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NATIONAL ASSESSMENT OF LOCALLY-MANAGED MARINE AREAS IN MOZAMBIQUE

Unpublished Summary Report

Cover: Mangrove walkway at Chissape Community Reserve, Nhangau – Sofala province. Photo: Marcelo Levene.

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ACRONYMS AND ABBREVIATIONS

ADNAP - Administração Nacional das Pescas (National Fisheries Administration)

AMA – Associação do Meio Ambiente

APAIPS – Área de Protecção Ambiental das Ilhas Primeiras e Segundas (Primeiras and Segundas Environmental Protection Area)

APGC - Área de Pesca de Gestão Comunitária (Community Managed Fishing Area)

ARR – Área de Recuperação de Recursos (Resource Recovery Area)

CCP – Conselho Comunitário de Pesca (Community Fisheries Council)

CMMA - Community Managed Marine Area

GPS - Global Positioning System

ha - hectare

InOM – Instituto Oceanográfico de Moçambique (Mozambique Oceanographic Institute)

IUCN - International Union for Conservation of Nature

LMMA - Locallity Managed Marine Area

MIMAIP – Ministério do Mar, Águas Interiores e Pescas (Ministry of Sea, Inland Waters and Fisheries)

MPA - Marine Protected Area

PNaM - Parque Nacional de Maputo (Maputo National Park)

REPMAR – Regulamento Geral da Pesca Marítima (General Regulation of Maritime Fisheries)

SDAE - Serviços Distritais das Actividades Económicas

UEM – Universidade Eduardo Mondlane

WCS - Wildlife Conservation Society

WIOMSA - Western Indian Ocean Marine Sceince Association

WWF - World Wide Fund for Nature

ZCUSRP – Zonas de Conservação de Uso Sustentável de Recursos Pesqueiros (Conservation Zones for Sustainable Use of Fishing Resources)

ZCTRP – Zonas the Conservação Total dos Recursos Pesqueiros (Total Conservation Zones for Fishery Resources)

1. INTRODUCTION

Given the urgency to manage marine and coastal resources for long term sustainable use, and as a means to safeguard food security, address coastal poverty, and help coastal communities to adapt to climate change, the Government of Mozambqiue approved the National Strategy for MPA Expansion (in August 2022). Locally Managed Marine Areas (LMMAs) or Community Managed Marine Areas (CMMAs) are considered an important component of this strategy. Improved coordination, information sharing and collaboration amongst partners and professionals are also considered as priorities.

In addition to formal conservation mechanisms under direct State management in Mozambique, local communities have assumed responsibility for marine and coastal resource utilization in the context of participatory management and co-management since the 1990's (e.g. Kristiansen & Poiosse, 1996). As a basis for the implementation of community managed marine resources and community conservation areas, the following statutes apply:

- i. The Law for the Protection, Conservation and Sustainable Use of Biological Diversity (Law No. 5/2017, of May 11th): Introduces the concept of conservation areas for sustainable use, which includes community conservation areas under the management of local communities;
- ii. The Fisheries Law (Law no. 22/2013, of November 1st): Ensures the rights of local communities to fisheries resources and their participation in management by establishing conservation zones for fisheries resources;
- iii. The General Regulation of Maritime Fisheries (REPMAR; Decree No. 89/2020, of October 8): Regulates the requirements and criteria for co-management, as well as the establishment and functioning of community-managed fishing areas;
- iv. Legal Regime for the Establishment of Community Management Fishing Areas (Ministerial Diploma 83/2023 of 6 June): establishes the legal regime for the establishment of a community-managed fishing area, including the responsibilities of the entities involved.

The general principle of community participation in activities related to resource use, research, law enforcement and compliance have also been reflected in the Sea Policy (POLMAR, Resolution 30/2017 of 14 September).

These legal provisions are comparable to the widely used definition of a LMMA that was provided by Govan et al. (2008), specifically an LMMA is described as "an area of nearshore waters and coastal resources that is largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area." For the purpuses of this assessment, in addition to the definition provided by Govan *et al.*, (2008), we also considered:

- Initiatives that include active processes of delimitation, marking, operacionalisation and legalization at local level; and
- Areas with some form of spatial-temporal restriction or ban of extrative uses of resources, with locally-defined and agreed rules, varying levels of enforcement.

This assessment builds on and complements, the recent review by Rubens (2024), which analysed the development of marine area management in nearshore waters of Mozambique, and provides an updated inventory of LMMAs in Mozambique, including information on their legal status, size, main habitats, challenges, threats, financing and other governance aspects.

2. DATA COLLECTION

A combination of methods was used to collect data across all coastal provinces, including: (i) Literature review; (ii) Fieldwork; and (iii) Structured interviews with key informants. Field work was conducted between March and May 2024 and involved visits to direct observation at LMMA sites in four provinces: Maputo, Sofala, Zambézia and Nampula. Field work was performed to record basic identifying and descriptive data (administrative location, boundaries, extent, and types of ecosystems and habitats present) as well as mapping the areas using a handheld GPS (Garmin eTrex). GPS tracks were recorded whist navigating the boundary of the LMMA using a small motorized

boat or by walking along the LMMA perimeters. These tracks were shaped into polygons on Google Earth to represent LMMA coverage.

Key informants were selected based on their involvement and/or presence during the establishment and operationalisation phases of the LMMA, and included government representatives (at local level), leaders of community-based organizations (including members of fishing community councils) and supporting or collaborating business/tourism operators and NGOs.

A structured questionnaire provided by WIOMSA was used (Annex 1) to gather information for each LMMA. Where in-person interviews were not possible, these were either performed telephonically or participants submitted questionnaires via email. Informants also supplied shapefiles of their respective LMMAs. Cabo Delgado and Inhambane provices were not visited and all data were provided by key informants.

The framework for establishing LMMAs in Mozambique is very recent, and most inititatives have still to adapt and conform to the new requirements. This includes the terminology and categorization of each area. For pratical purposes in this report, we grouped the exisiting LMMAs inititives into the following categories:

Development stage

- i. Proposed: areas still under discussion and at the planning stage.
- ii. Informal: areas that have been aggred at the local level, without a binding document
- iii. Formal: areas that have been aggred at the local level, with a binding document (MoU)
- iv. Dossier submitted to ADNAP and awaiting approval and gazzettement
- v. Gazetted.

Management type

- i. Temporary closure
- ii. Permanent closure
- iii. Specific restrictions (eg. fishing gear use).

3. RESULTS

3.1. The Legal Framework for LMMAs in Mozambique

Table 1 presents the general legal framework for community participation in management and conservation of natural resources in Mozambique. The Conservation Law (Law 5/2017 of 11 May) makes provision for two categories under community stewardship, namely: (i) Community Conservation Areas, and (ii) Sanctuaries. These are generally perceived to be applicable only to terrestrial environments and all coastal/marine initiatives have generally been operating under the guidelines established under fisheries-specific legislation.

Fisheries co-management has been promoted in Mozambique for decades (e.g. Kristiansen & Poiosse, 1996). However, only recently, and with the approval of the General Regulation of Maritime Fisheries (a.k.a. REPMAR, Decree 89/2020 of 8 October 2020) and the Legal Regime for the Establishment of Community Management Fishing Areas (Ministerial Diploma 83/2023 of 6 June), the legal framework for active community participation in co-management and conservation of marine and coastal resources was established.

APGCs (Community Managed Fishing Area or Áreas de Pesca de Gestão Comunitária in Portuguese), are the umbrella category, with relatively clear guidelines gazetted for their proclamation. Within APGCs, temporary or permanent recovey areas (under the Conservation Zones for Sustainable Use of Fishing Resources category) and Total Conservation Zones for Fishery Resources (effectively "no go areas") can be established (as shown in Figure 1).

Table 1. Legal framework for community-led conservation initiatives in Mozambique.

Main Legislation:	Conservation Lav	/ (Law 5/2017 of 11 May)	General Regulation of M	laritime Fisheries (Decree 89/2020 of 8	October 2020)
Category:	Community Conservation Area (<i>Área de Conservação</i> <i>Comunitária</i>)	Sanctuary (<i>Santuário</i>)	Community Managed Fishing Area (<i>Áreas de Pesca de</i> <i>Gestão Comunitária - APGC</i>)	Conservation Zones for Sustainable Use of Fishing Resources (Zonas de Conservação de Uso Sustentável de Recursos Pesqueiros – ZCUSRP)	Total Conservation Zones for Fishery Resources (Zonas the Conservação Total dos Recursos Pesqueiros - ZCTRP)
Domain:	Public / community	Public or private	Public / community	Public or private	Public
Extractive use:	Allowed under certain conditions and community acceptance	Allowed under the management plan except for the species being protected/restored	Allowed under the management plan.	Limited restrictions (see below)	No extractive use allowed
Notes	Currently only terrestrial areas have been legally established as community conservation area. Ongoing discussion if this category can be applied to the marine environment	Aimed at protecting, sheltering or restoring specific species. Could be proclaimed inside other conservation areas	Can include: ZCUSRP (sustainable use) or ZCTRP (total restriction).	Divided into two sub-categories here: Permanent Fishing Resources Recovery Area (Área de recuperação de recursos pesqueiros de caracter permanente; ARR-Permanente) Temporary Fishing Resources Recovery Area (Área de recuperação de recursos pesqueiros de caracter temporário; ARR-Temporária). Both can be public or private domain. Within permanent areas no extractive use is allowed.	Could be proclaimed inside other conservation areas. Only indirect use allowed (e.g. tourism).

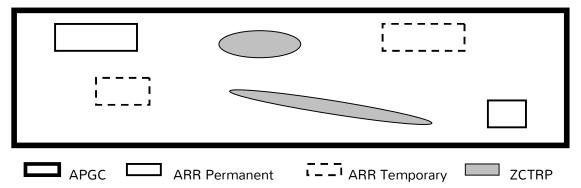


Figure 1. Schematic representation of an APGC with resource recovering areas and total protection zones. Area codes as in Table 1.

3.2. Inventory of LMMAs in Mozambique

A total of 107 individual LMMAs have been identified (Table 2), where spatial and descriptive data were collected (Annex 2). These range from stand-alone initiatives (often referred to as "Santuaries" or "Community Reserves") to areas proposed as APGCs or ARRs (following the REMAR). The first LMMA initiatives in Mozambique were pursued in the late 1990's in Sofala and the early 2000's in Inhambane province, showing significant growth over the last decade (Figure 2). Today, most LMMA initiatives are located in Nampula and Zambézia provinces (respectively 29 and 26, Table 2), with Inhambane following closely.

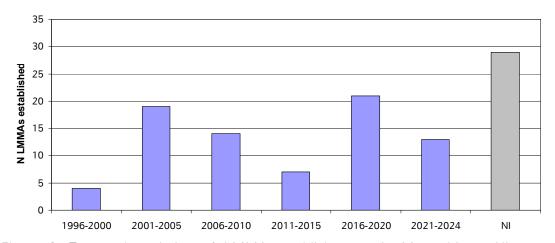


Figure 2. Temporal evolution of LMMA establishement in Mozambique. NI = no information.

Table 2. Number of existing and proposed individual LMMAs per province.

Province	N LMMAs
Cabo Delgado	19
Nampula	29
Zambézia	26
Sofala	5
Inhambane	24
Gaza	1
Maputo	3
Total	107

At the time of printing of this report, no LMMAs have been gazetted following the guidelines of the latest Ministerial Diploma, thus while many have been "formally recognized" by local authorities, these are not considered fully legalized. There are currently nine processes where documentation (management plan including technical supporting studies, and public consultation reports) has been submitted within the relevant authorities (ADNAP at MIMAP), and await ministerial approval and gazettement (Table 3).

Table 3. Stages of development of LMMAs in Mozambique (as of 31 May 2024).

Province	Proposed	Informal	Formally established	Pending approval and gazettement	Gazetted
Cabo Delgado	0	3	16	0	0
Nampula	2	3	13	11	0
Zambézia	0	6	3	17	0
Sofala	1	2	2	0	0
Inhambane	0	0	24	0	0
Gaza	1	0	0	0	0
Maputo	0	0	3	0	0
Total	4	14	61	28	0

Local community-based organizations (CBOs, e.g. CCPs, Fishers Associations, and other local user groups, Table 4) usually take the lead in the development of LMMAs/ similar initiatives. The majority of these CBOs (74.2 %) have either completed their legalization and gazettement process or have been formally registered and recognized by the Government at provincial level. In terms of membership, a total of 1 031 members of multiple CBOs have been involved in the establishment of LMMAs (of which 32.2% were female).

Table 4. Types of community-based organizations leading LMMA initiatives in Mozambique per province.

Province	Fisheries Community Council	Fishers Associations	Natural Resource Management Comittees	Other Associations and User Groups
Cabo Delgado	10	0	0	0
Nampula	23	6	0	1
Zambézia	24	19	0	0
Sofala	1	0	1	0
Inhambane	20	0	0	0
Gaza	0	0	0	0
Maputo	1	0	0	1
Total	79	25	1	2

For the majority of LMMAs (69.2%) shapefiles are available. These are provided separately. The effective area (ie. with no duplication) covered by LMMAs in Mozambique is 1 168 564 ha (Table 5), of which permanently closed, "no go" areas cover 68 594 ha, representing only 5.9% of the total coverage (Table 6).

Table 5. Total area (ha) covered by LMMA initiatives per province in Mozambique.

Province	Total Area	
Cabo Delgado	17 284	
Nampula	281 170	
Zambézia	611 652	
Sofala	154 194	
Inhambane	102 819	
Gaza	Nda	
Maputo	1 445	
Total	1 168 564	

Table 6. Area coverage of LMMA initiatives in Mozambique (ha), based on management type.

Province	Temporary closed areas	Permanent closed areas	Specific restrictions
Cabo Delgado	3 625	13 659	2 701
Nampula	0	24 272	256 898
Zambézia	560 306	6 092	51 444
Sofala	7	857	0
Inhambane	0	22 669	101 557
Gaza	Nda	Nda	Nda
Maputo	0	1 045	400
Total	563 938	68 594	413 000

Three formal MPAs with active LMMA initiatives have been identified: Quirimbas National Park (four), Primeiras and Segundas Environmental Protected Area (33) and Maputo National Park (two).

For the majority of LMMAs (63.2 %) no management plan or otherwise locally-designed, agreed and implemented rules and regulations exist or is recognized (Table 7). On the other hand, for 64.2% of the LMMAs, informants expessed that management actions were either partially implemented but not highly effective, or practically not implemented (Table 8).

Table 7. Stages of development of management plans (MP) within LMMAs per province. NI= no information.

Province	No MP	MP not recognized	MP in preparation	MP recognized	NI
Cabo Delgado	5	8	0	0	6
Nampula	12	6	11	0	0
Zambézia	8	0	1	17	0
Sofala	5	0	0	0	0
Inhambane	0	24	0	0	0
Gaza	0	0	0	0	1
Maputo	1	0	2	0	0
Total	31	38	14	17	7

Table 8. Level of management effectiveness and compliance of LMMAs per province. NI = No information.

Province	High compliance with management measures	Partially implemented but not highly effective	Practically not implemented	NI
Cabo Delgado	1	12	0	6
Nampula	7	19	3	0
Zambézia	0	25	1	0
Sofala	0	4	1	0
Inhambane	24	0	0	0
Gaza	0	0	0	1
Maputo	0	3	0	0
Total	32	63	5	7

The Assessment found that seagrass beds, mangroves and coral reefs constitute the predominant habitats within LMMAs (Table 9), although other habitats such as rocky bottoms, estuaries and dunes were documented. Interestingly, seagrass beds ranked

first in terms of how many LMMAs include them. This is significant and relevant, considering that this habitat is arguably the most threatened in Mozambique (FAO, 2010; Bandeira et al., 2014). The call for action under the country's National Mangrove Strategy has pushed for a national effort to restore mangroves, which has also resulted in several areas designated at local level to protect mangroves. Several iconic, protected and threatened species also benefit from protection within these areas, including marine mammals, turtles, sharks, seahorses and fish species of commercial importance (e.g. rockcods).

Table 9. Predominant habitats within LMMAs in Mozambique.

Province	Dunes	Estuary	Mangroves	Rocky shores	Rocky bottom (subtidal)	Seagrass beds	Coral reefs
Cabo Delgado (n = 10)	0	0	6	3	0	10	9
Nampula (n = 28)	0	2	21	1	11	21	12
Zambézia (n = 26)	1	0	19	2	2	24	3
Sofala (n = 5)	1	0	5	0	0	1	0
Inhambane (n = 24)	0	0	4	0	0	24	12
Gaza (n = 1)	0	1	1	0	0	0	0
Maputo (n = 3)	0	0	3	1	0	1	1
Total	2	3	59	7	13	81	37

The assessment also found that all LMMAs were established with marine and coastal resource recovery and/or conservation as the primary objective (Table 10), although other objectives (eg. mangrove restoration and environmental awareness) were mentioned. Alhough some areas receive support from the private sector (ie. lodges and resorts), tourism was not considered a primary objective.

Table 10. Primary objectives for the establishment of LMMA per province. NI = No information.

Province	Conservation	Fisheries	Cultural	Other	NI
Cabo Delgado (n= 13)	11	10	5	1	6
Nampula (n = 29)	20	25	0	1	0
Zambézia (n = 26	26	26	0	1	0
Sofala (n = 5)	5	0	0	2	0
Inhambane (n = 25)	25	25	0	0	0
Gaza (n = 0)	0	0	0	0	1
Maputo (n = 3)	3	1	0	1	0
Total	90	86	5	6	7

In general, LMMAs have very low, or in most cases no budgets and/or income to support their operations, except in a few cases where the CBOs provide services to other entities or receive grants (Table 11). The average income in 2023 for the 22 LMMAs that supplied data to our Assessment was just over US\$ 7 270 (range US\$ 6.00 – US\$ 63 241.00). This largerly contrasts with the estimated annual financial needs (Table 12), with an average of US\$ 50 755.89 (range: US\$ 400 – US\$ 500 000).

Table 11. Estimated income of LMMAs per province in 2023 (US\$).

Province	Average (US\$)	Minimum (US\$)	Maximum (US\$)
Cabo Delgado (n = 1)	427.00	427.00	427.00
Nampula (n = 7)	958.86	90.00	1 425.00
Zambézia (n = 8)	437.13	6.00	2 372.00
Sofala (n = 4)	20 268.00	72.00	27 000.00
Inhambane (n = 1)	5 000.00	5 000.00	5 000.00
Gaza (n = 0)	NI	NI	NI
Maputo (n = 1)	63 241.00	63 241.00	63 241.00
Total	7 270.41	6.00	63 241.00

Table 12. Estimated annual financial needs of LMMAs per province (US\$).

Province	Average (US\$)	Minimum (US\$)	Maximum (US\$)
Cabo Delgado (n = 4)	7 126.25	3 460.00	13 400.00
Nampula (n = 8)	4 651.25	790.00	13 300.00
Zambézia (n = 8)	1 611.75	400.00	3 200.00
Sofala (n = 5)	162 400.00	12 000.00	500 000.00
Inhambane ($n = 1$)	5 000.00	5 000.00	5 000.00
Gaza (n = 0)	NI	NI	NI
Maputo (n = 1)	474 800.00	474 800.00	474 800.00
Total	50 755.89	400.00	500 000.00

Tables 13 and 14 present the number of technical partners and donors supporting LMMAs per province. NGOs (national and international) and Government were reported as the main technical partners and donors, with the academy (ie. UEM) and private sector respectively, playing more relevant roles as partners and donors in Inhambane and Nampula.

Table 13. Main partners supporting LMMAs per province.

Province	Academy	Government	NGOs	Private sector
Cabo Delgado (n = 16)	1	3	11	1
Nampula (n = 25)	1	7	14	3
Zambézia (n = 19)	0	13	6	0
Sofala (n = 5)	0	4	1	0
Inhambane (n = 24)	12	12	12	0
Gaza (n = 0)	0	0	0	0
Maputo (n = 3)	0	1	2	0
Total	14	40	46	4

Table 14. Number of donors supporting LMMAs per province.

Province	Academy	Government	NGOs	Private sector
Cabo Delgado (n = 10)	0	1	9	2
Nampula (n = 13)	0	0	10	5
Zambézia (n = 9)	0	9	9	0
Sofala (n = 5)	0	4	5	0
Inhambane (n = 1)	0	0	24	0
Gaza (n = 0)	0	0	0	0
Maputo (n = 3)	0	2	1	0
Total	0	16	58	7

Table 15, summarizes the main challenges faced by LMMAs per province. A total of 13 were reported during the assessment, with the following five being prevalent across all provinces: (i) Lack of financial resources; (ii) Lack of LMMA delimitation with marker buoys; (iii) Lack of adequate equipment; (iv) Lack of skilled human resources; and (v) Poor institutional coordination/relationships.

Table 15. Main **c**hallenges faced by LMMAs per province.

Challenges	Cabo Delgado (n = 5)	Nampula (n = 13)	Zambézia (n = 9)	Sofala (n = 5)	Inhambane (n = 24)	Gaza (n = 0)	Maputo (n = 3)	Total
Lack of financial resources	5	13	9	5	12	0	3	47
Lack of LMMA delimitation with marker buoys	3	9	9	1	12	0	0	34
Lack of adequate equipment	4	13	9	4	0	0	3	33
Lack of skilled human resources	4	10	9	5	0	0	1	29
Poor institutional coordination/relationships	4	1	2	1	12	0	2	22
Absence/poor support form technical partners	1	11	7	0	0	0	0	19
Long, costly and cumbsersome legal processes	0	0	0	0	12	0	0	12
CBOs are not gazzetted	0	2	0	0	0	0	0	2
No law enforcement and surveilance in place	0	0	2	0	0	0	0	2
Erosion due to heavy sands extraction	0	0	1	0	0	0	0	1
Lack of awareness/agreement from communities	0	1	0	0	0	0	0	1
Lack of adequate headquarters/infrastructure	0	0	0	0	0	0	1	1
Lack of regulation of human settlements	0	0	0	0	0	0	1	1

4. CONCLUDING REMARKS AND RECOMMENDATIONS

More than 100 LMMAs are currently active in Mozambique. This constitutes a remarkable effort, indicative of the interest and participation of local communities in marine conservation or coastal resource management efforts. From the assessment and general discussion with key informants, the following additional findings are highlighted:

- LMMAs have been established as fishery management tools with resources recovery and habitat conservation/restoration as primary objectives;
- Almost all LMMAs lack adequate (if any) funding, skilled staff and/or equipment, which greatly and negatively impacts their operations and effectiveness;
- "No go" or fully protected / resource recovery areas ony represent 5.9% of the total area covered by LMMAs in Mozambique;
- No LMMAs have completed the legal process nor has received full government recognition (and gazettement);

- The mandatory need for gazetted district-level fisheries management plans as precursors for the establishment of LMMAs, results in cumbersome, timeconsuming and expensive processes – which local CBOs can not afford and pursue;
- There is a pressing need for a centralized and openly accessible database of LMMAs in the country.

Based on the assessment's findings, the following recommends are put forward:

- A database of LMMAs (largely based on the data gathering during this assessment), must be established (preferably online), following a validation and data-sharing aggrement between contributors - local authorities should also maintain an updated and compreensive database of local LMMAs;
- A workshop to present the finding of this assessment, and to validate the data should be convened as soon as possible, with relevant stakeholders and government institutions;
- A revision of the steps and procedures for the establishment of LMMAs is deemed crucial which should result in a de-centralized, simpler and more cost-effective process;
- Lead CBOs need urgent capacity-building support, with particular focus on:
 Fundraising and administration of funds; Law enforcement, Surveillance and
 compliance; Monitoring and evaluation, as well and area demarcation (buoys and
 other markers);
- Lead CBOs, partners and Government entities are urged to fully protect at least 30% of the areas as recommended by O'Leary et al. (2016), the 2014 World Parks Congress, and the 30x30 Global Marine Conservation Targets, to which Mozambique is signatory.

5. REFERENCES

- Govan H, Aalbersberg W, Tawake A, Parks J (2008) Locally-Managed Marine Areas: A guide for practitioners. The Locally-Managed Marine Area Network, 64 pp
- Bandeira, S, Gullström M, Balidy H, Samussone D, Cossa D (2014). Seagrass meadows in Maputo Bay. In: Bandeira SO, Paula J (eds.) (2014). The Maputo Bay ecosystem. 147-169 pp. WIOMSA, Zanzibar Town.
- FAO (2010). Global forest resources assessment 2010. Country Report: Mozambique. Rome, FAO. 54 pp
- Kristiansen A, Poiosse E (1996). Co-management of beach seine fisheries in Mozambique: a case study. Naga, The ICLARM Quarterly, October: 5-9
- O'Leary BC, Winther-Janson M, Bainbridge JM, Aitken J, Hawkins JP, Roberts CM (2016).

 Effective coverage targets for ocean protection. Conservation Letters, 9: 398-404
- Rubens J (2023). Review of marine management area development in Mozambique, 2014 to 2023. Report submitted to Fondation Ensemble, 18 pp

ANNEXES

Annex 1. Template for data collection (provided by WIOMSA).







ASSESSMENT OF COMMUNITY-MANAGED MARINE AREAS IN MOZAMBIQUE

Data Template

To	he	filled	hv	_	ikhulul	

- 1. Name of LMMA
- 2. Year Started
- 3. Development stage (e.g. Is the LMMA fully operational, or is it in developed stages? A) Proposed 2) In consultation/ formal and informal preparatory phase c) Operational
- 4. Lead community organisation (who are the people spearheading the running of the LMMA e.g. BMU, women)
- 5. Is the management group officially registered and recognised by the state
- 6. Number of members (men/women)
- 7. Has the LMMA been mapped?
- 8. GPS coordinates for the boundaries
- 9. Areas, size
- 10. Is a management plan in place? (e.g. Is there a management plan recognised by the government for the area? Yes, No, the Process is ongoing)
- 11. Management type (e.g. Permanent closure, Seasonal Closure, Gear management)
- 12. Is the area LMMA managed as closure or as part of a larger conservation area? (e.g. Single closure, Part of Larger conservation areas)
- 13. Is the area within government-gazetted areas? (e.g. In a marine reserve)
- 14. Main resource protected (e.g. corals, mangroves)
- 15. Primary objectives (e.g. fisheries, tourism, cultural)
- 16. Income activities in LMMA
- 17. Sources of funding (e.g. NGO, Government)
- 18. Which organisation (e.g. BMUs, NGOS, government organisations) do you work with?
- 19. Challenges to LMMA management/operations.

Annex 2. List of LMMAs per province and type of data collected. Q = Questionnaire; S = Shapefile.

Area	Q	S
Cabo Delgado	9	4
Santuário Porto do Ibo		
Santuário Ilhas Sencar and Quilalea		
Santuário Matemo-Golfinho		
Área do CCP de Namau		Y
Santuário de Ruela	Y	
Área do CCP de Bandar	Y	
Área do CCP de Bandar	Y	
Santuário de Bandar	Y	
Área do CCP de Gimpia	Y	Y
Santuário de Gimpia	Y	Y
Área do CCP de Gimpia	Y	Y
Santuário de Namavi	Y	
Santuário da Ilha de Vamizi	Y	Y
Reserva de Quirinde		
Reserva de Quiwa		
Reserva de Lalane		
Reserva de Quifiuque		
Reserva de Nsangue Ponta		
Reserva de Malinde		
Nampula	16	17
Santuário Amadichale (Libelula)	Y	
Santuário Bonito	Y	
Santuário Mulala	Y	
Santuário de Ossimba	Y	
Reserva do Baixo Pinda	Y	
Reserva de Memba Sede	Y	
Santuário de Nuarro		
Santuário de Quissanga	Y	
Santuário de Sanculo		
Santuário de Insular	Y	
Santuário de Pulizica	Y	Y
Reserva Comunitária de Naholoco	Y	
Reserva de Mangal de Mulelene	Y	
AGC de Namige	Y	Υ
Reserva Comunitária da Mesquita	Y	Y
Reserva de Macupe	Y	Υ
APGC-Moma-Norte		Υ
APGC-Moma-Centro		Y
APGC-Moma-Sul		Υ
Santuário Comunitário de Thapua	Y	Y
Santuário de Comunitario de Corane	Y	Y
APGC-Angoche-Norte		Υ
Reserva de Dubai		Υ
Reserva de Sindiar		Υ
Reserva de Nrimpili		Υ

APGC-Angoche-Centro		Y
Reserva de Malacassa		Y
Reserva de Dragão		Y
APGC-Angoche-Sul		Y
Zambézia	9	23
Santuário de Icídua	Y	Y
Reserva Comunitária de Nhangome	Y	† ·
Reserva Comunitária de Nhangome	Y	
Reserva Comunitária de Chuabo		
Dembe	Y	Y
Reserva Comunitára da Ilha de Edugo	Y	Y
Santuário Comunitário de Bajone	Y	Y
Santuário de Gurai	Y	Y
Reserva Comunitária de Cabur	Y	Y
Reserva Comunitária de Olinda	Y	
APGC - Pebane Norte		Y
Reserva do Rio Lugune		Y
Reserva de Epicage		Υ
Reserva de Naburi		Y
Reserva de Namadiba		Y
Reserva do Rio-Molocue		Y
Reserva de Muhaua		Y
Reserva de Hamuene		Y
Reserva de Narite		Y
APGC - Pebane-Centro		Y
Reserva do Rio Moebase		Y
Reserva do Rio Cui-Cui		Υ
Reserva do Rio Mulobuana		Y
APGC - Pebane-Sul		Y
Reserva do Rio Muniga		Y
Reserva de Nagulue- Viriela Pedra		Υ
Reserva de Muabato		Y
Sofala	5	4
Reserva de Nhangau	Y	
Reserva Comunitária do Rio Ladrao	Y	Y
Reserva Comunitária de Nhangau	.,	
(mangrove)	Y	Y
Reserva Comunitária de Chissape	Y	Y
TBA (Coutada 5 marine expansion)	Y	Y
Inhambane	24	23
AGC de Vuca	Y	Y
Reserva de Vuca	Y	Y
Reserva de Petane	Y	Y
AGC de Petane	Y	Y
Reserva de Fequete	Y	
AGC de Fequete	Y	Y
AGC de Mococuene	Y	Y
Reserva de Mococuene	Υ	Υ

AGC de Tsondzo	Y	Y
Reserva de Tsondzo	Υ	Υ
AGC de Nhangondzo	Υ	Y
Reserva de Nhangondzo	Υ	
Santuário de Guiduane	Υ	Y
Santuário de Marragane	Υ	Y
Santuário de Guindziwe	Y	Y
Santuário de Ponte Cais	Υ	Y
Santuário de Guidzivane	Υ	Y
Santuário de Guilalene	Υ	Υ
Santuário de Chamane	Υ	Y
Santuário de Jogó	Υ	Y
Santuário de Guibele	Υ	Υ
Santuário de Thumbine	Y	Y
Santuário de Torotoro	Y	Υ
Santuário de Maxixe	Y	Υ
Gaza	0	0
APGC-Foz-do-Rio-Limpopo		
Maputo	3	2
Área Comunitária de Sathuma	Υ	Υ
Santuário Bembe, Mavumene	Y	Y
AGC de Bembe, Mavumene	Υ	
Total	66	74