>- Defines establishment of capacity for sanitation management in cities and towns, according to the size of the city, creating autonomous municipal sanitation services whenever deemed necessary.</li> <li>- Defines, as a strategy, the development of hygiene and sanitation programs in close partnership with local government structures, applying an integrated and participatory approach in planning, monitoring, promotion and control</li> </ul>
PQG 2015-2019	Plano Quinquenal do Governo/ 5-Year Plan of the GoM	<p>Priority 5: Ensures the <b>sustainable and transparent management of natural resources and the environment</b></p> <ul style="list-style-type: none"> <li>- Ensures the integration of the <b>green-blue economy</b> and the <b>green growth agenda</b> into national development priorities</li> <li>- Guides the <b>mapping of disaster risk areas</b></li> <li>- Promotes studies and <b>research aimed at reducing the risk of disasters and adapting to climate change</b></li> <li>- Guides the promotion of research on options for adaptation to climate change and DRR in various sectors at all scales</li> <li>- Promotes increased public awareness of the principles, responsibilities and economic and social benefits of the blue-green economy</li> </ul>
ENAMMC 2012	Estratégia Nacional de Adaptação e Mitigação de Mudanças Climáticas/ National Climate Change Adaptation and Mitigation Strategy	<ul style="list-style-type: none"> <li>- Sets out <b>action guidelines for building resilience</b>, including climate change mitigation, in communities and the national economy</li> <li>- Guides the <b>increase of climate resilience through restoration, rational use and protection of natural and built capital</b></li> </ul>
INDC (2015)	Intended Nationally Determined Contribution to the UN-FCCC	<ul style="list-style-type: none"> <li>- Improve the capacity for integrated water resources management including <b>building climate resilient hydraulic infrastructures</b></li> <li>- Increase the <b>effectiveness of land use and spatial planning</b> (protection of floodplains, coastal and other areas vulnerable to floods)</li> <li>- <b>Ensure biodiversity's protection</b></li> <li>- <b>Reduce soil degradation</b> and promote mechanisms for the planting of trees for local use</li> </ul>



		<ul style="list-style-type: none"> <li>- <b>Develop climate resilience mechanisms for infra-structures</b>, urban areas and other human settlements and tourist and coastal zones</li> </ul>
Plano Director 08/2017	Plano Director para a Redução do Risco de Desastres 2017-2030 / Master Plan for Disaster Risk Reduction 2017-2030	<ul style="list-style-type: none"> <li>- Strengthens land use planning, giving attention to the increasing urban risk due to the climatic change</li> <li>- Promotes <b>corrective intervention based on a risk analysis</b> and the definition of priorities in terms of physical and social infrastructures considered critical or vital. Mitigation and maintenance actions will be developed, as well as protection and structural reinforcement works.</li> </ul>
National Urban Water and Sanitation Strategy 2011-2025		<ul style="list-style-type: none"> <li>- Foresees <b>improvement of stormwater drainage systems, with priority of primary drainage channels</b></li> <li>- Requests <b>drainage tariff for coverage of O&amp;M costs</b></li> <li>- Defines that O&amp;M of sanitation and drainage systems to be done <b>by autonomous municipal authority</b></li> </ul>
Agenda 2025	Agenda 2025	<ul style="list-style-type: none"> <li>- Long-term national vision through a participatory process</li> <li>- In relation to human settlements, the strategy prioritizes the capacity for disaster prevention, mitigation and subsequent rehabilitation</li> </ul>

## 3.2 INTERNATIONAL CONVENTIONS

Complementing the above national legal framework, international conventions, particularly regarding environmental protection and climate change adaptation, play a further enabling role for the upscaling of NBS. These conventions can be understood as drivers of the national policy making process, while also facilitating access to external funding. Through the UNFCCC, for example, the GoM prepares National Adaptation Plans and the Intended Nationally Determined Contribution (INDC) which define clear climate adaptation and mitigation goals. These are important instruments to raise awareness and promote targets and actions throughout the different sectors in regard to climate resilient planning, bringing together flood and erosion risk reduction with biodiversity and ecosystem preservation.

**Table 3-2 International Conventions**

Type and n°	Name or description	Relevance for NBS
Resolução n°2/94	Convention on Biological Diversity (CBD)	<ul style="list-style-type: none"> <li>- Promotes and recognizes the urgent need for concrete and coordinated measures to reduce the loss of biodiversity</li> </ul>
Resolução n°45/2003	Convention on Wetlands (Ramsar)	<ul style="list-style-type: none"> <li>- Determines and promotes the conservation of wetlands through the establishment of national wetland reserves</li> </ul>
Resolução n°1/94	United Nations Framework Convention on Climate Change (UNFCCC)	<ul style="list-style-type: none"> <li>- Defines as objective to promote sustainable development</li> <li>- Promotes <b>integrated land and water resource management plans</b> and mechanisms for protection and <b>rehabilitation of degraded areas, especially in areas most affected by floods and erosion.</b></li> </ul>

		- Creates awareness of policymakers in the <b>use of NBS for actions to adapt to climate change</b>
Resolução nº17/82	Convention on the Protection of the World Cultural and Natural Heritage	<ul style="list-style-type: none"> <li>- Makes commitment to take appropriate legal, scientific, technical, administrative and financial measures for the <b>identification, protection, conservation, enhancement and restoration of the natural and cultural heritage</b>.</li> <li>- Promotes policies aiming at determining a cultural and <b>natural heritage function</b> in the collective life and <b>integrating the protection of that heritage into general planning programs</b>.</li> </ul>
Resolução nº18/81	African Convention on the Conservation of Nature and Natural Resources	- Ensures the <b>conservation, use and development of soils, water, flora and fauna</b> of Member States, based on scientific principles and the interests of their populations

### 3.3 MUNICIPALITY LEGISLATION

The enabling legislative environment at municipal level is determined by their legal competencies. The following table provides an overview in this regard. Within the different sectors of environment, land management, water and disaster risk management, the Municipalities are bound to the national legal framework. Urban plans are supposed to apply national guidelines and norms to the local context; however in practice, local planning and implementation is often challenging, as sections 4.1 and 0 describe.

**Table 3-3 Municipal Legislation**

Type and nº	Name or content description	Relevance for NBS
<b>LAWS AND REGULATIONS</b>		
Lei nº 9/97 (revised by Lei nº 6/2007)	Regime jurídico da tutela administrativa sobre as autarquias locais/ Municipalities Administrative Law	- Determines the autonomy of local authorities in carrying out their tasks: e.g. definition of plans and priorities in the implementation of public infrastructure
Lei nº 11/97 (revised by Lei nº 1/2008)	Lei das Finanças Autárquicas/ Municipal Finance Law	<ul style="list-style-type: none"> <li>- Defines competence of local authorities in the investment in: <ul style="list-style-type: none"> <li>o <b>equipment of green spaces, including gardens and nurseries</b></li> <li>o <b>protection or recovery of the environment</b></li> <li>o <b>planting and conservation of trees</b></li> <li>o <b>implementation of urban expansion and renewal programs</b></li> </ul> </li> <li>- Defines autonomy of elaborating, approving, altering and executing activity plans (spatial planning, urbanization plans and detailed plans) and budgets</li> </ul>

		<ul style="list-style-type: none"> <li>- Introduces Municipal Compensation Fund, based on surface area, population, level of development and success in collecting taxes</li> </ul>
Lei n° 8/2003 (revised by Lei n° 11/2012)	Regime jurídico dos órgãos locais do Estado/ Local Administration Law	<ul style="list-style-type: none"> <li>- Guarantees autonomy of municipalities from local state bodies (provinces and districts et al) within the boundaries of the law</li> <li>- Foresees coordination of plans, projects and actions between local state bodies and municipalities</li> </ul>
Diploma Ministerial n° 80/2004	Regulamento da articulação dos órgãos das autarquias locais com as autoridades comunitárias/Regulation on articulation between Municipalities and Communities	<ul style="list-style-type: none"> <li>- Strengthens the link between municipalities and communities to facilitate inclusive community participation</li> <li>- Promotes the <b>collaboration of local community/residents in the planning, implementation and overall awareness raising</b></li> <li>- Promotes the dissemination of knowledge and information on good practices</li> </ul>
Decreto n° 33/2006 (revised by Decreto n° 46/2011)	Regime jurídico das transferências de funções e competências dos órgãos do Estado para as autarquias locais/ Transfer of competencies from the State to Municipalities	<ul style="list-style-type: none"> <li>- Provides competences to Municipalities for the <b>planning, management and realization of investments in the construction of public infrastructure</b></li> <li>- Guarantees autonomy of Municipalities and promotes efficiency and effectiveness of the management at local level</li> <li>- Promotes coordination between central and local government bodies for better planning and implementation</li> </ul>
Lei n°1/2008	Regime financeiro, orçamental e patrimonial das autarquias locais e o sistema tributário autárquico	<ul style="list-style-type: none"> <li>- Endows municipalities with <b>financial autonomy to implement public investments within their territory.</b></li> </ul>
Decreto n° 56/2008	Regime jurídico das modalidades de tutela administrativa dos Governadores Provinciais	<ul style="list-style-type: none"> <li>- Gives provincial governments the competency to <b>control the compliance of national legislation at local level</b></li> <li>- Provides for a <b>coordination of the Provincial Governments plans, programs and projects with the Municipalities</b> for harmonization of their areas of action</li> </ul>

#### POLICIES, STRATEGIES AND PLANS

PEUs	Planos de Estrutura Urbana/ Urban Structure Plans	<b>Establish the spatial organization of the entire territory of the municipality, the parameters and the norms for its use</b> , taking into account the current occupation, the existing and required infrastructures and social equipment and their integration in the regional spatial structure.
PGPUs	Planos Gerais e Parciais de Urbanização/ General and Partial Urbanization Plans	<b>Establish the structure and qualify urban land</b> , taking into account the balance between the various uses and urban functions, defining networks for transport, communications, energy and sanitation, social facilities,

		with special attention to areas of spontaneous occupation.
	Planos de Pormenor/ Detailed Plans	<b>Define in detail the typology of occupation of any specific area of the urban area</b> , establishing the design of the urban space providing for land uses and general building conditions, the layout of roads, characteristics of infrastructure networks and services, either for new areas or for existing areas characterizing the façades of buildings and open space arrangements.
PLAs	Planos Locais de Adaptação/ Local Adaptation Plans	ENAMMC implementation mechanism at the local level, which considers the <b>integration of climate change and DRR issues in Economic Development Plans</b> . The PLA is a voluntary instrument that can be used by Municipalities for better planning and funding purposes. (NOTE: Some PLAs were designed incorporating NBS, e.g. Quelimane)

## 3.4 COMPARISON OF SECTOR LEGISLATION

The revision of laws and regulations makes clear that NBS is not considered or defined specifically as part of the risk reduction measures. Environmental conservation, land use management and water resource management (incl. flood protection) are generally treated as separate objectives. Coordination between institutions and sectors and an integrative resource management is mentioned in many regulations, though without clear definition of responsibilities and what is comprised by and integrative planning and management.

For NBS relevant cross-cutting issues which appear in all of the three sector policies (environment, land, water) and more recent regulations are disaster risk reduction (DRR) and climate change adaptation (CCA)/ resilience. At the same time, the focus on these issues by all sectors seem to create a disorientation regarding sector responsibilities, as further described under section 0.

### 3.4.1 Protection zones

What is most critical for green and hybrid food protection solutions in below legislation regards the definition of protection zones and disaster risk zones and the regulations on their use. The Land Law (N° 19/97) defines total protection zones as areas designated for conservation and nature preservation activities or for the state defense and security. Partial protection zones are defined by the same law, complemented by Decree 45/2006, as:

- land strips 100m from the sea or bay, 100m from a water spring, 250m from a dam and 50m from waterways
- land occupied by railways
- riverbeds, territorial waters, continental shelf and exclusive economic zones

For total protection zones, no land use rights can be given and only activities are allowed that are related to nature conservation (or state defense). Partial protection zones also cannot be subject to land use rights, merely licenses are provided for specific activities comprising basic infrastructure (water supply, waste water drainage, electricity, telephone cables, solid waste and removable small construction) and public infrastructure of national interest (ports, streets, railroads, etc.).

In urban areas both types of protection zones can exist, although the total protection zone (Reserva Municipal) is not used so far. It is to point out that protection zones only include wetlands adjacent to the coast or a river (e.g. mangrove wetlands). Interior wetlands do not have this protection status, if



not defined as a conservation area or as a wetland of international importance under the Ramsar Convention. While the Environmental Law generally prohibits the degradation of wetlands, the definition of a wetland particularly in an urban context is not always clear in practice.

#### 3.4.2 Disaster risk management

The regulatory framework for disaster management, incl. the Disaster Management Law, the Regulation of the law, the Disaster Risk Management Master Plan 2017-2030, among others, provides technical and political guidance to local institutions and bodies on the need to build disaster-resilient infrastructures and at the same time to promote the use of new equipment and technologies suitable for disaster prevention and mitigation, as well as to raise awareness of the transformation of risk areas into safe areas. While the relevance of green / blue infrastructure solutions for flood and erosion protection is not explicitly stated, they respond perfectly to these objectives.

The significance of mapping disaster risk zones is defined in various laws and policies, most prominently in the Disaster Management Law N° 15/2014. Also the PQG promotes the mapping of all risk types in communities exposed to hazards, while the National Water Policy foresees the zoning of floodplains as a measure of reducing flood risks.

Disaster risk zones are not equal to protected areas, while the legislation is conflicting in whether land use rights can be obtained for infrastructure construction or not. The Law n° 15/2014 states that any construction is obliged to use technologies that respond to the increased risks in the area. Furthermore, all buildings in high risk areas must be fenced and all disaster risk areas in general must show a sign prohibiting construction and habitation. On the other hand, the more recent Decree n° 7/2016 generally prohibits all construction, which is considered the current standard.

The disaster management legislation is unclear if the government has an obligation to develop high risk areas into safe areas. On the one side it requests the installation of basic infrastructure in low risk areas to attract permanent settlement. On the other side it defines that it is the right of residents in risk zones to benefit from risk reduction measures.

Overall, the legislation does not mention the development of green / blue infrastructure in risk zones as a way to prevent or reduce disaster risks. Only in regard to resettlement objectives, a component on reforestation exists, but rather as compensation and not as a protection measure against flooding and erosion events.

#### 3.4.3 Flood protection

A different focus of flood protection can be found in each sector policy, which also shows the different mandates of sector institutions. The Water Policy generally looks at good water management, prioritizing the protection against floods in urban areas by dikes and urban planning. The National Urban Water and Sanitation Strategy 2011-2025 concentrates on the improvement of the primary rainwater drainage systems where flooding and erosion provoke the most critical situations, while interventions in the secondary and tertiary drainage system are subject to land occupation and improvements of the road network.

On the other hand, the environmental, land use and disaster management legislation mainly respond to flood protection through the definition of partial protection or disaster risk zones. The environmental legislation further looks into the prevention of pollution, regulating the deposit of solid or toxic waste to the soil, water and atmosphere with Municipalities having to submit a Solid Waste Management Plan to MTA.

The legal framework does not specifically address the implementation of NBS (green / blue infrastructures) for flood protection, although the Water Policy refers to the protection of ecosystems to reduce the effects of floods.

#### 3.4.4 Erosion protection

### 3. POLICY FRAMEWORK

The topic of erosion protection is mainly treated by the environmental, land use and disaster management legislation. The Environmental legislation foresees a prohibition of activities and infrastructure that accelerate erosion; it promotes the protection and/ or recovery of degraded areas in fragile ecosystems by reforestation and defines coastal management practices and prohibitions.

The land use legislation also promotes the requalification of degraded areas. The INDC presents the reduction of soil degradation and promotion of trees planting as a measure.

Again, erosion protection is also envisaged through the mapping of disaster risk zones to be included in land use plans and through specific regulations for construction.

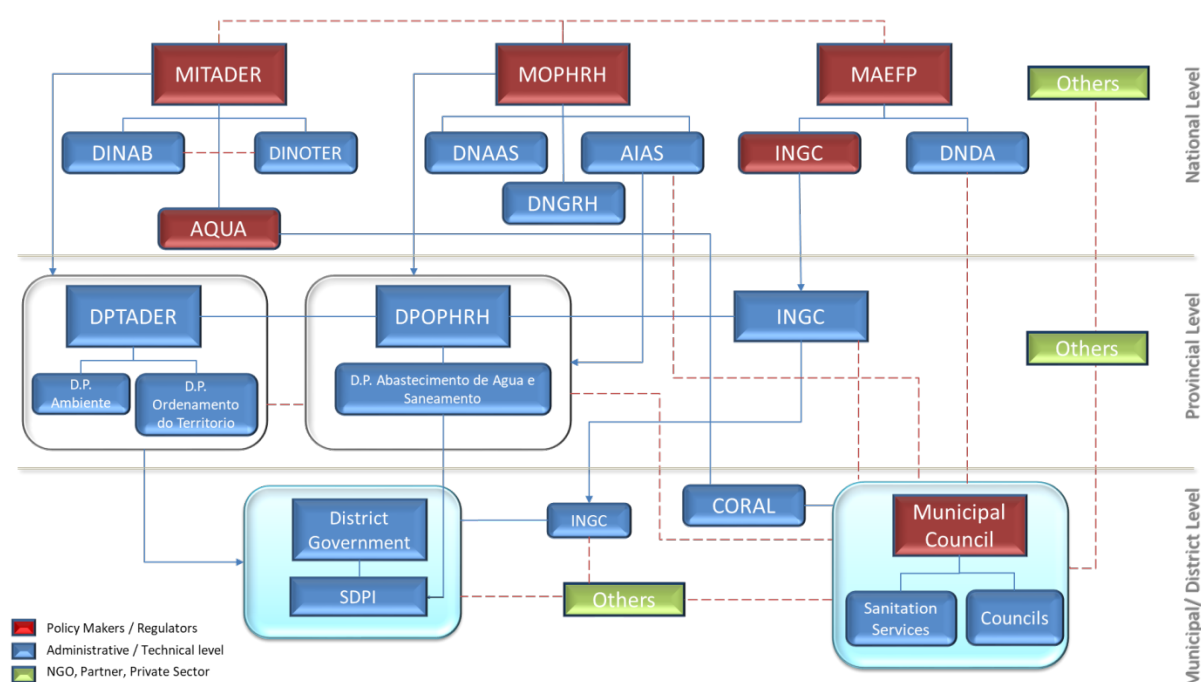
Accordingly, the legal framework for erosion protection shows that there is already a focus on nature-based solutions. This is not unexpected, considering that responsibilities fall mainly under MTA's mandate.

## 4 INSTITUTIONAL FRAMEWORK

The assessment of the legal framework already showed certain responsibilities of sectors, when it comes to the provision of legal norms and policies for the planning and implementation of flood and erosion protection measures. Accordingly, sector ministries and sub-national government institutions hold specific mandates that define their responsibilities and framework of action. To gain a general idea on those mandates for each sector Annex 4 shows an overview by the GoM where the areas of interest for (nature-based) flood and erosion protection are highlighted.

Figure 4-1 provides a map of all key institutions at the different administrative levels, which have a mandate in the elaboration and implementation of policies and local level measures in regard to nature based flood and erosion management. The following sections will concentrate on these key institutions, assessing their specific mandates, coordination mechanisms as well as gaps and potentials.

**Figure 4-1: Institutional map for nature based flood and erosion protection**



### 4.1 INSTITUTIONAL ASSESSMENT

#### 4.1.1 MTA – Ministry of Land and Environment

MTA's primary mandate is to promote the country's sustainable development through the implementation of the country's environmental policy, comprising the Environmental Strategy for Sustainable Development and the Climate Change Strategy with its adaptation plans. Its main activities are intersectoral coordination, research, planning and environmental management in conjunction with land-use planning and resettlement, supported by promotion, education and environmental dissemination, as well as inspection and supervision activities. In this context, it emerges as a policy enabler in these areas and as a focal point and coordinator of land degradation actions, as well as a national focal point for UN conventions to combat land degradation and promote climate change adaptation.

MTA, through the National Environment Directorate (DINAB), is mandated to promote techniques and initiatives to reduce land degradation and mobilize funds for the implementation of these initiatives. For example, in 2014, it organized a national conference to discuss land degradation in Mozambique. In the same period, under the coordination of Eduardo Mondlane University (UEM), with the involvement of the Engineering Laboratory, the Soil Sciences Department, construction companies and the Catholic

University of Mozambique (UCM), MTA conducted a study on the various methodologies to reduce soil degradation. From these studies, the erosion agents that occurred in Mozambique were studied, as well as the geotechnical, bathymetry and soil typology, the viability of the intervention plus the cost-benefit of interventions, mapping the most critical areas of erosion and drawing awareness of the risks to this exposure. In spite of all these efforts, there is an institutional recognition of limited technical capacity to apply green infrastructure solutions in the planning of projects aimed at land degradation. In most of their interventions the recommendations for the implementation of methods to reduce land degradation have been based on the application of conventional engineering methods.

**The National Directorate of Land Management and Resettlement, DINOTER**, promotes the development and implementation of land-use planning instruments. It mobilizes partners for the financing and implementation of these initiatives and provides technical assistance, leaving the implementation to the institutions with the relevant mandate. In the last five years, with the aim of making the Urban Structural Plans more sustainable, the issue of adaptation to climate change has been introduced at all stages of the elaboration and implementation of these instruments, and for this, DINOTER has the technical support of DNAB.

According to the representative interviewed by the Consultant, one of the biggest challenges in terms of legislation, which guides the institution in the execution of its activities, focuses on the fact that the Environmental Law, produced over 20 years, does not respond to the current challenges and needs a revision. In order to overcome obstacles regarding legislative gaps and for better guidance on the implementation of green / blue infrastructures, a proposal was made to use existing working groups or set up a new coordination mechanism to deal with these issues. At the same time, MTA should be involved more actively in the planning process of relevant projects. The other challenge in the implementation of green/ blue infrastructure solutions, according to the representative, is related to the lack of technical capacity at local level, with municipalities failing to comply with the structure plans elaborated by/with MTA. While the elaboration of these plans is done in coordination between MTA and the Municipalities, their implementation is of full responsibility of the Municipal Councils. One of the great challenges in providing follow up and continuity also has to do with the mobility of cadres on both sides.

With respect to coordination between MTA and municipalities, MTA provides technical assistance in the elaboration of urban structure plans and municipal management, as well as support in partnerships for the implementation of electoral manifests and priority setting, i.e. DINOTER elaborates the technical opinion of conformity of the instruments of territorial planning elaborated by the municipalities before their submission to and ratification by MAEFP, while MTA only supports the elaboration of these plans if the municipalities find themselves incapable to elaborate them alone.

**The National Fund for Sustainable Development, FNDS**, surged from the need for the adoption of sustainable development models in order to finance programs and projects that guarantee sustainable, harmonious and inclusive development meeting the Sustainable Development Goals (SDGs). The FNDS is supervised sectorally by MTA and financially by the Ministry of Finance.

The FNDS works in all areas that contribute to a sustainable, integrated and harmonious development of the country, with special focus on areas such as (i) Environment, (ii) Forests, (iii) Land, (iv) Climate Change, (v) Territorial Planning, (vi) Conservation, amongst others.

The FNDS was created with the vision of 2030 to be a national and international reference in promoting sustainable initiatives that lead to structural changes in the rural productive base. Although it is more oriented towards rural development, the FNDS can coordinate / finance any initiative in the field of sustainable development within the country. Examples include the Landfill Project for the Cities of Maputo and Matola, the Land Management Project and the 'Projecto Sustenta'.

In regard to the enabling environment for nature-based flood and erosion protection, the FNDS can provide support for (i) the management of financial resources of the relevant international Conventions (ii) mobilizing resources bilaterally and multilaterally for the implementation of sustainable development activities, (iii) financing projects of environmental management, climate change adaptation and



mitigation, sustainable forest management, biodiversity conservation, land management and land use planning and (iv) the financing of institutional development activities.

The FNDS is the focal point of the Green Climate Fund and the Green Environment Facility, with the responsibility of mobilizing resources at the national and international levels.

**The National Agency for Environmental Quality Control, AQUA**, created by Decree n°80 / 2010 and modified by Decree n°2 / 2016, is a governmental institution supervised MTA . AQUA is responsible for (i) supervising the land use, the implementation of land management tools for the exploitation of forests and environmental quality control; (ii) the development of environmental pollution surveys and the interpretation of environmental data; and (iii) the adoption and implementation of measures that improve environment research, monitoring and quality control. In the field of environmental quality audit and control, AQUA is responsible for proposing measures to prevent and mitigate environmental impacts and ensure compliance with the implementation of environmental management standards and procedures.

Overall, MTA is seen as a crucial player in the upscaling of nature-based flood and erosion protection and in providing guidelines to other sectors and Municipalities. It has the mandate to provide technical support and advice in the urban planning through DINOTER, to finance initiatives through the FNDS and to control the implementation of environmental standards and land use plans through AQUA. While in practice the Consultant sees the link between Municipalities and MTA as more sporadic, concentrated on specific initiatives and environmental licenses, an improved coordination in the elaboration of land use plans and a supportive involvement by DINOTER and AQUA would be beneficial for the improvement of municipal services in general and specifically in the planning and implementation of NBS for flood and erosion protection.

#### 4.1.2 MOPHRH – Ministry of Public Works, Housing and Water Resources

MOPHRH has the mandate to manage water resources (through DNGRH), waste water (through DNAAS), as well as for the prevention and mitigation of the impacts of floods and droughts. It is responsible for the elaboration and implementation of policies and strategies for the use of the national water resources and for the expansion and improvement of water supply and sanitation services, as well as defining the regime for the design, execution and supervision of public works.

The MOPHRH is represented at the provincial level by its provincial delegations and at the district level by the District Planning and Infrastructure Services. Given the magnitude of this ministry, combined with the complexity of its areas of action, there is strong technical capacity with skills and qualifications to master its activities, however, there is limited awareness, guidance and technical capacity to implement nature-based solutions.

In the field of public works and management of water resources, there are similar mandates with the municipalities but differing in their areas of coverage, there is also an overlap of instruments of the National / Provincial Directorate of Urbanism and Housing with those of the Municipalities regarding contingency plans, urbanization plans and local adaptation plans, but in many cases without harmonization.

**The National Directorate for Water Supply and Sanitation, DNAAS**, is an institution supervised by the MOPHRH, responsible for aspects related to national policies and strategies for expansion and improvement of water supply and sanitation systems and promotion and mobilization of resources for its implementation. Its functions are to (i) Propose and ensure the implementation of policies, strategies, standards, regulations and technical specifications for water supply and sanitation, as well as water supply and sanitation programs; (ii) Promote investments for the construction, maintenance and expansion of water supply and sanitation infrastructures, (iii) Elaborate rainwater drainage standards in rural and urban settlements, and monitor their compliance; (iv) Ensure a balance in access to water supply and sanitation services; (v) Encourage the participation of the private sector in the provision of water and sanitation services, including public-private partnerships, (vi) Harmonize plans and actions to ensure universal access to water and sanitation; (vii) Provide technical and methodological support to local governments and (viii) Update and disseminate strategies for water supply and sanitation.

The management of sanitation services is the responsibility of local authorities, DNAAS promoting the creation of autonomous sanitation units, such as EMUSA in Quelimane. It is further the responsibility of DNAAS to ensure adequate technical and financial assistance and to monitor and follow up on the implementation of local water, sanitation and drainage initiatives.

**The National Directorate for Water Resource Management, DNGRH**, has the mandate to: (i) Propose policies and strategies for the development, conservation and use of water resources in the river basins, (ii) Promote investments for the construction, maintenance and expansion of infrastructure for the management, protection and retention of water, (iii) Drafting legislation and the regulatory framework on water resources, monitoring and enforcement thereof, and (iv) Propose the definition of protection zones and areas prone to floods and droughts, among others. In regard to the latter DNGRH can also propose relevant structural and non-structural protection measures, however their implementation in rural and urban areas is under the responsibility of DNAAS.

**The Water Supply Regulatory Council, CRA**, was constituted as an entity of public law with legal capacity and administrative, financial and patrimonial autonomy. CRA is responsible for ensuring a balance between the quality of water supply and sanitation services provided, the interests of users and the economic sustainability of water supply through economic regulation. This means that CRA performs functions of regulating public water distribution and wastewater drainage systems according to their specific technical conditions and management.

CRA is also responsible to regulate the autonomous sanitation systems, implemented through the local agents CORAL who are appointed with the local authorities. While Municipalities with autonomous sanitation services receive regulatory standards through CRA (within a regulatory framework), those Municipalities without such entities may still consult CRA without binding regulations. The CORALs report monthly to CRA and the Municipalities on the performance and activity of local operators.

**The National Water and Sanitation Administration, AIAS**, holds the mandate to manage the assets of the secondary public water distribution and wastewater as well as stormwater drainage systems and to promote the participation of the private sector in the management of water supply and sanitation systems.

AIAS is responsible for the planning and implementation of drainage infrastructures in municipalities, with the role of procuring the design and construction of primary and secondary drainage channels and handing over the management to municipal bodies. Despite its large team of specialized technicians at the central level, the institution recognizes that still little in-house expertise exists on the use of nature-based solutions for the construction of drainage ditches and other floods and erosion protection measures. Most of its technicians are engineers in the field of conventional hydraulic engineering, without much experience in implementing projects based on natural solutions.

In terms of coordination with municipal structures, there is a strong link between this institution and the municipalities, AIAS being responsible for the implementation of water and sanitation investments and providing related technical assistance to municipalities.

AIAS was selected as the implementing institution of the Cities and Climate Change project financed by the World Bank, under which it is implementing a variety of projects the projects, including conventional and hybrid drainage infrastructure. It is in this role and with growing know-how that AIAS is becoming the lead national institution in the promotion of nature-based flood protection solutions.

One of the great challenges verified by AIAS in the implementation of nature based/ hybrid solutions relates to the complexity of the projects, especially in regard to balancing environmental and social impacts with engineered solutions. In this regard, national and project-specific local level coordination with MTA and INGC would present an option to improve these aspects and provide feedback and develop a coherent approach for NBS at the national level.

In summary, the DNAAS, CRA and due to its experience particularly AIAS are important institutions in regulating and supporting the planning and implementation of urban flood protection infrastructure in terms of storm water drainage systems. Currently, new drainage standards are being developed by these institutions with involvement of other sectors. While the Consultant has no information on the

relevance of NBS for these new standards this process presents a good opportunity to promote and guide the use of green or blue drainage infrastructure.

#### 4.1.3 MAEFP – Ministry of State Administration and Civil Service

The MAEFP constitutes the guiding institution of the decentralization process, for the support, the administrative supervision and development of the local public administration. It is the only national Ministry having a direct link to all Municipalities and providing technical assistance to as well as monitoring the Municipal Councils.

While legally, the MAEFP also holds the mandate to coordinate all Disaster Risk Management activities, these competencies are fully transferred to the INGC.

The role of MAEFP includes: (i) Implementing and directing the development process of local authorities, (ii) Developing and implementing standards on the attributions, competencies and structuring of local government, (iii) Providing technical assistance to local authority bodies; and (iv) Promoting the training of municipal officials in administration.

It is furthermore the responsibility of the MAEFP to ratify all plans / instruments of territorial planning (*Plano de Estrutura Urbana, Plano Geral de Urbanização, Plano Parcial de Urbanização, Plano de Pormenor*), except for their financial part. The approval of these plans is preceded by a technical opinion of compliance, issued by the National Directorate of Autarchic Development (DNDA), which together with the municipalities, has the role of supervising technical implementation of laws.

**The National Directorate of Autonomous Development, DNDA**, is one of the MAEFP's organizational units and has the responsibility of: (i) Preparing the administrative acts of the Minister, within the scope of administrative protection over local authorities; (ii) Preparing proposals for norms on the functioning of local authorities; (iii) Providing technical assistance to local authority bodies; (iv) Planning actions for the implementation of local authorities; and (v) Carrying out orientation studies for the municipalities in the scope of municipal strategic planning and vision of the autarchic and urban development in a long-term perspective. DNDA's Department of Local Government Development assists in the elaboration and ratification of the development plans, land use plans and personnel of local authorities.

For the promotion of nature-based flood and erosion protection, urban plans play a crucial role, so that MAEFP/DNDA should also be involved in discussions on its upscaling. Nevertheless, the technical advice on the inclusion of NBS is seen more under the mandate of MTA during the elaboration of such plans.

#### 4.1.4 INGC – National Institute of Disaster Risk Management

INGC is the national institution responsible for disaster risk management, mandated to coordinate all actions for disaster prevention, mitigation, response, post-disaster rehabilitation and the development of arid and semi-arid zones. Its activities are focused on (i) coordinating emergency actions, creating a culture of disaster prevention, defining legal norms on prevention, protection of human lives and the reuse of arid and semi-arid areas; (ii) coordinating actions for the resettlement of populations living in disasters; (iii) multisector coordination between emergency response bodies and institutions; and (iv) disaster management coordination, rescue and other measures to minimize adverse effects and reestablish normality.

With the approval of the new normative and legislative framework in recent years, INGC's focus has moved towards disaster risk management instead of concentrating only on disaster response. Assuming transversality of disaster risk reduction, INGC strives to coordinate with all stakeholders in the area of disaster management, whether government institutions, private sector, NGOs, humanitarian staff, academia, or civil society organizations.

One of INGC's roles is to promote training courses in disaster management for public, private and other entities, especially at the local level. The Government of Mozambique has approved the legislation on buildings and other works to make them more resilient to the impacts of floods, cyclones, fires, among others. Furthermore, provincial governments and local authorities are responsible to define disaster risk

zones in coordination with INGC, where construction of infrastructure is limited to those applying appropriate building technologies.

There is an effort by INGC to increasingly integrate disaster risk reduction into municipal development plans, what started with the creation and training of Emergency Operation Centers (COE). In 2018 INGC in partnership with USAID through the Climate Change Adaptation Program (CCAP) created the COEs of the Municipalities of Pemba, Nacala and Quelimane and strengthened their coordination capacity ensuring operational readiness in the event of a disaster. Furthermore, the INGC with the United Nations Development Program (UNDP) provided technical assistance to the Provinces of Gaza, Nampula and Cabo Delgado to guide the integration of DRR in the local development plans.

#### 4.1.5 ARAs – Regional Water Administrations

The ARAs are regional institutions under the administration of the MOPHRH, holding the mandate to manage river basins in a sustainable way, controlling the levels and flows and providing water use rights. They also propose the definition of protection zones according to the law.

The regional ARAs are supposed to include Municipalities in the management of river basins, in order to improve the quality of water and increase the benefits of sustainable water management for the urban population. Although the institution recognizes that it has no role in implementing nature-based solutions which is out of their mandate, ARAs are a source of data and can support the implementation of measures related to river basins.

#### 4.1.6 Municipal Councils

The Municipal Councils are the local autonomous governments, with a locally elected Mayor and Municipal Assembly. Their mandate comprises the management of the urban space in the construction sector (Housing, roads, drainage, sanitation), transport, environment - including green spaces, beaches, solid waste management - among others (see Annex 4).

Municipal Councils have an administrative and financial autonomy. Due to a variety of factors, there is however a low capacity of Municipalities generating sufficient own revenues to cover their expenses. Therefore, state transfers of an average 65% constitute the municipal budgets. This lack of funds has serious implications on the quality of public services, when it comes to the availability of qualified staff (and staff turnover) and the financial capacities to invest, operate and maintain urban infrastructure.

The main responsibilities of Municipalities – when looking at NBS for flood and erosion protection – include the urban planning and land use management (incl. elaboration and implementation of urban plans and sanitation master plans), infrastructure management (particularly drainage and coastal protection) as well as environmental management. Land use plans as well as sanitation master plans should identify protection zones and disaster risk zones, defining the relevant conditions and interventions for the development of these areas. Nature-based solutions can and should be considered in these plans in order to improve degraded areas and transform risk areas into safe areas, where appropriate.

According to a representative of DNDA, the great challenge that municipalities face in regard to an appropriate urban planning is related to lack of funds, limited technical capacity and weak interpretation of the laws, which means that many urban plans are not approved. Municipalities often contract consulting services for the elaboration of spatial planning instruments. In that progress, the required interaction with MTA is mostly disregarded with the risk that plans are not approved by MAEFP.

**Autonomous municipal sanitation services**, where existent, are the entities responsible for the improvement, operation and maintenance of waste water drainage as well as storm water drainage systems. They may also, as is the case with EMUSA in Quelimane, be in charge of the solid waste collection, amongst other activities (see organigram of EMUSA in ANNEX 5). These services could use NBS for small-scale drainage measures. At the same time, they are the entities to be capacitated when working with larger investments into green or blue infrastructure, looking at the experience of the Chiveve rehabilitation in Beira.

In general, limited financial and human resources are posing major challenges for municipalities to deliver public services of good quality and to comply with their urban plans. In the area of flood prevention, larger investments for the rehabilitation of primary and secondary drainage channels are therefore only viable through the national level. Also, for erosion reduction, investments for sea groynes and other conventional infrastructure require national level or international funding. In order for Municipalities to be able to plan improvements of their public infrastructure in a consistent and financially viable way, nature-based solutions can present a good alternative.

The municipalities of Quelimane and Nampula in recent years had benefited from small projects to implement NBS for flood and erosion protection. The Municipality of Quelimane created the municipal sanitation company EMUSA, an autonomous company that also takes care of green infrastructures and manages related projects, dealing with the afforestation of the city. In partnership with NGOs, DPTA and universities EMUSA is engaged in the reforestation of mangroves. In return, the company benefited from a USAID-funded project to implement green infrastructure for flood and erosion protection. In the Municipality of Nacala-Porto, two units were established: the Environmental Management, Water and Sanitation Service and the Service of Arborization and Gardening, for the production of nursery plants. These initiatives were funded by the Government of Finland and aimed at developing skills in dealing with erosion, environmental management, nursery production (> 500,000 plants per year) and environmental education.

Despite the existing experience in implementing projects of this nature at local level, the two municipalities show limited ability to mobilize funds, possibly due to their weak capacity to prepare technical and financial proposals. For example, given the high levels of erosion that exist in some parts of the city of Nacala-Porto, private-sector companies expressed an interest in financing erosion control projects to minimize the impacts this situation has on their properties. However, no project has yet been submitted and there is continuous land degradation in these areas.

Asked about possible conflicts of mandates in the implementation of this type of measures, representatives from both municipalities stated that the planning and implementation was done in coordination with national and provincial institutions, i.e. DPTA, MOPHRH, INGC as well as the SDPI. On the other hand, they point out that intergovernmental coordination generally is a challenge, having no clear coordination mechanisms set out.

One of the tools used as a guideline for implementation of green / blue infrastructure are the local adaptation plans (PLA), which define strategic actions. The PLA is guided by the National Strategy for Adaptation and Mitigation of Climate Change, coordinated by MTA / DPTA, with the participation of a multi-sectorial government team, made up of DPOPHRH, MTA, INGC, local universities and cooperation partners.

It should be noted that there is no obligation for municipalities and local and central bodies of the State to establish partnerships, it is up to both to reach this consensus and establish such partnerships to better pursue the public interest.

## 4.2 INTER-INSTITUTIONAL COORDINATION

Having touched already some of the existing and lacking coordination mechanisms in the previous section, the following shall provide an overview of the inter-institutional coordination and how this is relevant for upscaling NBS, guaranteeing a consistent approach, quality control and support.

Environmental protection, climate change adaptation and disaster risk reduction are considered cross-cutting issues. In consequence, many institutions include specific objectives and measures in their policies, plans and actions. In Mozambique, MTA is the coordinating institution of environment affairs and climate change adaptation, while INGC is the coordinating institution for disaster risk management. The above assessment showed that also the water sector is active in regard to flood risk reduction, being DNAAS and AIAS with its mandate for improving urban drainage. At local level, Municipalities have autonomy and with it come mandates that cover all areas from environmental protection, land use



management, climate change adaptation and disaster risk reduction and urban infrastructure (incl. drainage). This variety of institutions demands good coordination to allow the application of high-quality approaches, continuity and a joint learning process.

There is an institutional awareness of the existence of gaps in the co-ordination of DRR-related activities, incl. flood and erosion protection, attributed to the fact that many sector policies and programs include DRR but are elaborated and implemented only by the corresponding sector. According to an INGC representative, there is weak bilateral cooperation and inter-institutional coordination on certain initiatives. In regard to the use of NBS, the interviewee sees a lack of experience in using green / blue infrastructures.

The coordination with Municipalities in this context is mostly related to the elaboration of urban plans and the regulation of water infrastructure, besides the financing or specific technical support of local initiatives.

Nevertheless, inter-institutional groups exist who address topics of climate change adaptation/resilience, disaster risk reduction and more specifically flood protection. Their objectives, memberships and functioning are presented below.

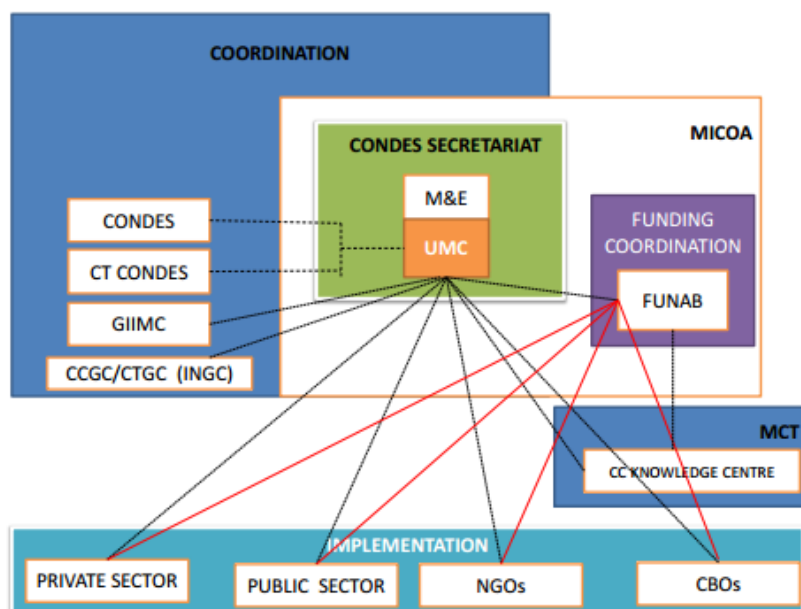
#### 4.2.1 CONDES

The key entity for the coordination of environmental and climate change policies and activities is CONDES, a multi-sectoral technical council chaired by the Prime Minister, represented by MTA, MEF, MADER, MISAU, MIC, MTC, MOPHRH, MMAIP, MIREME and MICTUR. The secretariat of CONDES is under MTA's responsibility and funds for its operation go through MTA. CONDES has a Technical Council (TC-CONDES) composed of technical staff from the ministries mentioned above, the private sector and representatives of NGOs whose mandate is to provide technical advice.

In 2011, the government created an Inter-Institutional Group for Climate Change (GIIMC) under the supervision of the CONDES secretariat to provide advice and recommendations specifically on issues related to climate change. The GIIMC is represented in the CONDES Technical Council and in many cases the same technical personnel participate in CT-CONDES and GIIMC.

In 2012, the government approved the National Strategy for Adaptation and Mitigation of Climate Change (ENAMMC), which is mandated to create new institutions. This included the creation of the Climate Change Unit (UMC) located in the CONDES Secretariat since 2013. ENAMMC also recommended the creation of the Council on Knowledge Management on Climate Change (CGCMC) which is located in the Ministry of Science and Technology, Higher and Vocational Education (MCTESTP). The main reason for creating these two institutions is that there were no dedicated and specialized units to oversee the coordination of climate change interventions or to document or disseminate climate knowledge. The GIIMC created in 2011 is only an inter-institutional advisory body. The UMC is technically advised by the GIIMC, CGCMC, CONDES and CT-CONDES and additionally by INGC's Technical Council for Disaster Management (CTGC). UMC therefore presents a key coordination unit for upscaling nature-based flood and erosion protection measures.

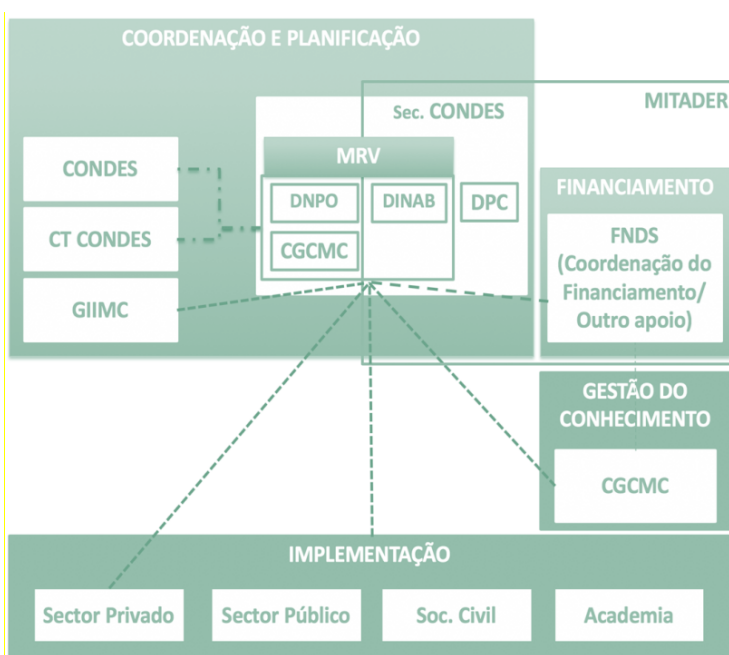




**Figure 4-2: Climate change institutional architecture** (Source: Artur&Tellam, 2013, based on Micoa, 2012)

Although institutions for climate change coordination were established, the institutional articulation and the legal framework are still pointed out as barriers to the effective implementation of policies, programs and strategies. In particular, the "extinct" CONDES and FUNAB, today FNDS, whose statutes have been recently adjusted, still need to be operationalized to fulfill their new functions related to the coordination and financial management of climate change funds.

In an attempt to overcome these challenges, the MTA through DINAB presented a proposal to restructure the functioning of the institutional climate change framework (Figure 4-3). This proposal has been submitted to the Council of Ministers in October 2018.



**Figure 4-3: New institutional Climate Change Coordination Arrangement (proposal submitted to Council of Ministers)**

The major difference between this proposal and the previous set-up is as follows:

1. CONDES and CT-CONDES are now chaired by the Minister of MTA, all documents going to the Council of Ministers first passing through CONDES. The CT-CONDES serves to prepare the documentation that is taken to the Council of Ministers.
2. A mechanism to Measure, Report and Verify (MRV) is established that allows collecting information on each thematic area to analyze the compliance of commitments.
3. In the mitigation component, 4 thematic areas are created with the aim of designing and implementing projects, coordinated by the key sectors: energy (by MIREME); industrial processes (MIC), agriculture, forestry, land use and waste. Previously this process was led by the former MICOA (current MTA) with challenges in collecting sectoral data.
4. In the adaptation component, 9 thematic areas were created; (i) Adaptation of climate risks, (ii) Climate risk reduction, (iii) Water resources, (iv) Agriculture, Fishing, Food Security and Nutrition, (v) Social protection, (vi) Health, (vii) Biodiversity (viii) Forests and (ix) Infrastructure. All sectors must report on their commitments in the implementation of adaptation actions for the period from 2020 to 2025.

The Knowledge Management Center on Climate Change (CGCMC) is an institution to be created and hosted in the Mozambique Academy of Sciences of the MCT, based on the existing entities and thematic groups, with the aim to collect and disseminate the knowledge of the different institutions. The CGCMC is also responsible for quality assurance of national proposals prepared for the mobilization of climate funds. The Center will operate through the Climate Change Network consisting thematic areas such as: coastal areas, fishing and tourism; climatic modeling; communities and local knowledge; water resources; biodiversity and ecosystems.

#### 4.2.2 Technical Council for Disaster Management (CTGC)

The CTGC is chaired by the General Director of the INGC and is composed by the National Directors from the relevant sectors, appointed by the Ministers who are members of the Disaster Management Coordination Council (CCGC). The CTGC's main responsibility is to coordinate the sector's alert and early warning systems on the imminence of hydrometrics, geological, epidemic and food security disasters and ensure the multi-sector implementation of different plans within aiming at reducing the vulnerability to and risk of disasters (Figure 4-4).

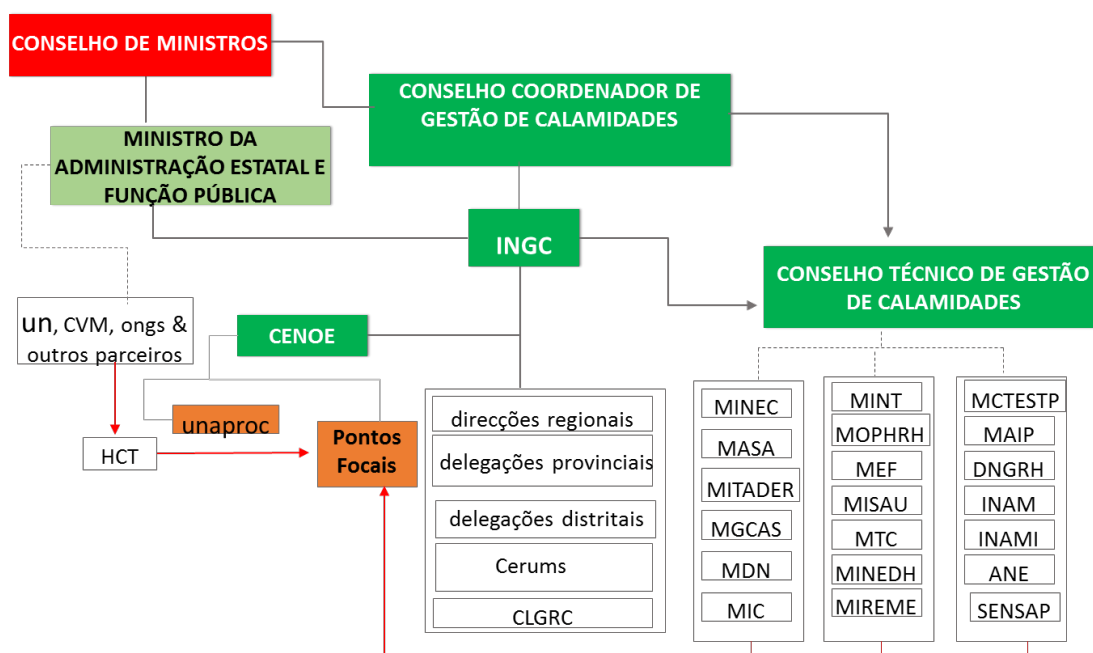


Figure 4-4: Disaster Management Coordination Mechanism (Source: INGC)

This structure is replicated at the provincial, district and it is being disseminated to municipality (Recently created in Pemba, Quelimane and Nacala) levels where the technical councils report to the Provincial Governor, district administrators and municipality mayors respectively. The CTGC meets ordinarily once a month and extraordinarily whenever the INGC's General Director convenes it. Representatives from the cooperation partners, HCT, civil society and the private sector may be invited to the CTGC meetings.

### 4.2.3 Water and Sanitation Coordination Mechanisms

The **National Water Council (CNA, Conselho Nacional de Águas)** was created through the Water Law of 1991 and Decree nº 25/91, foreseeing it as the main coordination mechanism in regard to water management. It was founded as an advisory commission related to water management and water policy implementation consisting of the MOPHRH, MADER, MIC, MIREME, MINEC, MAEFP, MISAU and MTA. In that regard, the CNA is mainly responsible to guide the preparation of policies, for which it may create special working groups. There are no regular meetings of the CNA and accordingly it is not active on a continuous basis. For this reason, it cannot be understood as an overall coordination mechanism of water and sanitation activities. For the enabling environment of NBS, it is only of relevance in the actual policy making process.

A working group of interest is the **Multisector Sanitation Group**, led by MOPHRH, composed by MINEDH, MISAU, MTA, MAEFP, MICTUR, MEF, Municipalities and cooperation partners (UNICEF, World Bank, Water Aid and WSUP). Created in 2011, this mechanism aims to guarantee the implementation of the National Campaign on Environmental Sanitation and Hygiene Promotion (CNSMPH) and to represent the country and follow up the decisions reached in international commitments related to water and sanitation issues. The meetings of the group are held in a rotating way among the institutions involved, as a means of guaranteeing the commitment of all. It is the responsibility of the members of the Multisector Sanitation Group to ensure the implementation and monitoring of the following priorities: (i) Improve the institutional framework and strengthen national and local institutions in implementing multisector sanitation programs – MAEFP and MEF responsible, and (ii) Accelerate the provision and sustainability of sanitation services - MOPHRH, MISAU, MINEDH and MTA

**The Subsector Water and Sanitation Group (GAS)**, chaired by DNAAS, was created with the aim of providing a forum for consultation to reach the water and sanitation goals in the country expressed in the Government's Five-Year Plan (PQG) and the Sustainable Development Goals (SDG). GAS is made up of representatives of the Government (at national and provincial level), municipalities Provincial Directorates of Public Works and Water Resources, representatives of potential water / sanitation partners / donors, qualified professionals, to provide support and actively participate in group meetings. WaterAid assumes the role of Secretary of the Group, meeting the last Friday of each month, the venue changing among the Group members. The convocation, agenda and discussion papers are usually sent to members 7 days in advance of each meeting date. Each year a national meeting is held and the Group is encouraged to hold these meetings in the provinces in line with the technical visits proposed in the annual activity plans, in order to share the experiences between the national, regional and municipal levels, as well as collect evidence on the effective implementation of the policies and programs of the sector in these regions.

### 4.2.4 Other Multisector Working Groups

Other coordination mechanisms exist at national level that can contribute in a certain way to a favorable environment for nature-based flood and erosion protection solutions.

**UN Conventions working groups** have been set up, as mentioned under 4.1.1. Although these groups have already been reduced and transformed into only 3 groups, their communication and coordination remain a great challenge. According to our interviewees, the only group that still functions is the climate change group, even though it is not meeting periodically. The Consultant has been informed that the biggest challenge is the lack of funds to carry out group meetings, so they only meet when there is a specific issue that needs to be addressed. In a systematic way, the climate change group, for example, meets in preparation for international conferences (COP, Pre-COPs). At other times, it may meet in ad-

hoc ways to resolve matters within its mandate. The other groups end up joining the group to access the funds that may exist in the climate change group.

A coordination mechanism which may have relevance in some cases is the **multi-sectoral technical committee to monitor and supervise the resettlement at national level**, which was set up in view of the need to operationalize resettlement processes resulting from economic activities, under Decree No. 31/2012 of 08 August. It consists of two members of MTA, a member of the MAEFP, a member of MOPHRH and a member of MADER. At the provincial level, this commission is made up of the provinces that oversee the areas of: land management (DPTA), Public Works (DPOPHRH), agriculture (DPADER) and Social Action (DPGCAS) and at the district level, District Planning and Infrastructure Department (SDPI), Director of District Services for Economic Activities (SDAE), Director of Health and Social Services, representatives of the population, a representative of civil society, the private sector and community leaders. Whenever the need to involve a key sector is justified, representatives of other sectors, specialists or individuals of recognized merit may be invited to discuss the work of this committee. This committee meets monthly at the committee's headquarters.

#### 4.2.5 Relevance of existing coordination mechanisms

When looking at the practice of implementing nature based or conventional flood and erosion protection measures in Mozambique, the above coordination mechanisms are so far not involved. One example is the Green Urban Infrastructure Project in Beira, implemented by AIAS and coordinated with the Municipal Council of Beira. AIAS is not a permanent member of the above working groups, while it is a key institution for the implementation of (nature based) flood protection measures. While information on the Chiveve/ Green Urban Infrastructure Project in Beira may have reached inter-institutional coordination and working groups, the planning and implementation of the project only involved the main project stakeholders. Activities and experiences by AIAS would thus need to be channeled through MOPHRH at national level or the DPOPHRH at provincial level.

At the same time, Municipalities are often not represented in national coordination mechanisms. There is local knowledge on social, economic, environmental and administrative challenges and possible solutions in regard to the implementation and operation of conventional and partly also nature-based flood and erosion protection that needs to be channeled to the national policy-making level. For the sanitation sector, the two working groups GAS and the Multisector Sanitation Group are platforms where Municipalities participate and can contribute or request support in regard to flood protection.

Looking at nature-based flood and erosion protection, there is no functioning coordination mechanism in place so far to discuss this topic amongst all sectors. CONDES – once revitalized – would present this opportunity. However, at the moment, only the two sanitation working groups were identified, providing the advantage of having a large range of institutions from policy making and implementation level.

Nonetheless, the Consultant found that there is competition over limited resources among some institutions, resource constraints, high staff turnover and a general lack of human resources. The context of 'overspecialized' coordination at national level and only project-specific vertical coordination between national and local level is generally not providing an environment of mutual learning and strategic policy making. In order to enable the upscaling of NBS, it will be necessary to involve key institutions from all levels to discuss the most appropriate communication and coordination strategy.

## 5 GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

The above assessment of the legal and institutional framework suggests that gaps and conflicts exist, particularly in regard to the institution's mandates. An overview on each institution's mandates and identified gaps is provided under Table 5-1, at the same time pointing out potentials for the upscaling of nature-based flood and erosion protection.

The analyses of the legislation as enabling environment for nature-based or hybrid flood and erosion protection showed that most of the laws and policies from different sectors do not specify the use of natural solutions, except reforestation for erosion management. In many legal documents, the identification of protection zones and mapping of disaster risk zones is prioritized, but without clear regulations on these procedures (see 3.4.1 and 3.4.2). Furthermore, the transformation of risk areas in safe places is promoted, however without providing guidance on what measures should be applied particularly in regard to the establishment or protection/upgrading of green / grey infrastructure.

While no conflicts were found in regard to national regulations for the use of conventional or nature-based flood and erosion protection measures, a weak interpretation at local level and thus possible conflicting urban regulations and plans were identified as the major challenge. Existing gaps contribute to the misinterpretation of the legal instruments and to failures in their implementation.

The degree of implementation of the legal framework largely depends on the availability of human and financial resources at local level. In recent years the government has adopted many policies and strategies on governance, environment, climate change and disaster risk reduction, increasing the challenge for Municipalities to guarantee their compliance. Municipalities often lack the technical capacity to fully adopt national laws and policies in their planning instruments. Furthermore, the means to invest properly in public infrastructure are highly limited, depending largely on national funds for investments.

Another critical issue presenting a major gap is the lack of general coordination mechanisms. Uncoordinated policies and activities create a competition among institutions for funds, visibility, knowledge and human resources. While the legal framework promotes coordination between different sectors and between national and subnational level, the mechanisms in place do not seem to lead to the intended objective. This results in Municipalities not requesting and receiving appropriate technical and financial support by national or provincial level institutions.

Based on the potentials described in Table 5-1, the consultant hopes to partly overcome the identified gaps and conflicts. The aim is to make use of the key institution's technical expertise, to:

- Discuss approaches and best practices between different sectors,
- Create guidelines for erosion and flood protection NBS,
- Increase assistance and funding to Municipalities and
- Improve overall coordination.

From the institutional analysis presented throughout this document we can note that an enabling institutional landscape exists and is being reinforced. With the creation and restructuring of several institutions with specific mandates that can contribute to a favorable environment for the implementation of the NBS, such as AIAS, DNAAS, DNGRH, AQUA, FNDS, DNDA, DINOTER and INGC, a window is opening for the integration of flood and erosion reduction measures through NBS. Although there is an increasing need to explore the mechanisms for co-ordination between these institutions in order to facilitate NBS integration, at the same time recognizing that inter-institutional coordination in the highly dynamic field of climate change needs some time to consolidate.

Table 5-1: Assessment of Mandates, Gaps and Potentials

Institution	Decree	Relevant Mandates	Importance for NBS	Conflicts, Gaps & Potentials (P)
MTA (incl. DPTA)	Presidential Decree 13/2015 (defines the competences of MTA)	<ul style="list-style-type: none"> <li>- <b>Leads, coordinates and controls execution of politics in areas of Land, Conservation, Forests &amp; Wildlife, Environment</b> and rural development</li> <li>- Participates in the <b>definition of sector norms</b> regarding sustainable management of natural resources</li> <li>- Promotes <b>inclusion of climate change and biodiversity in sector policies</b></li> <li>- Promotes integrated and <b>sustainable urban and coastal management</b></li> <li>- Ensures community participation in <b>co-management of natural resources and ecosystems</b></li> </ul>	<ul style="list-style-type: none"> <li>- Norms of <b>land management for protection and risk areas</b>, incl. wetlands</li> <li>- <b>Lead institution for coastal and in-land erosion protection measures</b></li> </ul>	<ul style="list-style-type: none"> <li>- Urban land management under mandate of Municipal Councils</li> <li>➔ Often with low urban planning and control capacities</li> <li>➔ Coordination in elaboration of Urban Plans exists (Planos de Estrutura), but not for implementation/monitoring</li> </ul> <p>Improve Municipal understanding and capacity for integration of flood and erosion risk assessment into municipal land-use planning instruments</p> <ul style="list-style-type: none"> <li>- Local erosion protection initiatives by Municipalities and communities/ NGOs not always coordinated with MTA and provincial representatives</li> </ul> <p>Strengthen and enforce the implementation of municipal land-use planning regulations that ensure NBS protection, promotion and scale-up.</p>
	Decreto n.º 6/2016 (Creates the FNDS, <i>Fundo de Desenvolvimento Sustentável</i> ,)	<ul style="list-style-type: none"> <li>- Channels financing to local level for environmental initiatives (replaced FUNAB)</li> </ul>	<ul style="list-style-type: none"> <li>- Source of funding for nature based flood and erosion protection measures, considering limited financial resources of Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>- Mainly for rural areas, creating a gap for municipal funding</li> </ul> <p>MTA.</p> <p>Insure adequate funding mobilization and allocation to NBS from several nature-related public funds managed by different line ministries such as Environment (FNDS), Tourism (FUTUR), Fisheries (Fundo Azul).</p>



## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

<b>AQUA</b>	Decreto nº80/2010 e alterado pelo Decreto nº2/2016	<ul style="list-style-type: none"> <li>- <b>Supervises land use practices</b>, implementation of spatial planning tools for the exploitation of forests and environmental control;</li> <li>- Proposes measures to prevent and mitigate environmental impacts and ensure compliance with environmental standards.</li> <li>- Collects and interprets data on main environmental components;</li> <li>- Adopts and implements measures aimed at improving the capacity for research, monitoring and quality control of the environment.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Control of and support to Municipalities in urban planning</b> with focus on environmental components</li> </ul>	<ul style="list-style-type: none"> <li>- Monitoring, Reporting and Verification Mechanisms (MRV) under discussion, a proposal suggesting that all climate change adaptation &amp; mitigation projects must pass through AQUA.</li> </ul> <p>Strengthen national capacity for reporting, M&amp;E on integration, protection and promotion of NBS as part of the overall implementation of environmental legal, regulatory and policy frameworks at national, sector and local levels.</p>
<b>MOPHRH</b> (incl. DPOPHRHs)	Resolução nº. 19/2015, de 17 de Julho (Approves the organic statute of the MOPHRH)	<ul style="list-style-type: none"> <li>- Elaborates policies and strategies for the sustainable management of water resources, as well as for the <b>prevention and mitigation of the impacts of floods and droughts</b>;</li> <li>- Defines the <b>framework for the design, implementation and supervision of public works</b>;</li> <li>- <b>Directs the planning of the construction of public works</b>, ensuring the effectiveness of investments;</li> </ul>	<ul style="list-style-type: none"> <li>- National level guidance of water resources management, incl. flood prevention;</li> <li>- Defines overall <b>parameters for public works, which also apply for public erosion and flood control infrastructure</b></li> <li>- Promotes public-private partnerships in the construction and management of water retention, protection and storage</li> </ul>	<ul style="list-style-type: none"> <li>- For public works and water resources management Municipalities have specific mandates regarding planning, implementation and operation of urban infrastructure. These should not conflict with national standards; however, deviations occur.</li> <li>- NBS so far is not a relevant issue for public works, AIAS being the exception (see below)</li> <li>- Coordination between MOPHRH and the Municipalities should be realized through the provincial level, but the autonomous status of Municipalities foresees little interlinkage. For large public</li> </ul>

## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

		<ul style="list-style-type: none"> <li>- Regulates the use and quality control of materials and construction elements;</li> <li>- Implements policies and strategies for the expansion and improvement of water supply and sanitation services;</li> </ul>	<p>systems (however oriented towards large scale dams);</p>	<p>works DPOPHRHs can be involved for inspections.</p> <p>Strengthen the integration of NBS for flood protection in water resources management legislation, regulations and policies</p> <p>Improve the understanding and capacity for integration and scale-up of NBS through national, regional and local water resources development plans</p>
<b>DNAAS</b>	Resolução nº. 19/2015, de 17 de Julho (Approves the organic statute of the MOPHRH)	<ul style="list-style-type: none"> <li>- Proposes and ensures the implementation of policies, strategies, standards, regulations and technical specifications for water supply and sanitation, as well as programs;</li> <li>- Promotes investments for the construction, maintenance and expansion of water supply and sanitation infrastructures;</li> <li>- Harmonizes plans and actions to ensure universal access to water supply and sanitation services;</li> </ul>	<ul style="list-style-type: none"> <li>- Involved in the <b>elaboration of stormwater drainage norms</b> in rural and urban settlements and in monitoring their compliance;</li> <li>- <b>Provides technical and methodological support to Municipalities;</b></li> </ul>	<ul style="list-style-type: none"> <li>- Few municipalities present a municipal sanitation and drainage posture;</li> <li>- There is still no specific sanitation regulation that addresses fully the issues of drainage and sanitation;</li> <li>- The redefinition of drainage patterns is in process;</li> </ul> <p>Improve the integration of NBS on water and sanitation law, regulations and policies and ensure its harmonization with existing and future environmental, Municipal and related natural resources management legal, regulatory and policy frameworks.</p> <p>Strengthen the role and capacity of Municipalities for implementation of NBS for flood control and sanitation improvement</p> <p>Promotion and adoption of NBS as priority/alternative measure for flood and erosion risk management at sector, provincial, district and</p>

## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

				municipal levels
<b>CRA</b>	Decreto n° 74/98 de 23 de Dezembro (Creates the CRA)	<ul style="list-style-type: none"> <li>- Regulates public water supply, wastewater and storm-water drainage systems.</li> <li>- <b>Regulates autonomous sanitation systems</b>, implemented through the local agents CORAL</li> </ul>	<ul style="list-style-type: none"> <li>- Includes <b>regulation and support for better Municipal stormwater drainage management</b></li> </ul>	Improvement of sanitation sector regulations to ensure integration and compliance with NBS best practices in the design, operation and management of water supply and sanitation systems
<b>AIAS</b>	Decreto n.º 19/2009, de 13 de Maio (Creates AIAS)	<ul style="list-style-type: none"> <li>- Responsible for the management of the secondary public water supply systems and sanitation (incl. <b>drainage of waste water and. storm water</b>);</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Channels investments and leads implementation for public drainage infrastructure</b>, especially from International Financing Institutions;</li> <li>- <b>Provides technical support to municipalities</b> for the management and execution of drainage infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>- Management of all drainage infrastructure considered under mandate of AIAS, conflicting with municipalities' mandates</li> <li>- Assumes that key role of municipalities is accompanying drainage measures and taking care of later operation</li> <li>- NBS is not defined as a specific approach of AIAS or of the general water sector but gained importance through the World Bank funding. Specific technical NBS expertise is provided externally.</li> </ul> <p>MTA</p> <p>Improve knowledge generation and sharing and access to information on the role/contribution of NBS for flood control and erosion protection in urban areas</p> <p>Integration and scale-up of NBS in the design, expansion and protection of water supply and drainage systems across the country.</p>
<b>INGC</b> (incl. provincial level)	Decreto 7/2016, March 21	<ul style="list-style-type: none"> <li>- <b>Prevention of natural hazard risks</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Mapping of risk areas</b>, incl. potential areas for nature-based</li> </ul>	<ul style="list-style-type: none"> <li>- INGC is not a Ministry, thus no equal recognition in policy making process</li> </ul>

## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

	(Approves the Regulation of the Law 15/2014)	<ul style="list-style-type: none"> <li>- Protection of humans and infrastructure from disasters</li> <li>- <b>Investigate disaster risk reduction technologies</b></li> <li>- Study adequate environmental protection measures</li> <li>- Capacitate institutions and communities</li> <li>- <b>Orientate construction of resilient infrastructure</b></li> <li>- Map risk areas and inform about prohibited settlement in</li> </ul>	<p>flood and erosion protection measures</p> <ul style="list-style-type: none"> <li>- <b>Political &amp; technical guidance of institutions for resilient infrastructure, incl. NBS</b></li> </ul>	<ul style="list-style-type: none"> <li>- Mandates cross with MTA (Climate Change Adaptation vs. Disaster Risk Prevention)</li> <li>- Difficult standing for orientation of other Ministries/ sectors → policies/guidelines not always followed</li> <li>- Should play a role in NBS, so far only on own account ➔ HR and financial situation may not allow a more active role</li> </ul> <p>Improve the understanding and analytical capacity on the potential contribution of NBS in disaster risk disaster (e.g. flood risk and erosion control in urban areas and floodplains)</p>
<b>MAEFP</b>	Decreto Presidencial n° 7/2015 (Defines the competencies of MAEFP)	<ul style="list-style-type: none"> <li>- Responsible for the organization, functioning and control of the state administration</li> <li>- <b>Responsible for the prevention and mitigation of natural disasters</b></li> <li>- Elaborates and implements the land use norms</li> <li>- Organization, operation and development of local government bodies, as well as mobilization and organization of <b>local community participation</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Coordinates and monitors all DRM activities</b></li> <li>- General importance in regard to <b>capacity development of Municipalities and coordination between national and local government institutions</b></li> <li>- <b>Sector Ministry for DRR through INGC</b></li> <li>- Governmental link to ANAMM</li> </ul>	<ul style="list-style-type: none"> <li>- Coordination role for DRM only through INGC, having little technical expertise at Ministry level</li> </ul> <p>Strengthen the integration of NBS in the DRM legislation, regulation policy and enforcement as low-cost measure for flood prevention and mitigation and erosion control at national, regional and local levels.</p> <p>Strengthen inter-institutional and multi-sector coordination and promote knowledge sharing and learning on benefits of NBS in disaster prevention and mitigation.</p>

## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

		<ul style="list-style-type: none"> <li>- Promotes the improvement of public service quality</li> </ul>		
<b>DNDA</b>	Decreto Presidencial n° 7/2015 (Defines the competencies of MAEFP)	<ul style="list-style-type: none"> <li>- Drafts the norms on the functioning of local authorities;</li> <li>- Promotes studies on the attributions, competences, organization and functioning of local authorities;</li> <li>- Promotes the training of Municipal staff in administration;</li> <li>- <b>Elaborates technical opinion for the approval of the PEU, PGU, PPU and PP</b></li> </ul>	<ul style="list-style-type: none"> <li>- Technical feedback to Municipalities on urban planning instruments</li> </ul>	Support and monitor the development of capacities of Municipalities for integration of NBS in municipal development plans, including in municipal land use plans and regulations
<b>ANAMM (Associação Nacional dos Municípios de Moçambique)</b>	Declaração de intenções, aos 23 de Outubro e Estatutos da Associação	<ul style="list-style-type: none"> <li>- Represents and promotes municipal interests at national level</li> <li>- Facilitates inter-municipal exchange</li> </ul>	<ul style="list-style-type: none"> <li>- No specific relevance</li> </ul>	<p>P:.</p> <p>Foster collaboration, information exchange and learning amongst municipalities on the benefits of NBS for flood protection and erosion control in urban areas</p>
<b>Conselhos Municipais</b>	See Municipal Legislation under chapter 3.3	<ul style="list-style-type: none"> <li>- Managing urban space, incl. natural resources and protection areas</li> <li>- Provide public services in the sectors of economic and social development, environment, health, education, culture, urbanization and construction</li> </ul>	<ul style="list-style-type: none"> <li>- ,Owners‘ of public infrastructure</li> <li>- Main actor for planning and implementing nature-based infrastructure within municipal territory</li> <li>- Responsible for protection of natural ecosystems (incl. wetlands and small rivers), management of risk areas (incl. flooding and erosion) within municipal territory</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient financial and human resources for planning and implementing innovative / complex nature-based and hybrid infrastructure</li> <li>- Lacking capacities for O&amp;M of public infrastructure</li> <li>- Conflicting land management practices</li> </ul> <p>MTAEnsure the integration of NBS in Municipal regulations and developments plans and enforce implementation, reporting, monitoring and evaluation</p> <p>Ensure the integration and implementation of NBS in land-use planning and investment at</p>

## 5. GAP ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES

				<p>Municipal level</p> <p>Ensure the development and mobilization of adequate capacities to support the implementation of NBS for flood protection and erosion control at Municipal level</p> <p>Ensure the mobilization, attraction and allocation of local, domestic and international, public and private funding to support NBS investment at Municipal level</p>
<p><b>ARAs</b> do Sul do Centro do Zambeze do Centro-Norte e do Norte</p>	<p>Decreto 26/1991 (currently under revision for better financial management)</p>	<ul style="list-style-type: none"> <li>- Management of hydrographic basins</li> <li>- Operation of hydrological systems, administration of water use rights</li> <li>- Propose definition of protection zones according to the law</li> </ul>	<p>- For NBS involving large rivers, ARAs may provide data, information on type of uses and protection areas</p>	<ul style="list-style-type: none"> <li>- Data and responsibility only for large rivers</li> <li>- Normally little contact with Municipal level</li> <li>- More engaged in large-scale investments, e.g. dams and water extraction for agriculture and human supply</li> </ul> <p>P:</p> <p>Ensure the development and mobilization of adequate capacities to support the integration of NBS in flood risk modelling and water resources management in areas under their jurisdiction</p>



## 6 RECOMMENDATIONS

Based on the existing legal, regulatory and policy frameworks and institutional mandates, a set of main recommendations is presented aiming at improving the enabling environment, harmonize the institutional roles, and strengthen capacities for better planning, coordination, as well as monitoring and evaluation of implementing NBS for flood protection and erosion control in Mozambique.

### 6.1 IMPROVEMENT OF LEGAL AND INSTITUTIONAL FRAMEWORKS

The key recommendations for improving and harmonizing the legal frameworks and \ institutional roles and responsibilities on NBS include:

- i. Review/assessment of key national, sectoral and municipal legislation, regulations and policies (environment, climate change, disaster risk reduction, forestry, water resources management, land management, land-use planning, agriculture, and infrastructure development) to identify gaps and entry points to inform the preparation, revision, and updating of legal and institutional frameworks to enable harmonized and coordinated implementation, reporting, monitoring and evaluation of NBS across the country, sectors and levels. To ensure better alignment, this review should include recommendations on the strategy, the sequencing, and the roadmap for updating/revising existing legal and institutional framework as well as the development of additional legal instruments when required. To ensure consistency and harmony, support could be provided for strengthening of existing legal departments in relevant governments agencies and municipalities or creation of new, specialized agency to lead and coordinate the drafting or review of NBS-related draft bills, regulations and policies.
- ii. Development of national communication strategy to support awareness raising at political level and decision makers for better integration and alignment of NBS within national, sectoral and municipal legislation, regulations and policies, based on the outcomes of review of existing legal and institutional frameworks. Support will be required to develop communication campaigns, including preparation and dissemination of policy briefs and messages, organization of NBS advocacy meetings targeting sector line ministers and senior Government officials, parliamentarians, mayors, municipal and provincial assembly members, civil society organization leaders, influential community leaders, and private sector entities.
- iii. Review of current policy incentives for public and private sector investment in NBS. This could include an expenditure review of key NBS-related line ministries, sectors, Public Funds (FNDS, FUTUR, Fundo Azul) and municipalities, as well as identification of funding needs, gaps and opportunities for investment in NBS, including leveraging of private-sector investment, particularly through PPP's.
- iv. Development, adoption, and implementation of NBS Financial Strategy setting the Government vision to mobilize funding and increase allocation of domestic and external funding for investment on NBS to generate positive impacts in disaster risk reduction in sectors and geographical areas most at risk. This could include a revision in scope and mandate of existing public Funds (FNDS, FUTUR, Fundo Azul) or potentially the creation of new public funds to mobilize and allocate resources to address the financing gap for investment in NBS at sector, regional, local and municipal levels.

### 6.2 IMPROVEMENT OF COORDINATION AND INSTITUTIONAL CAPACITIES

As NBS interventions typically span across several sectors and institutions, improving interinstitutional coordination and enhancing technical capacities across the different institutions is key. The recommendations for the improving coordination and institutional capacities for the implementation of NBS are as follows:

- i. Assessment and improvement of incentives (and disincentives) for considering NBS in the feasibility of different alternatives and coordinating with other institutions for key entities who could take the lead on implementing or partnering with others for the implementation of NBS for risk reduction in sectoral investments.
- ii. Assessment of capacity gaps and needs to coordinate for the preparation, implementation, and evaluation of NBS at all levels, and identify cost-effective options to build capacity within the key agencies involved in NBS coordination and implementation (MTA, MIMAIP, MEFP, MOPHRH, AIAS, Municipalities) and mechanisms as part of reform program for revision and update of national, sectoral and municipal legislation, regulations and policies
- iii. Strengthening of NBS coordination capacities and mechanisms at national, sector and local levels. This could include the revitalization and inclusive participation of representatives of agencies involved in the implementation of NBS in all multi-sector coordination bodies and national forums related to environment and climate change (CONDES), disaster risk reduction (CTGC), water resources management, forestry and land management, land-use planning, agriculture and infrastructure development, and municipal development. The establishment of strong, active and well-trained NBS focal points at national, sector and local level, primarily at MTA, MIMAIP, MEFP, MOPHRH, AIAS, Municipalities could be encouraged.
- iv. Development of national capacity building strategy/program on NBS. This could include support for:
  - Development, adoption, and implementation of methodologies and approaches for integration of NBS in national, sector and municipal legislation, regulations and policies related to disaster risk management.
  - Development, adoption and implementation of methodologies and guidelines for assessment of potential of contribution of NBS for flood mitigation and erosion control in major and middle size cities and river basins.
  - Development, adoption and implementation of methodologies and guidelines for integration of NBS in flood and erosion risk assessment and design of alternative prevention mitigations measures.
  - Development of national training program, including training packages and resources on NBS targeting Government officials at all levels, with focus on MTA, MIMAIP, MEFP, MOPHRH, AIAS, and Municipalities.
- v. Strengthen knowledge generation, exchange, dissemination, and learning on the potential role of NBS for disaster risk reduction in projects supported by the World Bank and other development partners in areas such as fisheries, urban development, roads, forestry, agriculture, land-use planning, marine and solid waste management. This includes support for scaling-up sector, regional and local climate and disaster risk assessments and potential contribution and option for the use of NBS for disaster risk reduction. Information and learning opportunities on NBS in key areas (such as fisheries, roads, urban development, forestry, agriculture, land-use planning, marine and solid waste management) should also be disseminated to relevant stakeholders at all sectors and levels.

## 7 ANNEXES

### ANNEX 1 Questionnaire

A consultoria para o Banco Mundial tem como um dos objectivos identificar qual é o enquadramento legal e institucional para planificar e implementar medidas de protecção contra inundações e erosão em Moçambique. É o foco de rever os mandatos e as capacidades das instituições envolvidas a nível nacional, provincial e municipal para verificar onde tem lacunas, contradições, sinergias e potenciais de melhorias (coordenação, etc.) para implementar infra-estruturas verdes e híbridas (com componentes de engenharia convencional) de protecção contra inundações e erosão.

As entrevistas servem para informar a equipa de consultores melhor sobre os mandatos, as percepções e práticas das instituições, além de ganhar conhecimentos sobre obstáculos e possibilidades na implementação de projectos de infra-estruturas verdes contra inundações e erosão.

- 1) Qual o mandato da sua instituição na planificação e/ ou implementação de projectos de infra-estruturas verdes e híbridos contra inundações e erosão?
- 2) Quem é a instituição chave que lidera a área de infra-estruturas verdes/ azuis e híbridas? (MOPHRH vs MTA vs INGC cada com um papel específico)
- 3) Quais são as leis e regulamentos cruciais que orientam a sua instituição para este tipo de medidas/ projectos?
- 4) Quais são lacunas ou obstáculos que verifica na legislação em termos da sua implementação?
  - a. Existem parâmetros claros/definidos como reabilitar ou criar infra-estruturas verdes de forma natural ou híbrida (e.g. dunas, mangais, florestas, terras húmidas, rios, etc.)
- 5) Existem contradições nas diferentes leis dos sectores ou nas práticas das instituições?
  - a. E.g. orientações diferentes sobre a reabilitação de canais naturais (MOPHRH vs MTA)
  - b. E.g. práticas diferentes da construção de diques contra inundações (MOPHRH vs. INGC)
- 6) Como está a ver a disponibilidade dos recursos financeiros e humanos para a implementação de projectos desta natureza a nível nacional, provincial e municipal?
- 7) Que forma de coordenação existe entre as instituições a nível nacional e entre os diferentes níveis?
  - a. Quais as possibilidades de troca de informação? E.g. entre MOPHRH/AIAS, MTA e INGC?
  - b. Qual o suporte que Municípios como ‘donos’ das infra-estruturas recebem do nível provincial/nacional?
- 8) Quais podem ser oportunidades de criar a actuação das instituições mais eficaz na implementação de infra-estruturas verdes— individualmente ou em conjunto?

**ANNEX 2 List of Interviewees**

Institution	Name of Interviewee	Contact (for internal distribution)
AIAS	Paulo Oscar M. da Silva	<a href="mailto:Poscar100@gmail.com">Poscar100@gmail.com</a>
	Carlos Noa Laisse	<a href="mailto:Carlos.laisse5@gmail.com">Carlos.laisse5@gmail.com</a>
	Hassane Abechande	<a href="mailto:Hassane.abechande@gmail.com">Hassane.abechande@gmail.com</a>
MTA - DINAB	Guilhermina Amurane	<a href="mailto:gamurane@gmail.com">gamurane@gmail.com</a>
MTA - DINOTER	Hercílio Ndlate	<a href="mailto:ndlatehercilio@gmail.com">ndlatehercilio@gmail.com</a>
INGC	Higino Rodrigues	<a href="mailto:higinorodrigues@hotmail.com">higinorodrigues@hotmail.com</a>
INGC	Bonifácio Antonio	<a href="mailto:bonyantonio@gmail.com">bonyantonio@gmail.com</a>
INGC-Nacala	Helder Sueia	<a href="mailto:helsueia@yahoo.com">helsueia@yahoo.com</a>
INGC-Zambezia	Milton Barbosa	<a href="mailto:mcelsobs@gmail.com">mcelsobs@gmail.com</a>
MOPHRH	Inacio Tesoura	<a href="mailto:inaciopedromanuel@gmail.com">inaciopedromanuel@gmail.com</a>
DNAAS	Jaime Muhate	<a href="mailto:muhatejaime@gmail.com">muhatejaime@gmail.com</a>
DNGRH	Agostinho Vilankulos	<a href="mailto:avilankulos@yahoo.com.br">avilankulos@yahoo.com.br</a>
ARA Centro-Norte	Ivan Uamusse	<a href="mailto:appliedphys-icsuamusse@gmail.com">appliedphys-icsuamusse@gmail.com</a>
Municipal Council of Quelimane	Silverio Cipriano	<a href="mailto:csilverio.cs@gmail.com">csilverio.cs@gmail.com</a>
	Inocencio Cebola	<a href="mailto:inocenciocebola@gmail.com">inocenciocebola@gmail.com</a>
	Eng. Brito	<a href="mailto:britoara2002@yahoo.com.br">britoara2002@yahoo.com.br</a>
	Antonio Mundeia	
Municipal Council of Nacala	Adelino Cobre	<a href="mailto:adelinoemiliocobre@gmail.com">adelinoemiliocobre@gmail.com</a>
	Samuel Domingos	<a href="mailto:s.vascodomingos@gmail.com">s.vascodomingos@gmail.com</a>
MAEFP - DNDA	Inocência Mendonça	<a href="mailto:arkmenducci@hotmail.com">arkmenducci@hotmail.com</a>
DPOPHRH - (Nampula)	Arlindo Issa	<a href="mailto:arlindoissa1970@gmail.com">arlindoissa1970@gmail.com</a>
AIAS Zambezia	Julia Uarela	<a href="mailto:Jdduarela06@yahoo.com.br">Jdduarela06@yahoo.com.br</a>
	Eugenio	<a href="mailto:duarteeugenio@gmail.com">duarteeugenio@gmail.com</a>
	Celindo Andissone	<a href="mailto:candissone@yahoo.com.br">candissone@yahoo.com.br</a>
DPTA - (Zambézia)	Chicuate	842664569
DPTA - (Nampula)	António Comboio	<a href="mailto:apcomboio@gmail.com">apcomboio@gmail.com</a>
SDPI - Nampula	Talim de Alfredo	
AIAS Nampula	Bruno Ambrique	<a href="mailto:ambrique@live.com.pt">ambrique@live.com.pt</a>

FIPAG - Quelimane	Carlos Jamal	<a href="mailto:carlosjamal2@gmail.com">carlosjamal2@gmail.com</a>
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**ANNEX 3 List of Legal Documents****1) Environmental, Water and Climate Regulations**

Type and nº	Name or content description	altered by	Collected by IC?
Lei nº20/97	Lei do Ambiente		✓
Lei nº 10/99	A Lei de Florestas e Fauna Bravia		✓
Lei nº 19/97	Lei de Terras		✓
Decreto nº 66/98	Regulamento da Lei de Terras		✓
Decreto nº.31/2012	Aprova o regulamento sobre o processo de reassentamento resultante de actividades económicas		✓
Resolução nº.10/95	Aprova a política nacional de terras e as respectivas estratégias de implementação		✓
Decreto 19/2007	Lei de Ordenamento do Território		✓
Decreto nº 23/2008	Regulamento sobre Ordenamento do Território		✓
Decreto 60/2006	Regulamento do Solo Urbano		✓
Diploma Legislativo 1976/1960	Regulamento de Edificações Urbanas		✓
Decreto nº.30/2012	Regulamento para exploração Florestal e incentivos de plantações florestais		✓
Decreto nº.26/2011	Aprova o estatuto organico do fundo do ambiente		✓
Diploma Ministerial nº.129/2006	Aprova a directiva geral para estudos do impacto ambiental		✓
Lei nº 15/2014	Estabelece o Regime de Gestão de Calamidades		✓
Decreto nº 7/2016	Aprova o Regulamento da Lei da Gestão de Calamidades		✓
Plano Director 08/2017	Plano Director para a Redução do Risco de Desastres 2017-2030		✓
Lei nº 16/1991	Lei de Águas		✓
Decreto 26/1991	Criação da Administração Regional de Águas		✓
Decreto nº. 19/2009	Criação da Administração de Infra-estruturas de Abastecimento de Água e Saneamento		✓
Resolução nº.19/2015	Aprova o estatuto organico do Ministério das obras públicas, habitação e recursos hídricos		✓

Decreto nº. 30/2003	Aprova o regulamento dos sistemas públicos de distribuição de água e de drenagem das águas residuais		✓
Diploma Ministerial nº 92/2002	Aprova o regulamento interno do Conselho de Abastecimento de Água		✓
Decreto nº 02/2016	Altera o Decreto nº 80/2010, de 31 de Dezembro, que cria a Agência Nacional para Controlo de Qualidade Ambiental e revoga os Decretos nº 5/2003, 6/2003 e 7/2003 ambos de 18 de Fevereiro		✓
Decreto nº 06/2016	Cria o Fundo Nacional de Desenvolvimento sustentável e revoga os Decretos nº 39/2000 e 26/2011		✓
Resolução nº42/2016	Aprova a Política de Águas		✓
Decreto nº 31/2012	Aprova o Regulamento sobre o processo de reassentamento resultante de actividades económicas		✓

## 2) International Conventions

Type and nº	Name or content description	altered by	Collected by IC?
Resolução nº2/94	Convenção das Nações Unidas sobre a Diversidade Biológica		✓
Resolução nº45/2003	Convenção sobre Terras Húmidas de Importância Internacional		✓
Resolução nº1/94	Convenção Quadro das Nações Unidas sobre Mudanças Climáticas		✓
Resolução nº17/82	Convenção para a Protecção do Património Cultural e Natural do Mundo		✓
Resolução nº18/81	Aprova a adesão da República de Moçambique a Convenção Africana sobre Conservação da Natureza e dos Recursos Naturais		✓

## 3) Municipal Legislation

Type and nº	Name or content description	altered by	Collected by IC?
Decreto Presidencial nº 7/2015	Regime jurídico do Ministério de Administração Estatal e Função Pública		✓
Lei nº 7/97	Regime jurídico da tutela administrativa sobre as autarquias locais	6/2007	✓



Lei nº.02/97	Lei-quadro de institucionalização das autarquias locais	15/2007	✓
Diploma Ministerial nº.67/2009	Guião sobre a organização e funcionamento dos conselhos locais		✓
Lei nº 11/97	Lei das Finanças Autárquicas	1/2008	✓
Lei nº 8/2003	Regime jurídico dos órgãos locais do Estado	11/2012	✓
Diploma Ministerial nº 80/2004	Regulamento da articulação dos órgãos das autarquias locais com as autoridades comunitárias		✓
Decreto nº 33/2006	Regime jurídico das transferências de funções e competências dos órgãos do Estado para as autarquias locais	46/2011	✓
Lei nº 6/2007,	Alteração do regime jurídico da tutela administrativa sobre as autarquias locais		✓
Lei nº1/2008	Regime financeiro, orçamental e patrimonial das autarquias locais e o sistema tributário autárquico	Revokes Lei 11/97	✓
Decreto nº 56/2008	Regime jurídico das modalidades de tutela administrativa dos Governadores Provinciais		✓
Decreto Presidencial nº 4/2010	Regime jurídico do Ministério da Administração Estatal		✓
Decreto nº 46/2011	Alteração ao regime jurídico das transferências de funções e competências dos órgãos do Estado para as autarquias locais		✓
Lei nº 11/2012	Alteração da lei dos órgãos locais do Estado		✓

## ANNEX 4 Overview of Mandates

	THE LOCAL GOVERNMENT SYSTEM IN MOZAMBIQUE	COUNTRY PROFILE 2017-18
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Annex 27a Summary of service provision in different spheres of government in Mozambique

Services	Delivering authority				Remarks
	National government	Provinces	Districts	Municipalities	
GENERAL ADMINISTRATION					
Police	■				
Fire protection	■	■			
Civil protection	■	■			
Criminal justice	■				
Civil status register					
Statistical office					
Electoral register	■				
EDUCATION					
Pre-school (kindergarten and nursery)		■			
Primary	■				
Secondary	■				
Vocational and technical	■	■			
Higher education	■				
Adult education	■	■			
SOCIAL WELFARE					
Family welfare services	■				
Welfare homes	■				
Social security	■				
PUBLIC HEALTH					
Primary care	■	■			
Hospitals	■	■			
Health protection	■				
HOUSING AND TOWN PLANNING					
Housing	■			■	
Town planning	■	■	■	■	
Regional planning	■	■			
TRANSPORT					
Roads	■	■	■	■	
Transport	■	■			
Urban roads	■		■	■	
Urban rail					
Ports	■	■	■	■	
Airports	■	■		■	
ENVIRONMENT AND PUBLIC SANITATION					
Water and sanitation	■		■	■	
Refuse collection and disposal	■		■	■	
Cemeteries and crematoria	■		■	■	
Slaughterhouses	■				
Environmental protection	■	■			
Consumer protection	■	■			
CULTURE, LEISURE AND SPORTS					
Theatres and concerts	■	■			
Museums and libraries	■	■			
Parks and open spaces	■		■	■	
Sports and leisure facilities	■		■	■	
Religious facilities	■	■			
UTILITIES					
Gas services	■	■			
District heating					
Water supply	■	■	■	■	
Electricity	■	■		■	
ECONOMIC					
Agriculture, forests and fisheries	■				
Local economic development/promotion	■			■	
Trade and industry	■	■		■	
Tourism	■	■		■	

■ sole responsibility service ■ joint responsibility service ■ discretionary service

Source: [www.clgf.org.uk/mozambique](http://www.clgf.org.uk/mozambique) (modified)

# ANNEX 5 Organizational Chart of EMUSA

