

Ocean Country Partnership Programme

An MPA roadmap framework to support the implementation of MPAs in Ghana

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Contents

List of Abbreviations	ii
List of Figures	iii
List of Tables	iii
1. Introduction	1
2. Analytical Basis for the Roadmap	2
3. High-level Framework for an MPA Implementation Roadmap in Ghana.....	6
3.1. Management Stage	7
3.2. Monitoring Stage	9
3.3. Assessment Stage.....	11
4. Proposed Actions for Roadmap Implementation	12
4.1. Proposed Actions for Roadmap Implementation at GCTP (Local) Area	16
5. Next Steps	18
6. Conclusions	20
7. References	21

List of Abbreviations

EPA	Environmental Protection Agency
FC	Fisheries Commission
GCTPA	Greater Cape Three Points Area
HM	Hen Mpoano
LUSPA	Land Use and Spatial Planning Authority
MESTI	Ministry of Environment, Science, Technology, and Innovation
METT	Management Effectiveness Tracking Tool
MLNR	Ministry of Lands and Natural Resources
MMA	Management, Monitoring, and Assessment
MoFAD	Ministry of Fisheries and Aquaculture Development
MoJAGD	Ministry of Justice and Attorney-General's Department
MPA	Marine Protected Area
MPA-MEC	Marine Protected Area Management Executive Committee
MPA-TEC	Marine Protected Area Technical Advisory Committee
NMFMP	National Marine Fisheries Management Plan
NGO	Non-Governmental Organisation
SMART	Specific, Measurable, Achievable, Relevant, and Time-bound
URI	Universities and Research Institutions
WD	Wildlife Division

List of Figures

Figure 1: JNCC’s MPA implementation cycle.3

Figure 2: Key steps taken during the MPA monitoring stage.4

Figure 3: Diagram showing the skeleton of the proposed high-level roadmap framework ...6

Figure 4: Summary of proposed actions for post-MPA implementation.19

List of Tables

Table 1: Roadmap structure with example actions proposed for each Strategic Objective (SO) under each of the three post-MPA implementation stages..... 13

Table 2: Roadmap structure for GCTP Post-designation MPA Implementation..... 16

1. Introduction

Since the early 2000's, Marine Protected Area (MPA) establishment and implementation have been central in marine conservation policy discourses and practices in Ghana. The first attempt at official gazettment of coastal and adjacent marine areas occurred under the Wetland Management (Ramsar Sites) Regulations in 1999. Subsequently, MPA establishment decisions have revolved around the identification and selection of candidate sites, undertaking baseline ecological assessments, community engagements, and the formation of an MPA technical and advisory committee with representatives from across a range of stakeholder groups. Ghana has signed several instruments related to the conservation of the marine environment, including those related to fisheries management and regulation such as The Fisheries Act 2002 (Act 625), Fisheries Regulation 2010 (LI 1968), and Co-Management Policy for the Fisheries Sector (2020). The nation is also a party to the United Nations Convention on Biological Diversity (CBD) and its Kunming-Montreal Global Biodiversity Framework, popularly known for its target to protect 30% of land and oceans by 2030 globally. At the national level, commitment towards establishment, and implementation of MPAs are elaborated in policies, legislations, and plans. For instance, the National Marine Fisheries Management Plan (NMFMP) (2022-2026) includes a target to establish two MPAs by 2026 (MoFAD, 2022).

Existing legislation in Ghana provides the mandate for relevant government institutions to establish and manage MPAs. Firstly, the Fisheries Act of 2002 (Act 625) empowers the Minister responsible for fisheries to declare marine reserves and make regulations concerning fisheries management, conservation, and quota systems, supporting the sustainable use of marine resources. Consequently, the Ministry of Fisheries & Aquaculture Development (MoFAD) acts as a central coordinating body, serving as a policy-making and rule-enforcing institution in MPA implementation. Similarly, the Wildlife Division (WD) under the Forestry Commission of the Ministry of Lands and Natural Resources (MLNR) plays a central role in MPA implementation within the framework of the Wildlife Preservation Act, 1961 (Act 43), and the Wildlife Resources Management Act, 2023 (Act 1115). The Division's mandate cuts across wildlife management in protected areas through species protection, habitat management, and regulation of sustainable practices.

Other government institutions such as the Ministry of Environment, Science, Technology and Innovation (MESTI) is required to be consulted as part of the processes of MPA establishment and implementation. In this vein, the Environmental Protection Agency (EPA's) mandate to utilise environmental assessments to regulate activities that could impact MPAs will be useful. Similarly, consultation with the Land use and Spatial Planning Authority (LUSPA), to leverage its responsibility for planning marine spaces and controlling development in sensitive ecosystems will be necessary for successful MPA establishment and implementation. The Ministry of Justice and Attorney-General's Department (MoJAGD) ensures that MPA establishment aligns with international conservation

protocols to which the country is a signatory. Metropolitan, Municipal, and District Assemblies (MMDAs) are mandated under the Local Governance Act of 2016, to coordinate development plans including MPA management plans with other government bodies.

The processes of active participation and engagement of stakeholders are critical for the successful establishment and implementation of Marine Protected Areas (MPAs) throughout the phases of identification and designation, management and enforcement, and monitoring and assessment. In Ghana, engaging local fishing communities and relevant traditional institutions as rights holders to fisheries resources is essential to garner local support for MPA implementation. In addition to rights holders, key stakeholders who have an interest and influence in MPA establishment and implementation decisions include non-governmental organisations, cooperatives, committees and associations, private sector entities, as well as international, multilateral, and bilateral organisations, media outlets, universities, and research institutions.

In the Greater Cape Three Points Area (GCTPA) of Ghana's Western region, the aforementioned stakeholders have intensified action and mobilised resources at the national, regional, district and community levels over the past three years to explore the potential for establishment of Ghana's first MPA. Furthermore, fisheries and habitats assessments, local ecological knowledge mapping, establishment of governance frameworks, community outreach and marine education actions have been piloted to model post-designation implementation of a future MPA in the GCTPA. This proposal outlines a high-level framework for an MPA implementation roadmap to guide future actions towards MPA establishment and implementation in Ghana. The framework is non-prescriptive and, therefore, can be adapted and used as a basis to complete a comprehensive MPA roadmap using more in-depth stakeholder consultation.

2. Analytical Basis for the Roadmap

To effectively develop a high-level post-designation implementation roadmap for Marine Protected Areas (MPAs) in Ghana, this framework builds on findings from previous deliverables of the project 'Beyond MPA designation in Ghana (research and development),' particularly the 'Analytical review of Marine Protected Area (MPA) implementation policies, legislation, and strategies in Ghana' and the 'Stakeholder mapping and gender analysis in MPA establishment and implementation' reports. This document highlights key considerations for structuring the framework, based around the five staged Joint Nature Conservation Committee (JNCC) MPA implementation cycle (see Figure 1).

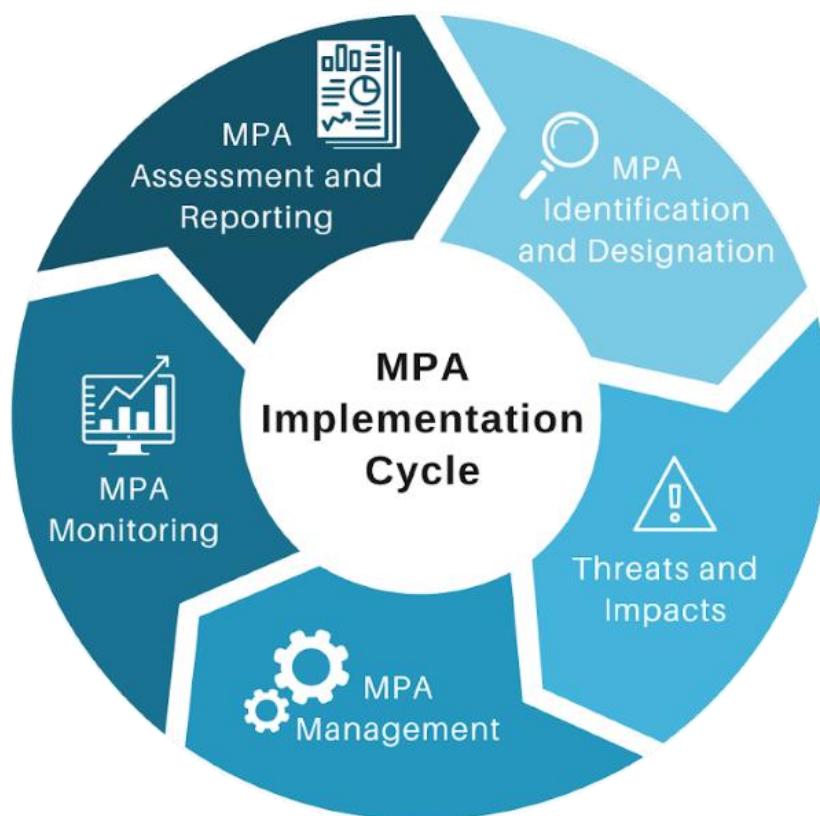


Figure 1: JNCC's MPA implementation cycle.

The three analytical stages of the roadmap are focused on the three MPA post-designation implementation stages; management (including the identification of threats and the impacts of those threats), monitoring, and assessment. Significant interdependencies exist amongst the identified stages. For instance, effective monitoring programs can assist and drive adaptive management of an MPA and also inform the management and zoning of an MPA network.

The outlined stages and their analytical basis to the roadmap are described as follows:

Management Stage

To effectively manage MPAs, understanding of threats to marine habitats, biodiversity and cultural assets within an MPA area is required. Threats generally refers to key issues or problems affecting an MPA site or region. Identifying and prioritising areas under threat helps create a management strategy and plan that concentrates management efforts, financial and human resources on the highest priority sites in the MPA area.

Collecting information on threats beforehand facilitates the management processes of MPAs by focusing on effective management of current and potential future threat and impacts. The understanding derived from this threat analysis informs the development of Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) MPA management objectives.

Considering the proposed GCTP MPA, over-exploitation of marine fisheries resources, loss of coastal habitats, pollution of the marine environment, oil and gas exploration and climate change are key among the threats to marine habitats and biodiversity (deGraft-Johnson *et al.* 2010; EPA, 2020).

Monitoring Stage

The monitoring of biological, social, economic, and governance indicators across MPA sites determine whether management strategies are meeting MPA or conservation management objectives. This stage is also useful for modifying conservation objectives (Ahmadia *et al.*, 2015), where deviations between the set objectives and monitoring outcomes are apparent (Kleitou *et al.*, 2021). Existing, and new data gathered during this stage, can help identify potential risk which could affect current and future MPA designs and management strategies (Giakoumi *et al.*, 2024) Additionally, this stage also includes monitoring the enforcement and compliance of regulations and management plans within the MPA area. Figure 2 presents key steps undertaken under the monitoring stage.

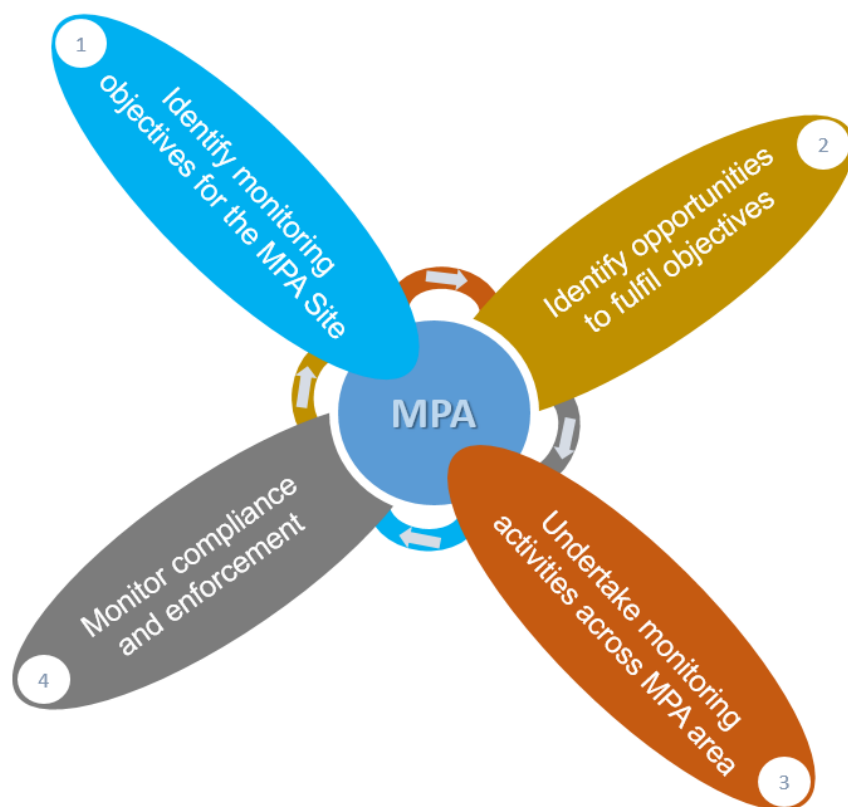


Figure 2: Key steps taken during the MPA monitoring stage.

In the proposed GCTP MPA, baseline ecological conditions have been established. This was based on surveys which utilised baited remote underwater video stations to assess

the diversity and relative abundance of demersal and pelagic fish around six rocky reefs. Earlier baseline ecological studies in this area were based on diving surveys and fishing surveys on some of the nearshore reefs (Ateweberhan et al., 2012).

Assessment Stage

The assessment stage uses the data and other information collected as part of the monitoring stage to undertake condition assessments of the MPA. In some cases, data gathered through the assessment stage sets the stage for communication, community engagement, and awareness campaigns to maximise the impact of the assessment outcome in the MPA area. Key areas of interest in MPA assessment are the development of indicator sets for establishing baseline conditions of key species, habitats, socio-economic parameters, and then tracking their changes as well as impacts over time. Similarly, assessments could focus on understanding the resilience of marine ecosystems to climate and non-climate stressors.

This assessment stage can then be used to drive adaptive management approaches so that MPAs can achieve local conservation goals and community expectations. In the case of the proposed GCTP MPA, assessments of critical marine habitats and biodiversity including microbenthic fauna, rocky reefs and sandy substrates have been undertaken. The rocky reefs and substrates are recognised as Ghana's most productive fishing grounds. These habitats are also essential nurseries for numerous marine species and play a crucial role in supporting local fisheries (Coastal Resources Center and Friends of the Nation, 2011). The assessments indicate that the area serves as a vital migratory route for marine mammals, such as whales and dolphins, and as a key resting spot for sardinellas (EPA, 2021).

Assessment also relates to fulfilling national and international commitments including contributions to global conservation targets. Thus, it is important that there is a clear plan and baseline in place for benchmarking progress against ecological and socio-economic parameters within the MPA.

To establish baselines from the point of creation of an MPA, it is important to assess and measure the impacts of existing protection and management efforts. Once these have been established through preliminary assessments, regular monitoring over time plays a key role in the management of the MPA. There are various tools for assessing MPA effectiveness such as the Management Effectiveness Tracking Tool (METT) (Stolton, Dudley & Hockings 2021). This particular tool can be used to track progress in management effectiveness of an individual protected area over time. It is designed to be relatively quick to implement and provides an overview of effectiveness including outcomes, assesses strengths and weaknesses in management and develops an action plan to address identified issues.

3. High-level Framework for an MPA Implementation Roadmap in Ghana

This framework is structured according to the three main post-implementation stages of JNCC's MPA implementation cycle: management, monitoring, and assessment. Figure 3 provides a skeleton of the framework, with the three MPA post-implementation stages forming the highest level of the structure. Within each of these stages, we propose identifying at least three strategic objectives that carry the greatest significance for implementing the roadmap, along with their scale of relevance at the governance level (National, Regional, and Local) and the main stakeholders that would be responsible for working on these objectives.

For each objective, we then propose actionable activities that will be developed based on local stakeholder input and interdisciplinary working groups. Subsequently, we suggest timelines for the implementation of each activity along with the lead and supporting stakeholders. Developing realistic timelines will depend on the participation and input from relevant stakeholders, alongside organisations or working groups that will drive the specific actions. Where appropriate, examples for the GCTP MPA have been included.

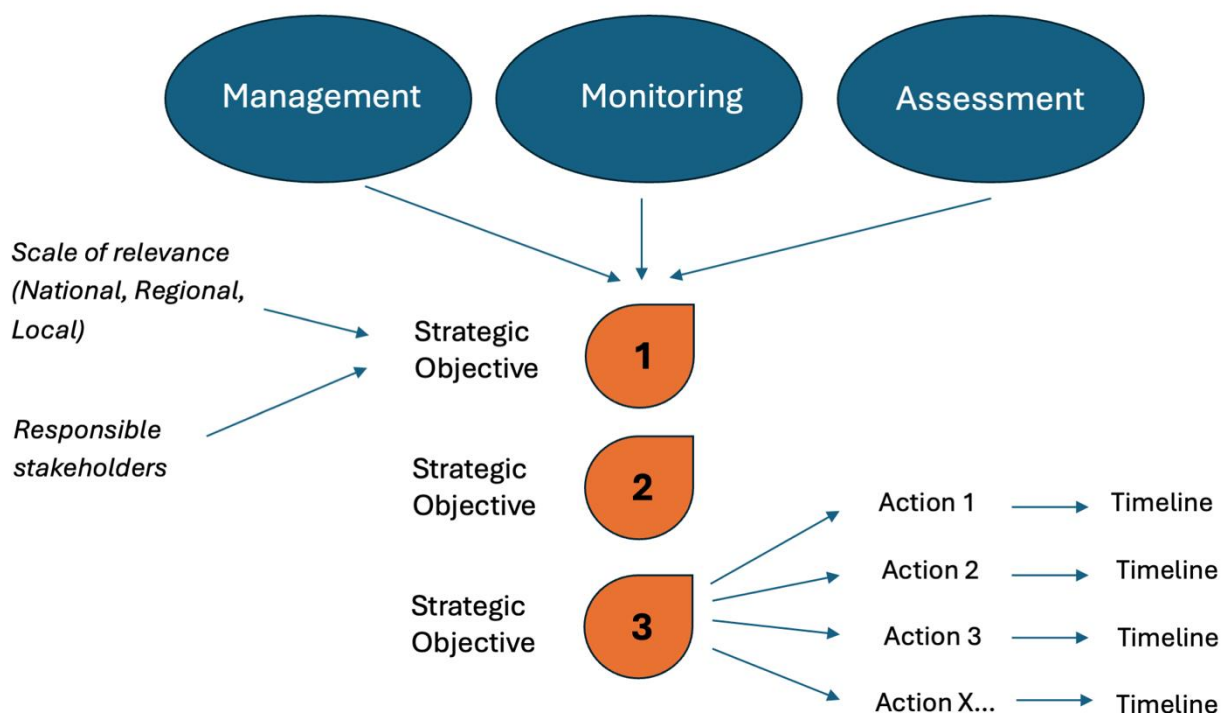


Figure 3: Diagram showing the skeleton of the proposed high-level roadmap framework

3.1. Management Stage

Strategic Objective 1: Identify threats and impacts

This objective focuses on identifying and assessing the current and potential future threats and impacts to the MPA site. Understanding these threats is essential for developing management interventions that address specific pressures and ensuring the MPA can achieve its conservation objectives. These threats and impacts can emanate from direct human activities or broader environmental changes, and particular attention should be given to how these threats may evolve over time.

Scale of governance

This objective involves all scales of governance: National, Regional, and Local.

Responsible stakeholders

Environmental threat assessments and State of the Marine Environment reports can be prepared by government agencies involved in biodiversity conservation such as MESTI/EPA. These and other reports such as biodiversity threats assessments can be done by NGOs such as Hen Mpoano (HM) and universities and research Institutions. Financial support from international organisations such international development agencies is beneficial. These assessments and the development of mitigation strategies should involve the participation of local communities and their local ecological knowledge. The key stakeholder groups include:

- Government agencies
- Non-Governmental Organisations (NGOs)
- Universities and Research Institutions (URI)
- International agencies
- Local communities
- Traditional authorities

Strategic Objective 2: Develop an MPA management plan and establish effective governance systems

The development of an MPA management plan is regarded as important for the effective management of MPAs. An effective MPA management plan can help to provide a common action plan for all concerned in the management of an MPA. In addition, the establishment of effective governance systems is fundamental to successful MPA implementation. This objective focuses on creating a clear framework that articulates the MPA's vision, goals, and operational strategies through participatory processes along with creating clear institutional arrangements that integrate traditional and governmental authority.

For the proposed GCTP MPA, there are governance systems spanning national, regional to the community level. For instance, the MPA Technical Advisory Committee (MPA-TAC)

is formed to provide technical advisory support services for planning, establishment, and implementation of MPAs and make recommendations on the implementation of MPA strategies to the Fisheries Commission (FC) and other relevant institutions. Community MPA management cluster committees have also been formed to potentially co-manage MPA subsequent to official designation.

Scale of governance

This objective involves all scales of governance: National, Regional, and Local.

Responsible stakeholders

In terms of developing and implementing an MPA management plan, the local communities and traditional authorities will be the main responsible stakeholders, but they need to be supported by the relevant government agencies, particularly MoFAD. Facilitation of this progress will also need support from NGOs such as HM and various cooperatives, committees and associations such as the Marine Protected Area Technical Advisory Committee (MPA-TAC) in addition to university-led marine and coastal research initiatives.

In order to establish effective governance systems, the main national government agencies involved in environmental management such as MoFAD/FC, MESTI/EPA, MNLR/WD are the main stakeholders as it has been previously identified that they have overlapping institutional mandates. In addition, as a co-management approach is proposed for the GC TPA MPA, local communities, and traditional authorities will also play important roles in establishing the governance systems. Key stakeholder groups include:

- Local communities
- Traditional authorities
- Government agencies
- Non-Governmental Organisations (NGOs)
- Cooperatives, Committees and Associations
- Universities and Research Institutions

Strategic Objective 3: Implement MPA management and monitor effectiveness.

This objective focuses on implementing MPA management plans and other management measures such as the enforcement of the MPA. It builds onto Objective 2 and prioritises the effective implementation of the specified management measures and assessing if the management is effective in achieving conservation objectives. This objective creates a transition to the monitoring stage by evaluating the effectiveness of management implementation process.

Scale of governance

This objective includes all scales of governance: National, Regional, and Local.

Responsible stakeholders

As the proposed GCTPA MPA is Ghana's first MPA, capacity building would be of benefit across all governance levels, from the local communities to the national agencies, and the regional MMDAs. Training personnel would likely involve practitioners from NGOs, universities and research institutions and may also benefit from outside contractors and learning exchanges with other countries.

Key stakeholder groups include:

- Local communities
- Government agencies
- Metropolitan, Municipal, and District Assemblies (MMDAs)
- Non-Governmental Organisations (NGOs)
- Universities and Research Institutions

3.2. Monitoring Stage

Strategic Objective 1: Identify monitoring objectives for the MPA

This objective focuses on establishing clear, measurable monitoring objectives that align with the MPA's conservation goals. By defining specific environmental, social, and economic indicators, this objective creates the foundation for efficient and integrated monitoring approaches that leverage community involvement and existing data collection efforts. Clear monitoring objectives ensure that resources are directed efficiently toward gathering information most relevant to assessing MPA effectiveness and informing adaptive management decisions.

Scale of governance

This objective focuses on the Local levels of governance, but with support from the National level.

Responsible stakeholders

- Local communities
- Traditional authorities
- Universities and Research Institutions
- Non-Governmental Organisations (NGOs)
- Government agencies

Strategic objective 2: Identify monitoring opportunities to fulfil monitoring objectives

This objective focuses on identifying and developing practical opportunities to implement the monitoring approaches established under the previous objective. It also identifies

where further data collection efforts are needed and the opportunities for community involvement in fulfilling these activities. By identifying these opportunities and leveraging diverse approaches and community ownership, this objective helps ensure that monitoring efforts are feasible, respected and sustainable.

Once the GCTPA is established, it will be a priority to develop monitoring opportunities based on previous baseline surveys and increased community involvement and training on monitoring techniques.

Scale of governance

This objective focuses on the Local, Regional and National levels of governance

Responsible stakeholders

Local communities and universities and research institutions are the key stakeholders for implementing community-led monitoring initiatives. NGOs in collaboration with government agencies are best placed to undertake trainings and support participatory development of the monitoring. These key stakeholder groups include:

- Local communities
- Universities and Research Institutions
- Non-Governmental Organisations (NGOs)
- Government agencies

Strategic Objective 3: Monitor effective conservation and sustainable management of MPA

This objective focuses on the actual implementation of monitoring activities to track conservation outcomes and management effectiveness. It encompasses ecological monitoring, socioeconomic impact assessment, and compliance monitoring while emphasising community engagement throughout the process. This monitoring approach provides the evidence base needed for adaptive management decisions while fostering community ownership, understanding and education.

Scale of governance

This objective focuses on the Local levels of governance, but with support from the National level.

Responsible stakeholders

Local communities and traditional authorities are the key stakeholders for implementing community-led monitoring initiatives.

These key stakeholder groups include:

- Local communities
- Traditional authorities
- Government agencies
- Universities and Research Institutions
- Non-Governmental Organisations (NGOs)

3.3. Assessment Stage

Strategic Objective 1: Centralise data sharing and reporting systems

This objective focuses on ensuring all stakeholders have access to relevant information for the assessing the effectiveness of the of the MPA. A shared database could enhance coordination between national agencies and local governance by allowing streamlined access to the data that informed the designation and management of the MPA, in addition to data collected on MPA effectiveness in the monitoring stage. These data could be spatial data on the zoning of the MPA, the distribution of habitats, ecological data on marine life, social and economic data relevant to the site, such as livelihood surveys among others. Allowing shared access between stakeholders can help ensure data collection efforts are streamlined and information is readily available for assessing the MPA effectiveness and can be disseminated to the community.

Scale of governance

This objective includes all scales of governance: National, Regional and Local.

Responsible stakeholders

- Government agencies
- Metropolitan, Municipal, and District Assemblies (MMDAs)
- Local communities
- Universities and Research Institutions

Strategic Objective 2: Assess and report on the effectiveness of the MPA

This objective focuses on assessing if the MPA is performing to expectations and meeting conservation goals and objectives. Analysing and reporting on the ecological and socioeconomic indicators, then disseminating this information with communities, the public and other stakeholders, can also further engage community support and compliance.

This should also consider assessing if MPA implementations are in alignment with national and international targets such as the 30x30 target of the Kunming-Montreal Global Biodiversity Framework.

Scale of governance

This objective includes all scales of governance: National, Regional and Local.

Responsible stakeholders

- Local communities
- Traditional authorities
- Government agencies
- Metropolitan, Municipal, and District Assemblies (MMDAs)
- Universities and Research Institutions
- Non-Governmental Organisations (NGOs)
- Media

Strategic Objective 3: Use assessment findings to drive adaptive management

Successful MPAs require adaptive management approaches that respond to assessment findings and community expectations. This objective focuses on integrating assessment results into decision-making processes to modify the conservation objectives or management approaches as needed. It establishes the feedback loop that completes the implementation cycle, ensuring that management and monitoring activities adapt based on assessments of MPA effectiveness. This adaptive management approach acknowledges that MPA implementation is not a linear process but rather a continuous cycle of management, monitoring, assessment, with constant refinement. This objective ensures that the MPA implementation remains responsive to emerging challenges and opportunities, ultimately enhancing its effectiveness in achieving conservation goals.

Scale of governance

This objective focuses on the National and Local levels of governance.

Responsible stakeholders

- Government agencies
- Local communities
- Traditional authorities
- Metropolitan, Municipal, and District Assemblies (MMDAs)
- Universities and Research Institutions
- Non-Governmental Organisations (NGOs)

4. Proposed Actions for Roadmap Implementation

Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) objectives and associated actions, where the key stakeholders and their respective roles are identified, can help steer the strategic objectives in the right direction. To keep pace, timelines for each action can be developed with stakeholder input to drive the strategic objectives towards completion.

Table 1 summarises proposed actions associated with each of the Strategic Objectives (SOs) introduced in Section 3. For each SO, the scale of governance is either at the National (N), Regional (R) or Local (L) levels. Regarding the temporal scales, 2026 denotes related milestone in the National Marine Fisheries Management Plan (MFMP), which targets establishment of two MPAs by the same year. Actions proposed for 2030 aligns with Ghana's commitments towards achieving 30x30 targets under the Kunming-Montreal Global Biodiversity Framework while 2035 is indicative of the minimum timescale required to realise marine ecosystem recovery, subject to the implementation of associated actions.

As this is proposed as a high-level framework guide, these actions, designated stakeholder groups and timelines to drive each action forward are developed as a starting point for future development. Achieving a fully developed roadmap would require extensive stakeholder consultation and a transparent and inclusive process to ensure that the actions described are most appropriate in respect to the associated stage of MPA implementation, and to support stakeholder's empowerment in decision-making processes. However, as a starting point, we have identified the most relevant leading (L) and supporting (S) stakeholders associated with each action. Additionally, for some proposed actions, specific government institutions have been proposed to oversee their implementation.

The following actions in Table 1 are provided as examples, and in the future, there may be more actions associated with each strategic objective. To fully develop an MPA implementation roadmap, participatory workshops across national, regional and local scales, could be convened and actions developed as an inclusive and adaptive process where responsible stakeholders and timelines can be refined.

Table 1: Roadmap structure with example actions proposed for each Strategic Objective (SO) under each of the three post-MPA implementation stages.

Management Stage									
Strategic Objective	Proposed Actions		Key Stakeholders and Role						
			L = Lead			S = Supporting			
			1	2	3	4	5	6	7
SO 1:	Identify threats and impacts								
	1.1.1	Assess the extent of human activities impacting the marine environment (N) – <u>MESTI/EPA</u>	L	S		S			
	1.1.2	Evaluate climate change impacts and vulnerabilities specific to the area (N, R, L) - <u>MoFAD/FC, MESTI/EPA</u>	L						
	1.1.3	Assess how these threats and impacts may change over time (N, R, L) - <u>MESTI/EPA</u>	L	S	S	S			

	1.1.4	Develop mitigation strategies through participatory processes (N, L) - <u>MESTI/EPA</u>			S	L	S		
SO 2: Develop an MPA management plan and establish effective governance systems									
	1.2.1	Develop an MPA management plan (N) - <u>MoFAD/FC</u>	L		S		S	S	
	1.2.2	Designate a single lead agency to coordinate MPA efforts at the National level (N) - <u>MoFAD/FC, MLNR/WD, EPA</u>	L		S	S	S		
	1.2.3	Establish an inter-ministerial commission (N) - <u>MoFAD, MESTI, MLNR/WD</u>	L			S	S		
	1.2.4	Develop community co-management structures (L) - <u>MoFAD/FC, MLNR/WD, NGOs</u>	S		S	S	L	S	
SO 3: Implement MPA management and monitor effectiveness									
	1.3.1	Implement the MPA management plan (N, L) - <u>MoFAD/FC, MLNR/WD</u>	S		L		S	S	
	1.3.2	Establish tracking systems to monitor implementation progress against targets (N) - <u>MoFAD/FC, MLNR/WD</u>	L		S		S	S	
	1.3.3	Develop and apply management effectiveness indicators (N, L) - <u>MLNR/WD, MoFAD/FC</u>	L		S	S	S	S	
	1.3.4	Train personnel on MPA management at all governance levels (N, R, L) - <u>MLNR/WD, MoFAD/FC</u>	L		S	S	S	S	
Monitoring Stage									
SO 1: Identify monitoring objectives for the MPA									
	2.1.1	Review previous baseline surveys and identify information gaps (N) - <u>MESTI/EPA</u>	L	S	S			S	
	2.1.2	Develop ecological monitoring objectives (N) - <u>MESTI/EPA</u>	L		S		S	S	
	2.1.3	Develop socioeconomic monitoring objectives (N) - <u>MESTI/EPA, MoFAD/FC</u>	L		S		S	S	
	2.1.4	Create a comprehensive monitoring framework (N) - <u>MLNR/WD, MESTI/EPA</u>	L	S	S		S	S	
SO 2: Identify monitoring opportunities to fulfil monitoring objectives									
	2.2.1	Map existing monitoring capacities across governance levels (N) - <u>MoFAD/FC</u>	L		S	S	S	S	
	2.2.2	Identify existing data collection programs that could inform the reporting of monitoring indicators (N) - <u>MESTI/EPA</u>	L		S		S	S	
	2.2.3	Integrate traditional ecological knowledge with scientific monitoring approaches (N, L) - <u>MESTI/EPA</u>	L	S	S	S	S	S	S
	2.2.4	Design community-based monitoring protocols (L) - <u>MMDA's</u>	L	S	S		S	S	S
SO 3: Monitor effective conservation and sustainable management of MPA									
	2.3.1	Monitor changes in biodiversity and fishery resources over time (L)	L	S	S	S	S	S	S
	2.3.2	Monitor changes in livelihoods and resource use patterns over time (L)	S	S	S		L	S	

	2.3.3	Establish compliance monitoring and MPA enforcement (N, L) - <u>MoFAD/FC, WD</u>	S	S	S		L	S	S
	2.3.4	Develop community engagement and education programmes for community monitoring initiatives (L)	S	S	S		L	S	S
Assessment Stage									
SO 1:	Centralise data sharing and reporting systems								
	3.1.1	Establish a centralised data repository (R) - <u>MMDA's</u>	L		S			S	
	3.1.2	Develop standardised reporting protocols (N) - <u>MESTI/EPA</u>	L		S		S	S	
	3.1.3	Implement information sharing mechanisms between governance levels (N) - <u>MLNR/WD, MoFAD/FC, MESTI/EPA, MMDA's</u>	L	S	S	S	S	S	S
	3.1.4	Create data visualisation tools for decision-makers and communities (L) - <u>MMDA's</u>	L		S	S	S	S	S
SO 2:	Assess and report on the effectiveness of the MPA								
	3.2.1	Assess progress towards meeting national and international targets (N) - <u>MoFAD/FC, EPA</u>	L	S	S		S	S	
	3.2.2	Conduct regular evaluations using the Management Effectiveness Tracking Tool (METT) (L) - <u>MMDA's</u>	L		S		S	S	
	3.2.3	Compare monitoring results against baselines and targets (N) - <u>MESTI/EPA</u>	L		S		S	S	
	3.2.4	Host multi-stakeholder workshops to present findings and gather feedback (R) - <u>MMDA's</u>	L		S		S	S	S
SO 3:	Use assessment findings to drive adaptive management								
	3.3.1	Develop decision frameworks that link specific assessment outcomes to management responses (N) - <u>MoFAD/FC, WD</u>	L	S	S		S	S	
	3.3.2	Suggest management measures based on scientific evidence and community feedback (N) - <u>MESTI/EPA</u>	L		S		S	S	
	3.3.3	Document and share lessons learned across governance levels (N) - <u>MESTI/EPA, MoFAD/FC</u>	L		S		S	S	
	3.3.4	Revise MPA objectives and strategies based on assessment outcomes (N) - <u>MESTI/EPA</u>	L		S		S	S	
List of stakeholder groups: 1. Government Agencies 2. Cooperatives, Committees, and Associations 3. Non-Governmental Organisations 4. Traditional Authorities 5. Local Communities 6. Universities and Research Institutions 7. Media									
Time Period: By 2026 By 2030 By 2035									

4.1. Proposed Actions for Roadmap Implementation at GCTP (Local) Area

The actions proposed in Table 2 are specifically tailored to the GCTP area, which shows promise of being the first MPA designated in Ghana. Generally, the outlined actions can provide early guidance for management, monitoring, and assessment following the MPA designation. While the majority of the actions under each implementation stage require planning and execution, a few actions, such as the formation and formalization of MPA co-management committees at the local and regional levels, are currently underway.

The latter could offer an entry point for addressing each of the strategic objectives identified under the management, monitoring, and assessment stages of the MPA implementation cycle. The proposed actions are anticipated to serve as blueprints for future MPAs established at the local level, similar to the GCTP area.

Table 2: Roadmap structure for GCTP Post-designation MPA Implementation

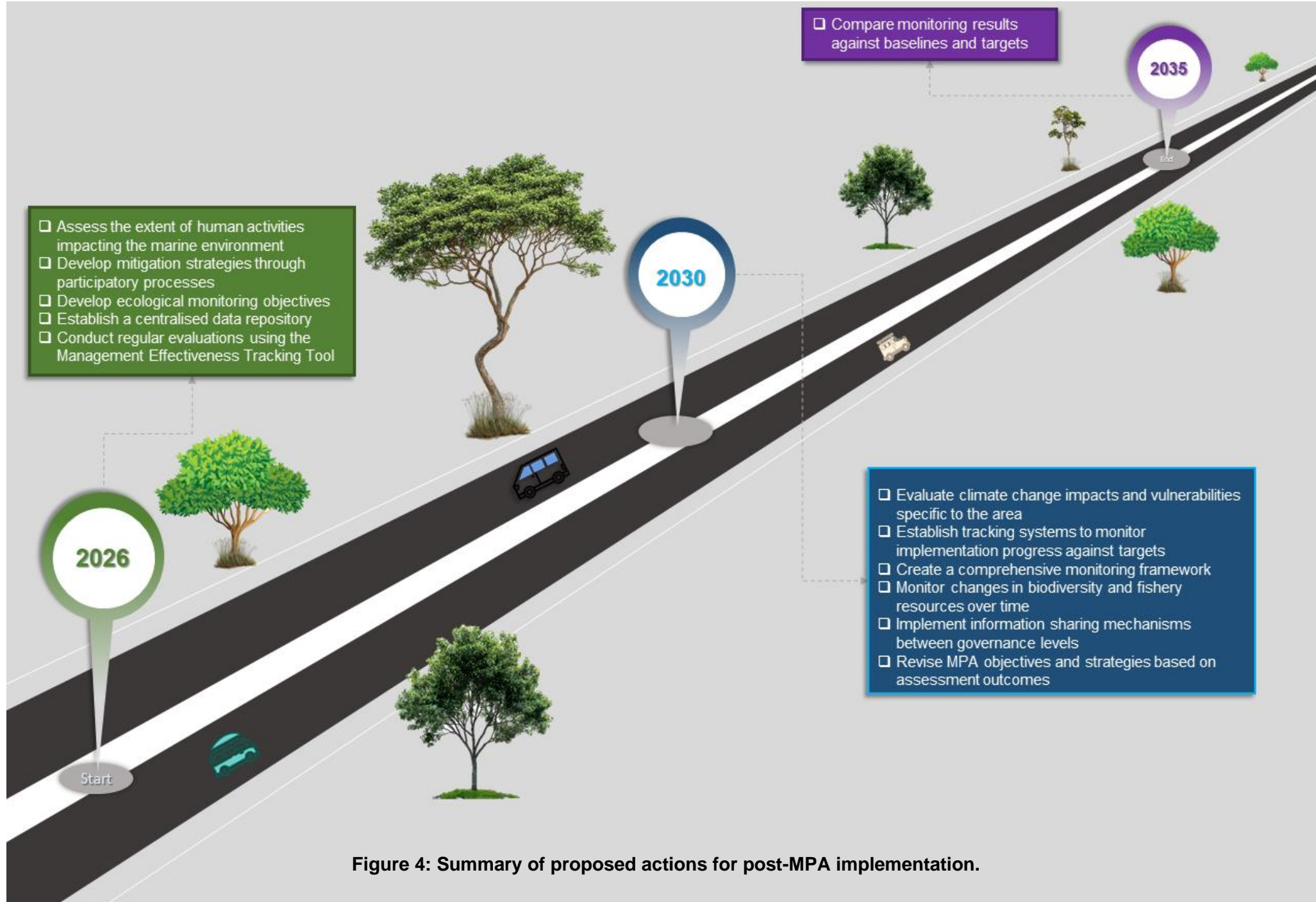
Management Stage								
Strategic Objective	Proposed Actions		Key Stakeholders and Role					
			L = Lead				S = Supporting	
			1	2	3	4	5	6
SO 1:	Identify threats and impacts							
	1.1.1	Evaluate the extent of human impact on the GCTP MPA – <u>MESTI/EPA</u>	L	S		S		
	1.1.2	Assess how these threats and impacts may change over time - <u>MESTI/EPA</u>	L					
	1.1.3	Evaluate climate change impacts and vulnerabilities specific to the GCTP MPA - <u>MoFAD/FC, MESTI/EPA</u>	L	S	S	S		
	1.1.4	Develop GCTP MPA impact mitigation strategies through participatory processes - <u>MESTI/EPA, URI</u>	L					S
SO 2:	Develop an MPA management plan and establish effective governance systems							
	1.2.1	Develop a GCTP MPA management plan - <u>MoFAD/FC</u>	L		S		S	S
	1.2.2	Establish an MPA Management Executive Committee (MPA-MEC) to oversee the development and implementation of the MPA Management Plan - <u>MoFAD/FC, NGOs</u>	L		S			
	1.2.3	Form and formalize community MPA management committees, cluster management committees, co-management structures - <u>MoFAD/FC, MLNR/WD, NGOs</u>	L		S			
SO 3:	Implement MPA management and monitor effectiveness							
	1.3.1	Implement the GCTP MPA management plan - <u>MoFAD/FC, MLNR/WD</u>	L		S	S	S	S
	1.3.2	Establish baseline conditions on habitat, species abundance and diversity including ecosystem	L					

		functions, and monitor their changes overtime - <u>MESTI/EPA, MoFAD/FC, MLNR/WD</u>							
	1.3.3	Evaluate GCTP MPA management effectiveness using METT - <u>MESTI/EPA, MLNR/WD, MoFAD/FC</u>	L		S	S	S	S	
	1.3.4	Train MPA-MEC and cluster management committees on MPA management - <u>MoFAD/FC, Media</u>	L		S	S	S	S	S
	1.3.5	Conduct public engagement and outreach events to discuss GCTP MPA activities - <u>NGOs, Media</u>			L		S		S
Monitoring Stage									
SO 1: Identify monitoring objectives for the MPA									
	2.1.1	Update baseline conditions taking into account emerging threats, information gaps, and opportunities - <u>MESTI/EPA, MoFAD/FC</u>	L						
	2.1.2	Develop monitoring objectives for key habitats, species and ecosystems in the GCTP MPA - <u>MESTI/EPA, MoFAD/FC</u>	L						
	2.1.3	Develop socioeconomic monitoring objectives for the GCTP MPA - <u>MESTI/EPA, MoFAD/FC</u>	L						
SO 2: Identify monitoring opportunities to fulfil monitoring objectives									
	2.2.1	Leverage existing data collection programs (e.g. on fish landings) to inform the reporting on monitoring indicators - <u>MESTI/EPA, MoFAD/FC</u>	L						
	2.2.2	Apply local ecological knowledge systems in mapping habitat, fishing grounds, cultural sites, fish spawning grounds etc. - <u>MESTI/EPA, NGOs</u>	L		S	S	S		
	2.2.3	Implement community-based monitoring protocols through established cluster management committees - <u>MMDA's</u>	L		S		S		
SO 3: Monitor effective conservation and sustainable management of MPA									
	2.3.1	Monitor changes in biodiversity and fishery resources over time - <u>MESTI/EPA, MoFAD/FC</u>	L		S				
	2.3.2	Monitor changes in livelihoods and resource use patterns over time - <u>NGOs, MESTI/EPA, MoFAD/FC, URI</u>	S		L	S	S	S	
	2.3.3	Establish compliance monitoring mechanisms and GCTP MPA enforcement - <u>MoFAD/FC, NGOs, MLNR/WD, Media</u>	L		S		S	S	S
	2.3.4	Develop community engagement and outreach plan to inform monitoring initiatives - <u>NGOs, Media, URI</u>			L			S	S
Assessment Stage									
SO 1: Centralise data sharing and reporting systems									
	3.1.1	Establish a GCTP MPA data repository - <u>MESTI/EPA, MoFAD/FC, MMDA's, NGOs, URI</u>	L		S			S	
	3.1.2	Share GCTP MPA data with relevant agencies - <u>MESTI/EPA, MoFAD/FC, MMDA's, NGOs, URI</u>	L		S			S	

	3.1.3	Create data visualisation tools for decision-makers and communities - <u>NGOs, MMDAs, Media</u>	S		L				S
SO 2: Assess and report on the effectiveness of the MPA									
	3.2.1	Assess progress towards meeting GCTP MPA targets - <u>MESTI/EPA, MoFAD/FC, MMDAs</u>	L	S	S		S	S	
	3.2.2	Conduct regular evaluations using the Management Effectiveness Tracking Tool (METT) - <u>MESTI/EPA, MoFAD/FC, NGOs</u>	L		S				
	3.2.3	Compare monitoring results against GCTPA baselines and targets - <u>MESTI/EPA</u>	L		S		S	S	
	3.2.4	Develop and implement a community engagement plan to present findings and gather feedback - <u>NGOs, MoFAD/FC, MESTI/EPA, MMDA's</u>	S		L		S	S	
SO 3: Use assessment findings to drive adaptive management									
	3.3.1	Update GCTP MPA management measures based on new evidence and community feedback - <u>MESTI/EPA, MoFAD/FC</u>	L		S		S	S	
	3.3.2	Document and share lessons learned among stakeholders - <u>NGOs, MESTI/EPA, MoFAD/FC, URI, Media</u>	S		L		S	S	
	3.3.3	Update GCTP MPA objectives and strategies based on assessment outcomes - <u>MESTI/EPA, MoFAD/FC</u>	L		S		S	S	
List of stakeholder groups: 1. Government Agencies 2. Cooperatives, Committees, and Associations 3. Non-Governmental Organisations 4. Traditional Authorities 5. Local Communities 6. Universities and Research Institutions 7. Media Time Period: By 2026 By 2030									

5. Next Steps

The roadmap outlined here should be regarded as a framework, as in the future it will need to be developed collaboratively with extensive stakeholder involvement (summary actions provided in Figure 4). The actions under the strategic objectives are currently examples and, in the future, these will be revised, and the actual leading and supporting stakeholder agencies and organisations will be identified rather than just stakeholder groups. This process will require a national stakeholder workshop, the formation of working groups and a clear dialogue regarding the proposed objectives in order for the key stakeholders to see if it is feasible for them to work on such actions and meet timelines.



6. Conclusions

This high-level roadmap framework provides a structured approach and guidance document for the future development of a comprehensive and adaptable roadmap for the effective implementation of MPAs in Ghana. By developing strategic objectives that focus on the management, monitoring, and assessment stages of the MPA implementation cycle, the framework aims to provide relevant guidance for the effective and efficient post-implementation phases of MPA designation. Considering that the GCTP MPA is Ghana's first proposed MPA, this roadmap framework will be essential for guiding the implementation of this MPA once it is officially designated. We have highlighted the significance of each strategic objective in the proposed MPA, with most holding priority status upon its designation.

As this MPA is proposed to be community-led and managed, there is an emphasis on local management that incorporates community perspectives and priorities. We believe this is a model that could be successfully used for other MPAs in the country, but it would be important to establish clear roles of government agencies and other institutions in supporting community-led MPAs. This roadmap framework is also proposed to be a living document that can also be adapted and updated in the future based on feedback and lessons learned in the MPA implementation process.

It was also clear from the earlier 'Analytical review of MPA implementation policies, legislation, and strategies in Ghana' and the 'Stakeholder mapping and gender analysis in MPA establishment and implementation' reports that there are key gaps and challenges in MPA policy and strategy implementation, particularly between government agencies. These gaps and challenges have been incorporated into the actions needed to progress the roadmap towards effective MPA implementation.

Successful MPA implementation, following post-designation, will require sustained commitment across governance levels, with particular attention to enhancing local capacity, establishing clear institutional mandates, and developing robust monitoring and assessment protocols. While this framework provides a foundation for MPA implementation planning, its effectiveness will depend upon the participation and engagement of key stakeholders in refining and developing a comprehensive roadmap.

As Ghana moves forward with implementing MPAs, this high-level framework should provide an important stepping stone for the development a full post-designation MPA implementation roadmap based on extensive stakeholder involvement.

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Ocean Country Partnership Programme

The Ocean Country Partnership Programme (OCP) is a UK Government-led programme delivered under the Blue Planet Fund in Overseas Development Assistance (ODA) eligible countries. Through this programme, Cefas, JNCC and MMO will provide technical assistance to support countries to tackle marine pollution, support sustainable seafood practices and establish designated, well-managed and enforced MPAs.



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