COASTAL ECOSYSTEM MONITORING AND RESEARCH CAPACITY BUILDING

SUMMARY REPORT

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COASTAL ECOSYSTEM MONITORING AND RESEARCH CAPACITY BUILDING

Cover: Divers conducting reef monitoring at the Maputo National Park, southern Mozambique. Photo: Jenny Strömvoll.

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BACKGROUND AND CONTEXT

The Ocean Country Partnership Programme (OCPP), a UK government-led programme funded by Official Development Assistance (ODA) under the Blue Planet Programme aims to support countries to strengthen marine science expertise, develop science-based policy and management tools and create educational resources for coastal communities. The Joint Nature Conservation Committee (JNCC), is the delivery partner of the OCPP, which has three main objectives:

i) Marine Pollution: supporting countries to be equipped with the skills and expertise needed to tackle, reduce and mitigate marine pollution through the development of science led policy and improve our understanding of the impacts of pollution, as well as identifying and supporting effective responses, we will make sure that communities are better equipped to prevent and manage marine pollution. This will improve health and livelihoods;

ii) Sustainable Seafood: supporting the development of the skills and expertise needed to adopt sustainable seafood practices to reduce risks such as the spread of zoonotic diseases from unsustainable or unsafe activities and support trade in safe seafood. Assisting countries to crack down on illegal, unreported and unregulated fishing by supporting the development of better management, monitoring and enforcement capabilities; and

iii) Marine Biodiversity: supporting countries to develop the skills and expertise needed to establish designated, well-managed and enforced marine protected areas to support healthy ecosystems with thriving biodiversity and fisheries that communities rely on for food and livelihoods. OCPP aims at achieving these objectives by strengthening marine science expertise, developing evidence-based policy and management tools, and creating educational resources for coastal communities.

As part of the OCPP support to Mozambique, JNCC supported a knowledge exchange opportunities to relevant stakeholders in relation to Mozambique's coastal habitats, their ecosystem services benefits, threats and monitoring approaches. This report provides a summary of Day 1 of the workshop, which was dedicated to monitoring, data analysis and decision making, executed under Contract C24-0604-2013 between the JNCC and Fundação Likhulu.

THE WORKSHOP

The Workshop was held in Maputo on 24 March 2025, and was well attended, with a total of 40 people participating (17 women and 23 men; Figure 1). As proposed, four sessions were delivered following the Agenda (Annex 1). These are described below:

Session 1: Introduction and Context. This introductory session presented and discussed an overview of why monitoring is important in the Mozambican context and what monitoring programmes were implemented or/and are currently running (both within and outside Marine Protected Areas). The session started with a short Menti (www.mentimeter.com) survey to assess the participants' perceptions and understanding of the value/merits of implementing monitoring programmes and consistent data collection. Annex 2 presents the results of the Menti exercise. Only eleven participants took part in the exercise (the majority revealed later on, difficulties accessing the platform due to restricted connectivity), the majority were well aware what "ecological monitoring" was and its value. The majority also stated that they took part in periodic data collection and made use of such data in their work. An interesting discussion followed the presentation. Difficulties and challenges of running long-term monitoring programmes and consistent data collection were highlighted.

Figure 1. Participants to Day 1 of the coastal ecosystem monitoring and research capacity building workshop.

Figure 2. Menti survey conducted during the first session.

Session 2: Seagrasses. The session started with a short Menti (www.mentimeter.com) survey to assess the participants' perceptions and understanding about seagrasses and legal instruments (Annex 4). Although the majority of the participants (60%) were aware that seagrass are plants with flowers, a considerable proportion though that seagrass were algae or true grasses (Poaceae or Gramineae). Most participants (77%) considered that Mozambican legislation is not sufficient to guarantee the management, protection and restoration of these ecosystems. It was also widely mentioned that there are still no specific targets for seagrass conservation in the country. Furthermore, many reported lack of data, such as extent and ecology that would allow these targets to be defined and guided. However, it is worth mentioning that an important recent regional study as been published (Traganos *et al.*, 2022[1]), and presents national inventories of seagrass extension and total carbon stocks in countries such as Kenya, Tanzania, Mozambique and Madagascar, using remote sensing. These results reinforce the need to strengthen the legal instruments and research for the effective protection of seagrasses in Mozambique.

The presentation highlighted the current efforts taking place in Mozambique to conserve and protect seagrass meadows in Mozambique (Figure 3.), including the Pew-supported regional mapping initiative (Large-Scale Seagrass Mapping and Management Initiative - LaSMMI), the Status of Seagrasses in the WIO report, need for a national seagrass strategy in Mozambique, and the relevance of integrate clear targets for protection on the National Determined Contributions (NDCs).

Figure 3. Presentation of current efforts to conserve seagrasses in Mozambique.

[1] Traganos D, Pertiwi AP, Lee CB, Blume A, Poursanidis D, Shapiro A (2022). Earth observation for ecosystem accounting: spatially explicit national seagrass extent and carbon stock in Kenya, Tanzania, Mozambique and Madagascar. *Remote Sensing in Ecology and Conservation*, 8 (6): 778-792. https://doi.org/10.1002/rse2.287

Session 3: Coral Reefs. This session provide an overview of the current legal and institutional framework for the conservation of coral reefs (Figure 4), the National Strategy for the Conservation and Management of Coral Reefs (ECOR 2022-2032), the coral reef monitoring programme recently developed by Likhulu and WCS for InOM, and a case study where data from research/monitoring data were used to inform management of reefs in the Bazaruto Archipelago National Park.

After the presentation of the issues and the results of the surveys within the case study, participants were split into separate working groups and asked to come up with recommendations and management actions. The exercise proved to be a good opportunity for participants to discuss the issues and present recommendations, which were compared to the recommendations originally put forward in the technical report. These were then discussed in plenary in view of the actual work completed by the relevant authorities. The real-world challenges and nuances of moving from data-collection to decision-making and management actions were discussed and highlighted.

Figure 4. Presentation on the legal framework for coral reef conservation in Mozambique and case study.

Session 4: Mangroves. This session provided an overview of the current legal and institutional framework for the conservation of mangroves, the National Strategy and Action Plan for the Management of Mangroves (2020-2024), the establishment of the National Mangrove Council and NDCs, as well as a case study where data from research were used to inform management of the mangroves in Matola District (peri-urban settlements located ca. 20 km from Maputo). Similarly, the session started with a Menti exercise. Overall, participants were aware about mangrove ecology and biodiversity, and recognized the existence of sufficient legislation to manage, protect and restore mangroves. Although all participants were aware of mangrove targets for restoration, almost a third believed that the available data are not sufficient to establish targets for management, protection and restoration. Group work followed the presentation (Figure 5. **Group work to discuss the mangrove case study.**) and participants were asked to propose recommendations and management actions, which were discussed in plenary, contrasting with the recommendations put forward on the technical report and actions implemented thus far.

Figure 5. Group work to discuss the mangrove case study.

CONCLUSION AND RECOMMENDATIONS

The approach used created good opportunities for plenary discussions about the realities of data strength to support decisions, and the challenges/constraints of implementing these decisions. While the initial Menti survey had a low participation due to connectivity issues (and probably unfamiliarity with the platform), participants were keen and quickly took part in the following exercises.

The technical profile of the participants should also be balanced to allow operational and policy aspects, to be brought to the discussions.

It is recommended that in future initiatives a lecture for a broad group of participants working in marine conservation is included, followed by a round-table meeting (20-25 people) with specific agendas for policy decisions and way-forward plans. This group size would also allow more in-depth and focused discussions.

ANNEXES

Annex 1. Workshop agenda

Eco-sistemas costeiros: Seminário sobre o lema: da Ciência à Política, Março 2025, Maputo

De 24 a 28 de Março de 2025 no Hotel Meliã Sky, em Maputo, Moçambique.

O objectivo deste seminário é o de reforçar a capacidade de análise de dados marinhos e costeiros para informar o desenvolvimento de políticas e de estratégias para a expansão e a gestão de Áreas Marinhas Protegidas (AMP) e a protecção do habitat costeiro.

Horários: Chegar às 08:45 para um início das sessões de trabalho às 09:00, de segunda-feira 24 à quinta-feira 27 de Março de 2025. Será fornecido um pequeno lanche à chegada.

Agenda:

Hora	Sessão	Apresentador/Facilitador
24 de Março de 2025 1º Dia: Monitorização dos eco-sistemas costeiros para a sua gestão.		
08:45	Registo dos participantes	OCPP
09:00	Boas-vindas	OCPP
09:30	**Sessão 1: Introdução e antecedentes.** Esta sessão introdutória apresentará e discutirá uma visão geral da importância da monitorização no contexto moçambicano e os programas de monitorização que foram implementados e/ou estão actualmente em curso (tanto dentro, como fora das Áreas Marinhas Protegidas (AMP)).	Fundação Likhulu
11:00	Pausa	
11:15	**Sessão 2: Ervas marinhas.** Esta sessão irá destacar os esforços actuais que estão a ser desenvolvidos em Moçambique para conservar e proteger as pradarias de ervas marinhas em Moçambique, incluindo a iniciativa de mapeamento regional apoiada pela Pew Charitable Trusts (Iniciativa de Mapeamento e Gestão de Ervas Marinhas em Grande Escala (LaSMMI)), o relatório sobre a Situação das Ervas Marinhas no Oceano Índico Ocidental (WIO), a necessidade de uma estratégia nacional para as ervas marinhas em Moçambique, as Contribuições Determinadas a Nível Nacional (NDC).	Fundação Likhulu
13:00	Almoço	
14:00	**Sessão 3: Recifes de corais.** Esta sessão fornecerá uma visão geral do actual quadro jurídico/quadro para a conservação dos recifes de coral, a Estratégia Nacional para a Conservação e Gestão dos Recifes de Coral (ECOR 2022-2032), o programa de monitorização dos recifes de coral recentemente desenvolvido pela Likhulu para o Instituto Oceanográfico de Moçambique (InOM) e um estudo de caso em que os dados da investigação/monitorização foram utilizados para informar a gestão dos recifes no Parque Nacional do Arquipélago de Bazaruto e no Parque Nacional de Maputo.	Fundação Likhulu
15:30	Pausa	
15:45	Sessão 4: Mangais. Esta sessão fornecerá uma visão geral do actual quadro jurídico/quadro para a conservação dos mangais, a Estratégia Nacional e o Plano de Acção para a Gestão dos Mangais (2020-2024), a criação do conselho nacional dos mangais e as Contribuições Determinadas a Nível Nacional (NDC), bem como um estudo de caso em que os dados da investigação/monitorização foram utilizados para informar a gestão dos mangais na Matola.	Fundação Likhulu
16:45 - 17:00	Encerramento	

Annex 2. Results of the Menti exercise: ecological monitoring

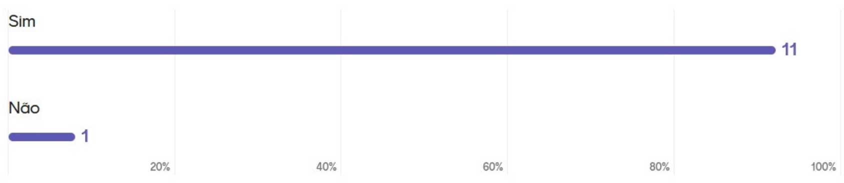
1 - O que entende por monitoria ecológica?

- Levantamento sistematico de dados biologicos
- Colecta de dados sistematicamente e consistente
- Monitoria ecológica envolve a compreensão e desenvolvimento de acções conducentes a sustentabilidade ambiental
- A monitoria ecológica é o acompanhamento e a coleta de dados sobre ecossistemas e espécies para avaliar mudanças ambientais e impactos, com o objetivo de apoiar a conservação e sustentabilidade
- Acompanhamento da saúde do ecossistema, após intervenção ou nem por isso.
- Monitoria é o processo de avaliação do estado de conservação de um meio...
- Colecta de dados que permitem avaliar o estado ecologico. Ter uma linha de base para avaliar as tendêcias e mudanças
- Avaliação é acompanhamento das características, físicas do ambiente e a sua interação
- Levantamentos de daos biologicos
- Avaliação dos ecossistemas
- identificar problemas e ajudar nos a tomar decisoes

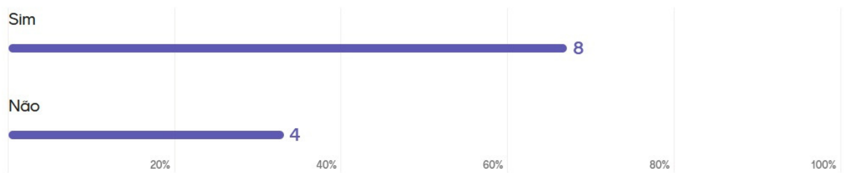
2 - Porquê monitorar?

- Para avaliar o estado dos ecossistemas
- Para saber que impactos as nossas acções estão a ter no meio ambiente
- Para avaliar alguma mudança, avaliar alguma intervenção.
- Para conhecer o estado do ambiente e fundamentar medidas de gestao
- Ter informação a longo prazo para permitir tomada de decisões
- Para agirmos de forma preemptiva
- Providenciar informacao que posss apoiar na gestao e tomada de decisao
- Garantir a preservacao dos ecossistemas
- Para conhecer o estado; Para saber o quanto um determinado meio desenvolve em um determinado espaço de tempo;
- Para avaliar o estado
- Avaliar o estado e melhor planificar
- Garantir o melhoramento das espécies

3 - Executa alguma monitoria ecológica no seu trabalho?



4 - Faz uso de dados de monitoria no seu trabalho quotidiano?



Annex 3. Results of the Menti exercise: seagrasses.

Annex 4. Results of the Menti exercise: mangroves.