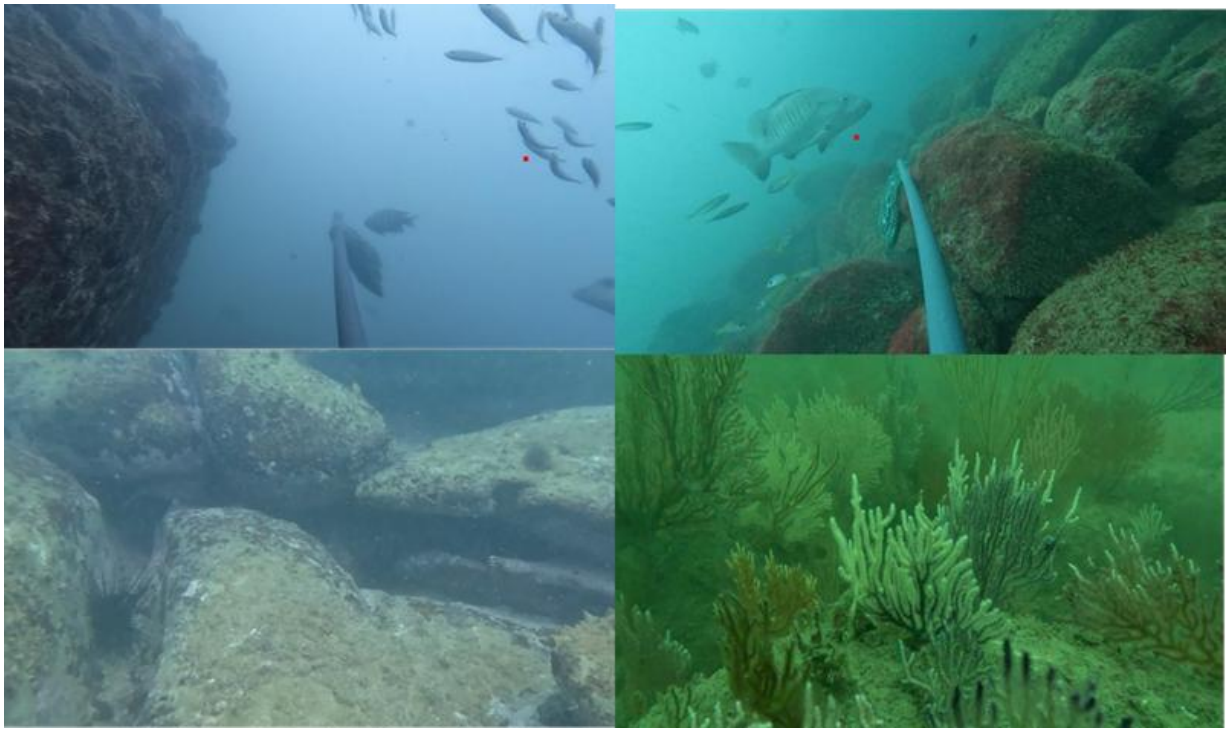

MANAGEMENT PLAN FRAMEWORK FOR THE GREATER CAPE THREE POINTS MARINE PROTECTED AREA AT THE AHANTA WEST AND NZEMA EAST MUNICIPALITIES OF GHANA

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March 2026

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This report should be cited as:
Nunoo, F.K.E and Kankam, S. 2026. Management Plan Framework for the Greater Cape Three Points Marine Protected Area at the Ahanta West and Nzema East municipalities of Ghana. 55 pp.

Evidence Quality Assurance:
This report is compliant with JNCC's Evidence Quality Assurance Policy
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Acknowledgements:

The authors would like to thank and acknowledge Defra on behalf of the UK government for the funding: project number GB-GOV-7-BPFOCPP in funding this work.

Funding Acknowledgement:

This project was funded with UK International Development from the UK Government through the Blue Planet Fund.

Ocean Country Partnership Programme:

The Ocean Country Partnership Programme (OCPP) 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 provide technical assistance to support countries to tackle marine pollution, support sustainable seafood practices and establish designated, well-managed and enforced MPAs.

Table of Content

List of Figures

List of Tables

Abbreviations

CBD	Convention on Biological Diversity
CCC	Community-Cluster Co-management Committee
CMG	Community Management Groups
CTPFR	Cape Three Points Forest Reserve
EBM	Ecosystem-Based Management
EAF	Ecosystem Approach to Fisheries
EPA	Environmental Protection Authority
FC	Fisheries Commission
FEU	Fisheries Enforcement Unit
FGD	Focus Group Discussion
GCTPA	Greater Cape Three Points Area
HM	Hen Mpoano
ICAM	Integrated Coastal Areas Management
IEZ	Inshore Exclusion Zone
IUU	Illegal, Unreported, and Unregulated
JNCC	Joint Nature Conservation Committee
LEK	Local Ecological Knowledge
LUSPA	Land Use and Spatial Planning Authority
MEST	Ministry of Environment, Science and Technology
MoFA	Ministry of Fisheries and Aquaculture
MPA	Marine Protected Area
MPA-MEC	Marine Protected Area – Management Executive Committee
MPA-TAC	Marine Protected Area – Technical Advisory Committee
MSP	Marine Spatial planning
NGO	Non-Governmental Organization
OCPP	Ocean Country Partnership Programme
SMART	Specific, Measurable, Achievable, Realistic, Time-bound
WD	Wildlife Division

Summary

The Greater Cape Three Points Marine Protected Area (GCTPA MPA) Management Plan Framework provides a structured approach for guiding the conservation and sustainable use of marine and coastal resources within the Greater Cape Three Points Area. The framework outlines the vision, objectives, governance arrangements, and strategic management approaches needed to protect critical habitats, support sustainable fisheries, and enhance the resilience of coastal ecosystems. It recognizes the ecological importance of the area as well as the socio-economic dependence of coastal communities on marine resources, and therefore promotes a balanced approach that integrates conservation with livelihood considerations.

The framework further identifies key threats to the marine and coastal environment and proposes broad strategies to address them through improved compliance and enforcement, ecosystem protection, stakeholder engagement, research and monitoring, and sustainable livelihood support. Central to the framework is a participatory governance approach that brings together government agencies, local communities, traditional authorities, research institutions, and civil society organizations. Through coordinated action and adaptive management, the framework provides the foundation for developing and implementing a comprehensive management plan that will guide the long-term conservation and management of the GCTPA MPA.

Acknowledgement

The development of this Management Plan Framework for the Greater Cape Three Points Marine Protected Area was made possible through the generous financial support of the Ocean Country Partnership Programme (OCPP). The process benefited greatly from the valuable technical guidance and review provided by members of the Marine Protected Area Technical Advisory Committee, whose expertise and insights helped strengthen the quality and relevance of the framework. We also extend our appreciation to Stephanie Clarkson of the Joint Nature Conservation Committee (JNCC) for her helpful review comments and constructive input during the development of the document. We further acknowledge the dedicated facilitation and drafting support provided by Prof. F. K. E Nunoo and Stephen Kankam, whose contributions were instrumental in guiding the consultative process and shaping the structure and content of this framework. Their collective efforts have helped lay a strong foundation for the effective management of the Greater Cape Three Points Area Marine Protected Area.

CHAPTER 1

1.0 Background

1.1 Marine Protected Areas (MPAs) as a conservation tool

One of the overarching objectives for establishing a network of Marine Protected Areas (MPAs) is to support sustainable development by strengthening the management of critical coastal and marine areas. MPAs function alongside other coastal management tools and collectively form a core component of integrated coastal areas management (ICAM). Globally, MPAs are increasingly recognized as essential tools for reducing human pressures on marine ecosystems and safeguarding the services they provide. MPAs are now routinely integrated with broader management frameworks such as ecosystem-based management (EBM), the ecosystem approach to fisheries (EAF), and marine spatial planning (MSP). Together, these approaches represent current best practices in achieving sustainable marine resource use (McConney, 2012)

MPAs can be established to serve a variety of purposes including protecting biodiversity and ecological functions, improving fisheries (e.g. through ecosystem-based fisheries management), promoting economic diversification, safeguarding national heritage, recreation, promoting local empowerment and decentralization, and protecting coastal zones from climate-change related impacts (Nunoo, 2018).

Establishing MPAs in Ghana represents a proactive and strategic approach to conserving and sustainably managing marine resources. Establishing MPAs in Ghana will complement existing fisheries management measures such as closed season, canoe moratorium, reclassification and gear directive by providing designated zones where fishing and other human activities are regulated. By protecting critical habitats and allowing fish stocks to recover, MPAs also contribute to the well-being of coastal fishing communities and the overall health of marine and associated ecosystems.

1.2 Legal and policy underpinning

Cabinet, at its Eighth meeting held on 7th October 2025, approved the establishment of Ghana's first Marine Protected Area (MPA) at the Greater Cape Three Points Area and directed the Ministry of Fisheries and Aquaculture to take the necessary steps to give effect to this decision through gazettement.

The declaration of the MPA is undertaken pursuant to Section 39 of the Fisheries and Aquaculture Act, 2025 (Act 1146**)**. In particular, Section 39(1) provides that:

"The Minister shall, on the advice of the Fisheries Commission and after consultation with relevant organizations, agencies, owners of adjoining land, the relevant District Assembly and other stakeholders, declare by notification in the Gazette, an area of the fishery waters and the seabed underlying the waters to be a marine fisheries reserve."

Furthermore, Section 39(3) of Act 1146 provides that:

"A person shall not, except with the written permission of the Minister,

a) engage in fishing,

b) dredge or take sand or gravel, or

c) otherwise disturb the natural habitat within a marine fisheries reserve.

These provisions confer full legal authority on the Minister responsible for Fisheries, acting on the advice of the Fisheries Commission and upon fulfilment of the prescribed consultation requirements, to declare by notification in the gazette the Greater Cape Three Points Area as a Marine Protected Area.

It also supports Ghana's obligations under regional and global frameworks:

The Convention on Biological Diversity (CBD);

- Kunming-Montreal Global Biodiversity Framework;
- The Sustainable Development Goals (SDG 14, specifically targets 14.2 and 14.5,); which call for the conservation and sustainable use of oceans, seas, and marine resources;
- The Abidjan Convention; and
- The African Union Blue Economy Strategy.

Target 3 of the Kunming-Montreal Global Biodiversity Framework calls for the conservation of 30 % each of terrestrial, inland water, coastal, and marine areas by 2030 through ecologically represented, well-connected and equitably governed systems of protected areas, and other effective area-based conservation measures (CBD, 2022). Such protected areas, as defined by the IUCN, are established for the "long term conservation of nature with associated ecosystem services and cultural values" (Lafolley, 2008). As a result, marine protected area (MPA) management has largely focused on conserving biodiversity by reducing anthropogenic threats such as overfishing, habitat loss, and pollution.

1.3 Context for management

The Greater Cape Three Points Area is one of Ghana's most ecologically significant coastal and marine areas located in the Western Region. It encompasses nearshore and offshore waters, coastal wetlands, rocky reef formations, mangrove ecosystems, and critical fish breeding and nursery habitats, which together form a biologically diverse and highly productive marine environment. These interconnected ecosystems support marine

biodiversity and support thousands of artisanal fisher folk and coastal households who depend on marine resources as their primary sources of food, income and employment, thereby contributing significantly to national food security (Coastal Resources Center and Friends of the Nation, 2013; Nunoo, 2018). However, years of overexploitation, illegal and destructive fishing practices, pollution, coastal degradation and climate change impacts have resulted in declining fish stocks and habitat degradation, increasing vulnerability of coastal livelihoods and undermining economic stability.

Management of the MPA aligns with national policies on fisheries management, biodiversity conservation and climate adaptation. It supports Ghana's obligations under the Convention on Biological Diversity (CBD); Abidjan Convention, Sustainable Development Goals (SDG 14) and the African Union Blue Economy Strategy.

1.4 Location, Geographic and Spatial Characteristics

Greater Cape Three Points is situated along the south-western coastline of Ghana at the country's southernmost tip, projecting into the Gulf of Guinea. The approximate central coordinate of the area is 4.9° N, 2.0° W, while the broader peninsula extends from about 4.8°–5.1° N and 1.9°–2.2° W (Figure 1).

The coastline covers approximately 60 km stretching from Domunli in the west to Ampatano in the east, and extends roughly 11 km offshore into the Gulf of Guinea. To the south lies the open Atlantic Ocean, while the Nyan River estuary forms a major eastern boundary. The western margin merges gradually with the Nzema coastline.

Topographically, the area is characterized by a low-lying coastal plain punctuated by rocky headlands, sandy beaches, estuaries, lagoons, and a narrow strip of coastal rainforest. Inland elevations rise gently into small hills ranging between 91 and 152 m above sea level, particularly within the Cape Three Points Forest Reserve. The marine environment consists of nearshore shallow waters, soft sediment habitats, and coral assemblages that support important spawning and nursery grounds for commercial fish species. Figures 2 and 3 show settlements located on sand barriers in Akwidaa and coastal features (cape) in Cape Three Points area respectively.

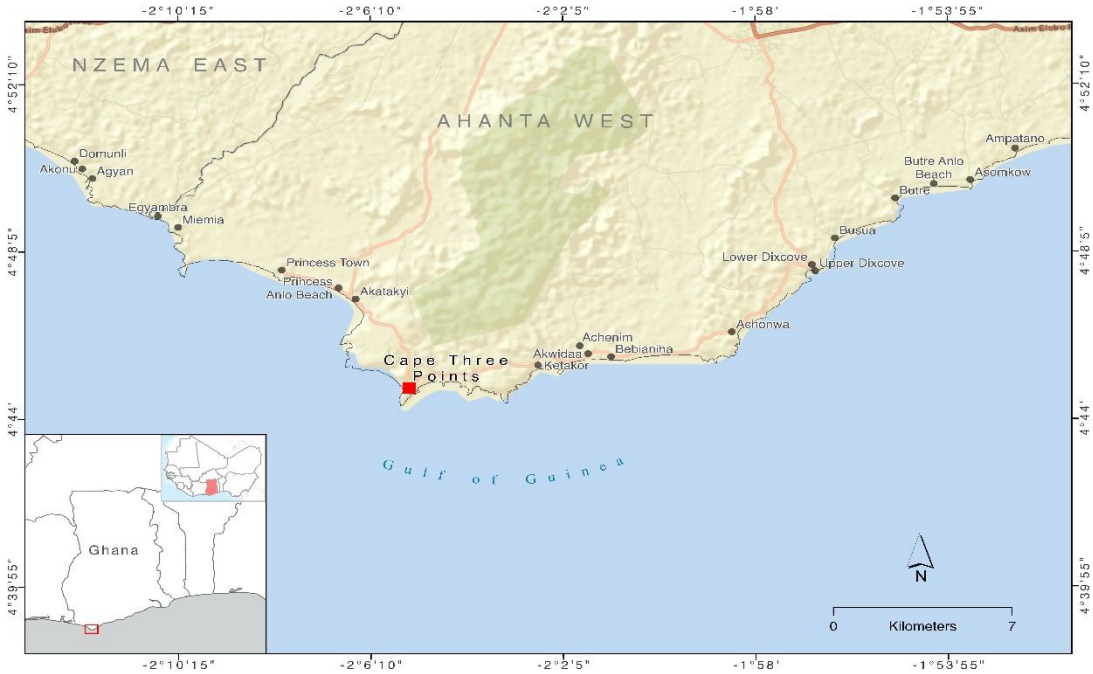

Figure 1: Cape Three points in the context of Ghana and West Africa

Figure 2: Aerial view of Akwidaa

Figure 3: Aerial view of Cape Three Points

The Greater Cape Three Points Area (GCTPA) spans 60 kilometres of coastline in the Ahanta West and Nzema East municipalities. The area is delineated by clearly demarcated geographical boundaries encompassing both marine and nearshore coastal environments within the Western Region. The legally binding boundary is defined by an approved schedule of survey coordinates based on the Ghana National Grid (GNG) and World Geodetic System 1984 (WGS 1984) reference systems. The geographic coordinates fall between **latitudes 4°38'19.15" and 4°51'24.07" North and longitudes 1°47'49.25" and 2°18'48.35" West**. The boundary extends 6 Nautical Miles into Ghana's Inshore Exclusion Zone (IEZ). The map illustrating the full spatial extent of the MPA and depicting the outer boundary lines, administrative limits, coastal features, settlements and zoning classifications is provided below (Figure 4).

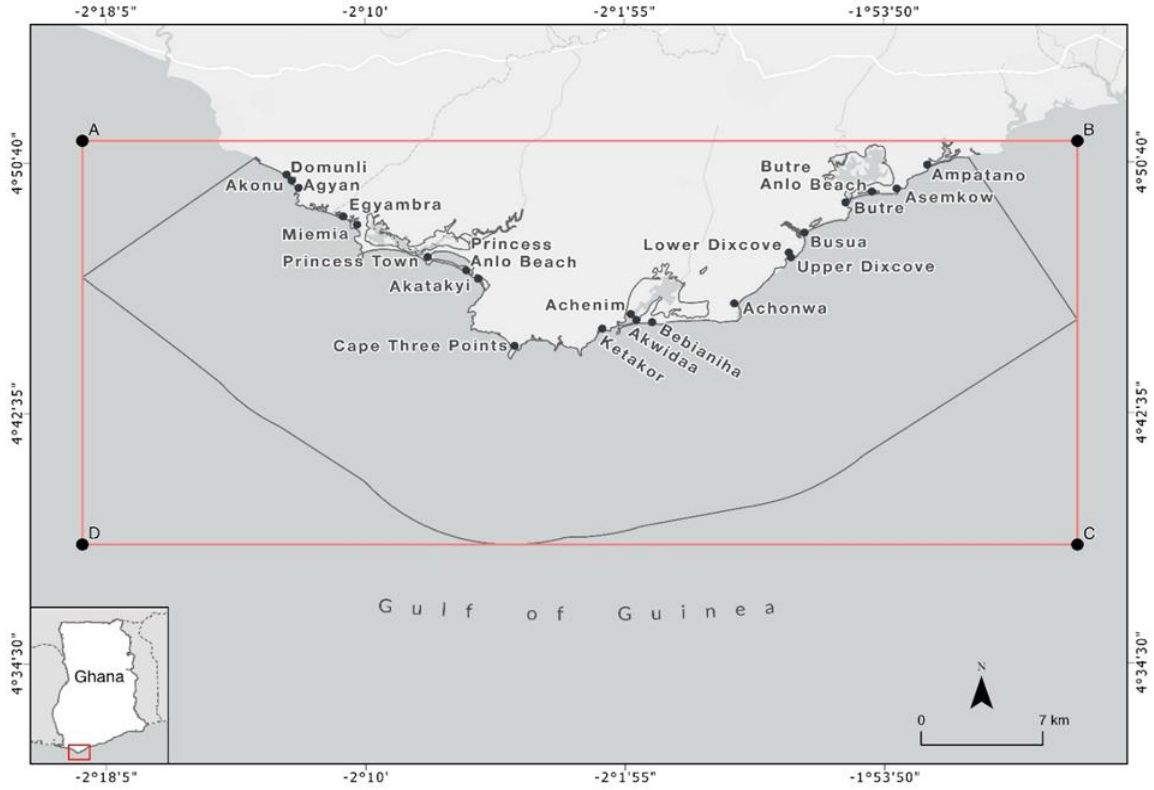

Figure 4: Boundaries of the Greater Cape Three Points MPA

1.5 Management Plan Framework

An MPA management plan provides a formal strategy for ensuring effective conservation and sustainable management of an MPA. The management plan is central to the success of any MPA, as it provides the formal mechanism through which the site's objectives, priorities and management strategies are defined. A robust plan sets out the conservation goals of the MPA, the actions required to achieve them, and the resources needed to support effective implementation. In addition, MPAs are more likely to achieve their intended outcomes when the management plan is supported by strong stakeholder engagement, clearly defined objectives, appropriate governance and management measures, and effective enforcement. Together, these elements create the condition necessary for long-term ecological protection and sustainable use.

A management plan framework provides the overarching structure for developing a full MPA management plan. It acts as a guiding tool that outlines the key components of the future plan and serves as a basis for consultation and engagement with relevant stakeholders and partners. In many cases, a management plan framework is treated as a preliminary or 'draft' management plan, offering enough detail to support informed

discussion while remaining flexible for refinement. This report serves as the management plan framework and will:

- Provide the technical, institutional, and procedural building blocks for a full MPA Management Plan;
- Define priority conservation targets, threats, management objectives, zoning options, and implementation mechanisms;
- Establish monitoring, evaluation, and learning systems to track MPA performance; and
- Set out clear institutional and operational arrangements for implementing the MPA once the plan is approved and formally adopted.

1.6 Baseline Information Summary

1.6.1 Ecological and biological resources and their conditions

Coastal and marine ecosystems include mangrove forests, nearshore coral assemblages, sandy nesting beaches, and offshore pelagic and demersal fish habitats. Endangered and threatened species such as nesting sea turtles.

The Cape Three Points Forest Reserve (CTPFR) covers approximately 51 km² and is Ghana's only coastal rainforest reserve. Surveys have recorded more than 27 tree species, 17 medium and large mammal species, and 45 butterfly species. Its beaches serve as nesting grounds for several species of endangered sea turtles. Both marine and terrestrial wildlife populations are experiencing declines due to human pressures.

Environmental threats include coastal erosion, accumulation of soil and sand particles in coastal waters due to poor coastal land use practices, illegal small-scale gold mining (galamsey), overfishing, destructive fishing practices, deforestation, illegal logging, and climate change impacts.

1.6.2 Cultural and heritage resources

The GCTPA is rich in cultural and heritage resources particularly for the Ahanta and Nzema people of Ghana. The area is a site for cultural tourism, attracting visitors desiring to experience the unique traditions and history of the people. Some of the cultural heritage resources popular in the area include:

- Cape Three Points Lighthouse overlooking the Atlantic Ocean
- Slave castles and Forts e.g. Fort Groß Friedrichsburg located at Princess Town and Fort Metal Cross located at Dixcove.
- Natural beauty such as pristine beaches, crystal clear waters, unique wildlife such as whales and sharks, and opportunities for adventure for bird and whale watching.

1.6.3 Physical and oceanographic features

Greater Cape Three Points has emerged as a priority candidate site due to its ecological value, importance to artisanal fisheries, and growing community support for conservation. The continental shelf within the Atlantic Ocean at the GCTPA is rich in oceanographic conditions suitable for high fish productivity and spawning grounds for various marine species. It has the suitable temperature, salinity and nutrient-rich upwelling waters, making it an ideal location for fishing and flourishing marine biodiversity.

1.6.4 Socio-economic characteristics and marine-dependent livelihoods

The dominant ethnic groups in the GCTPA are the Ahanta and Nzema, both belonging to the Akan cultural group. Local languages include Ahanta and Nzema dialects, alongside Twi and English for official communication.

Fishing is not only an economic activity but a cultural institution in all communities in the GCTPA. Rituals such as the traditional “Bora” fishing rite, taboos on fishing days, and sacred marine sites regulate resource use and reinforce social cohesion. Fishermen along the Ghanaian coast often migrate to other fishing areas both within and outside Ghana which has implications on conservation efforts, at least once a year; and most of them have little or no knowledge of the benefits of MPAs although majority will welcome it (Karakara et al., 2024). Beaches, estuaries, and particular offshore zones are often governed by customary rules overseen by chiefs and family heads.

Artisanal fishing constitutes the backbone of the local economy, supporting over 1,682 canoes and 9,000 fishers. Other livelihoods include small-scale agriculture, fish processing, plantation labour, and emerging eco-tourism services. Tourism infrastructure is limited to small guesthouses and lodges near the lighthouse, beaches, forest reserve, and villages.

Local governance is mediated through chieftaincy councils, office of the Chief fisherman, landing beach committees, women fish processors’ associations, and youth groups. These institutions influence access rights, conflict resolution, and compliance with conservation measures. Community values strongly align with healthy fish stocks and clean waters with cultural continuity, food security, and ancestral responsibility.

1.6.5 Stakeholder and user group characteristics and their interactions with the MPA.

Stakeholder organization and representation are fundamental to the successful co-management of MPAs. Approximately 60% of residents support MPA establishment, conditional on compensation such as development of road network, and provision of alternative livelihoods (Hen Mpoano / OCCP report). Perceived benefits include fish stock recovery and habitat protection, while concerns focus on restricted fishing access and enforcement fairness. The majority of residents prefer they are consulted in all management decision-making about the MPA.

1.7 Management Planning Timeline and Process Map

The planning process seeks to build ownership and acceptance by all stakeholders to aid effective implementation of the plan and management of the MPA. Particular attention will be paid to elicitation of local knowledge of local communities and fishers in the GCTPA regarding proposals for zoning the MPA.

Drafting, review, validation, approval, and adoption of the plan;

The GCTPA MPA management plan, hereafter referred to as the Management Plan will be drawn, validated and adopted in a collaborative and co-operative manner by both governmental and non-governmental partners facilitated by Hen Mpoano and led by the MPA Management Executive Committee (MEC). Upon completion of the consultation on the draft Management Plan, the TAC will be informed to help monitor its implementation. The draft plan will be subjected to approval and adoption by the Hon. Minister for Fisheries and Aquaculture. Thereafter, forwarded to the Attorney General for gazettement.

The Management Plan will be a "living" document that reflects current understanding of the fisheries resources of the GCTPA and, as such, is expected to be dynamic over time. Accordingly, the Management Plan will be reviewed biennially and improved as advancements in knowledge and management are made. However, no major departure from the stated management work plan will occur unless agreed by the relevant government and non-governmental actors led by the MEC. The public declaration of the MPA by the Honourable Minister of Fisheries and Aquaculture is expected to take place on 14th of April 2026. That will effectively be the commencement of the MPA while stakeholder engagements and socio-ecological monitoring continue. The MPA is expected to be in place on a permanent, long-term basis, barring any unforeseeable circumstances arising from a *force majeur event*. However, periodic biennial reviews will be conducted to assess performance and identify any required adjustments.

Table 1, outlines the timeline and process map for stakeholder consultations, incorporation of feedback, validation, and formal adoption and commencement of implementation of the plan.

Table 1: Process map for management planning activities and their expected commencement and completion dates

Sub-activity	Expected commencement	Expected End
Community engagements on the MPA	Ongoing	
Socio-ecological monitoring	Ongoing	
Drafting of Management Plan Framework (MPF)	2nd February 2026	5th March 2026
Validation of MPF by TAC	First week March 2026	
Finalization of MPF	Mid-March	Third week March 2026
Community engagement on development of MPA management plan	Final week in March	April 2026
Inauguration of MEC for MPA	March 2026	

Final Gazettement of MPA	March 2026	
Public declaration of MPA at Busua	14th April 2026	
Formulation of MPA implementation guidelines and rules	End March 2026	May 2026
Community engagement on MPA management plan	Ongoing	
Finalization of MPA mgt plan	May 2026	End of May 2026
MPA implementation - enforcement and surveillance	Continuous	

CHAPTER 2

2.0 Identification of Priority Targets and Threats

2.1 Biophysical assets and other values

Threat identification ensures that management interventions address specific pressures and that the MPA can achieve its conservation objectives. Sources of threats include human activities and climate change and their associated spatial and temporal dimensions (OCPP, 2026). Key biophysical assets that face threats in the GCTPA comprise rocky outcrops and reefs, benthic habitats, fish and fisheries, birds, mangroves, Cape Three Points forest reserve, marine turtles, whales and dolphins. Cultural assets comprise the forts in Princess Town and Dixcove. Approaches to assessing biophysical threats

2.1.1 Rocky outcrops and reefs

There are five main areas of rocky reefs in the GCTPA with varying depth and extent (Figure 5) which are also important for fishing activities according to local fishermen. One reef has the highest diversity and abundance of fish species. This reef 5 km offshore from the communities of Miemia, Egyambra, Agyan, Akonu and Domunli also has a diversity of habitat forming soft corals on the deeper parts of the reef. This reef appears to be unique in the region and would be a key area to conserve. The reef offshore to the SW of Miemia and east of Agyan has an area of 1km^2, the reef closer to shore from Agyan has an area of at least 1.25 km^2, the reef out from Cape Three Points covers an area of 1.25 km^2, offshore from Akwidaa there are two reefs close together each with an area of 0.5 km^2. The reef SE of Butre has an area of 0.3 km^2, but there are also more extensive reef systems closer to shore and extending past Ampatano to the east. In addition, there is a small reef coming from 35 m depth to a shallow point of 18 m located 4.5 km offshore from Achonwa. There is also another small reef 9 km offshore from Dixcove, at a depth of 36 m. This reef appears to only cover a small area ~ 200 m in length and does not rise more than 2 m from the surrounding sand area. These are the main reef systems in the GCTPA according to local fishers and are important areas for fishing activities.

There are rocky outcrops that protrude between sandy beaches, extending into the sea in certain places and forming rocky reefs. The rocky reefs are spatially linked to other marine and coastal environments by currents, river discharges and larval and adult migrations. Nonetheless empirical data regarding the ecological interconnections between the rocky reefs and the adjacent shallow and deep-sea habitats, the pelagic system and the lagoons and wetlands are scanty. The pelagic upwelling in the offshore and inshore locations is believed to have a rippling effect on the fishery of the near shore area and other adjoining habitats. Five rocky outcrops line up within the Inshore Exclusion Zone (IEZ) and span Agyan-Domunli area in the west to Pumponi-Asemkow area in the east. These rocky outcrops are reported to provide feeding grounds, spawning areas, and

habitats for small pelagic and other predatory fish species and therefore regarded as important core sites for protection (Linfield, 2024). The location and extent of the rocky outcrops identified from LEK participatory mapping are shown in blue in Figure 4 below. The publicly available GEBCO bathymetry is shown as contour lines and the areas mapped during the bathymetric mapping are overlayed in a blue-red colour gradient, with the warmer colours showing where the depth is shallowest where the reef was present. There are also capes and bays, most notably the Cape Three Points which is at the southernmost point of Ghana. The coastline is linked to rivers, estuaries, lagoons, and ecologically significant wetlands that are habitats for diverse flora and fauna (Linfield, 2024).

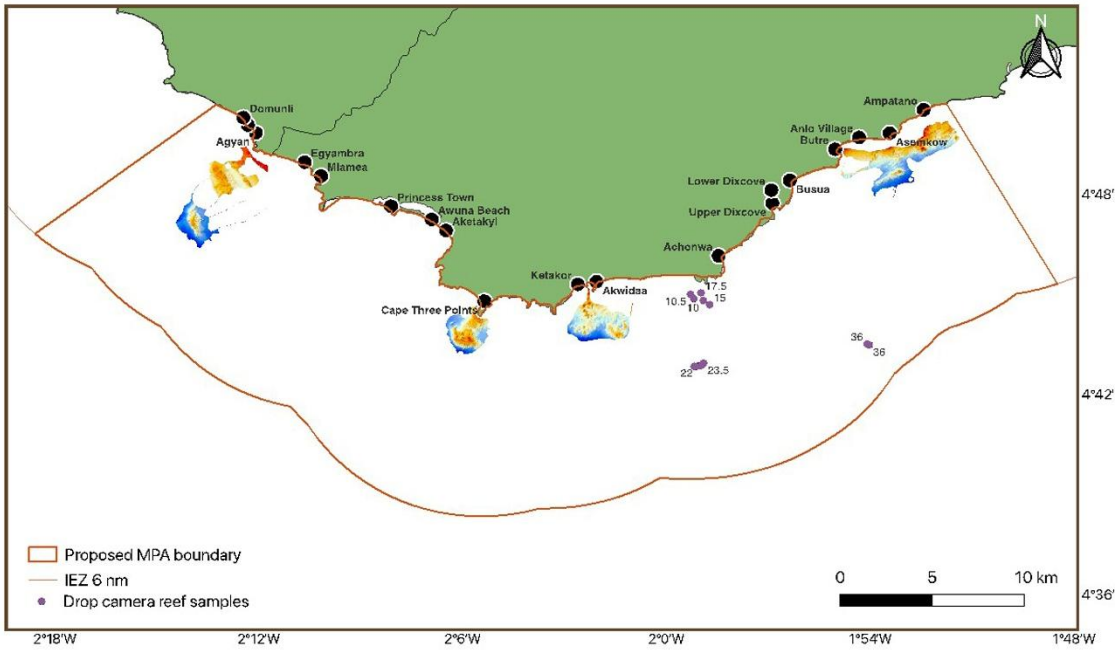

Figure 5: The location of rocky reefs in the Greater Cape Three Points area

2.1.2 Benthic habitats

There are a number of sandy beaches interspersed with rocky outcrops. Depths greater than ~20 m on these rocky reefs typically have a diverse assemblage of octocorals, such as gorgonians that colonised the benthos (Figure 6). The taxonomy of these corals is poorly known and species level identification is not possible without specimen sampling. These areas likely serve as important habitats for fish. The rocky reefs at depths of ~8-15 m are mainly boulder habitat with large cracks. There is little benthic cover with some turfing algae, small amounts of foliose algae and sponges, crustose coralline algae and in some cases cyanobacteria. Sea urchins are also present as pictured in Asemkow at 10 m depth. Crustose coralline algae, turf algae and hydroids are also observed on the same reef in Asemkow

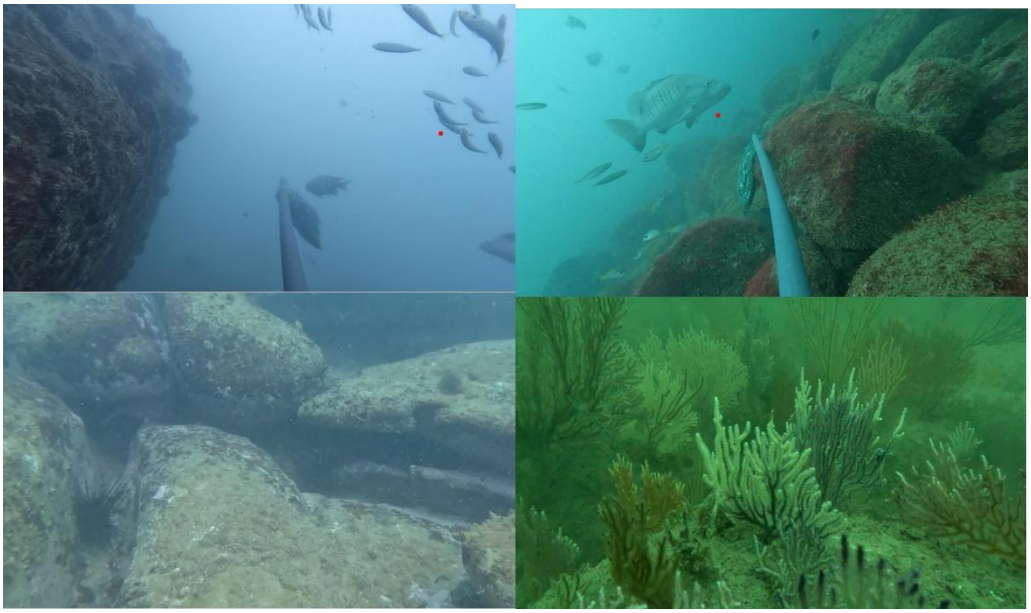

Figure 6: Benthic habitats showing rocky reefs and sea fans in the Greater Cape Three Points Area

2.1.3 Fish and fisheries

The GCTPA is important for artisanal fishing, for which it is estimated that there are a total of 1682 canoes and 9281 fishers in Ahanta West and Nzema East municipalities. The vast majority of these fishers do not fish outside of the Greater Cape Three Points Area and their fishing activities are concentrated within the stretch from Achonwa in Ahanta West Municipal to the Agyan area in the Nzema East Municipal. The most abundant pelagic species are the scads (*Decapterus* spp). These scads are difficult to identify to species level from underwater observations and could be either *Decapterus macarellus* or *Decapterus punctatus*. The next most abundant species are the small planktivorous damselfish (*Azurina multilineata*) followed by the surgeonfish (*Acanthurus monroviae*), the Golden African snapper (*Lutjanus fulgens*) and the Atlantic emperor (*Lethrinus atlanticus*). The blue runner (*Caranx crysos*), longfin crevalle jack (*Caranx fischeri*) and the West African Spanish mackerel (*Scomberomorus tritor*) are the most important commercially sought fishes found in great abundance. Sardinella, the anchovy and chub mackerel dominate the rocky outcrops. All these species are migratory and important to the fishery. Commercially targeted demersal species in families Lutjanidae, Lethrinidae and Sparidae are in great abundance. Schooling small planktivorous damselfish *Azurina multilineata* and *Chromis limbata*, and scad (*Decapterus* spp). The West African surgeonfish (*Acanthurus monroviae*) are regularly observed. The most consistently observed species are the Niger hind (*Cephalopholis nigri*) and the blackbar hogfish (*Bodianus speciosus*) (Linfield, 2023).

2.1.4 Cape Three Points Forest Reserve

The Cape Three Points Forest Reserve is located approximately 2.5 km from the country's southernmost point where dense tropical rainforest meets the Atlantic Ocean. The forest is characterized by a compact block of tall, evergreen rainforest rising gently from low-lying coastal plains, intersected by small streams and bordered by mangroves, wetlands, and surrounding farming communities. The forest has a closed, humid canopy with towering hardwood trees, dense undergrowth, and rich birdlife, while adjacent wetlands and mangroves form important ecological corridors linking the forest to rivers and estuaries. Historically, intact secondary forests and wetlands buffered the reserve, allowing wildlife to move freely across the landscape. However, increasing human pressure has significantly altered this setting. Large areas of the former buffer zone have been converted to rubber and oil palm plantations, while illegal logging, hunting, and illegal mining (galamsey) have degraded habitats, polluted waterways, and fragmented ecosystems. The Cape Three Points Forest Reserve is home to globally significant and highly threatened species, making it a priority for enhanced protection. Among its most important flora are *Talbotiella gentii* (Ghana Ironwood) and *Pericopsis elata* (Afrormosia), both endangered and potentially surviving in only a few remaining habitats within Ghana. The forest also supports Critically Endangered and Endangered primates, including the Roloway monkey (*Cercopithecus roloway*), white-thighed colobus (*Colobus vellerosus*) and the white-naped mangabey (*Cercocebus lunulatus)* all of which are highly sensitive to habitat loss and degradation. Additionally, the Western Grey Parrot (*Psittacus erithacus*) and white-bellied pangolin (*Phataginus tricuspis*), endangered species threatened by trapping and forest disturbance, occur here. These species serve as compelling flagship species, highlighting the forest's irreplaceable biodiversity value.

2.1.5 Birds

More than 168 species of birds from 38 avian families have been identified and recorded for the Cape Three Points Forest Reserve and surrounding areas. The species recorded include eight globally threatened species in the Vulnerable, Near Threatened and Data Deficient categories on the IUCN Red List of Threatened species. Also included are 10 wholly protected species under Schedule I of the Wildlife Conservation Regulation as well as 123 species whose global distribution is limited to the Guinea-Congo Forest of West and Central Africa and six Upper Guinea Endemics.

2.1.6 Mangroves

Mangroves are located in the low-lying areas where the tidal influence of the ocean reaches. Undisturbed mangrove stands can be found in Princess Town, Princess Anlo Village, Butre Anlo Village, Miemia and Butre. Mangrove extent covers approximately 1,309 hectares (Figure 7) over the GCTPA. There are also degraded mangrove areas found in Akwidae, Butre Anlo Village and Bibianiha. There are three types of mangroves in the area, namely, *Avicennia germinans* (Black Mangrove); *Laguncularia racemosa* (White Mangrove); *Rhizophora racemosa* (Red Mangrove) and *R. harrisonii* (Red Mangrove).

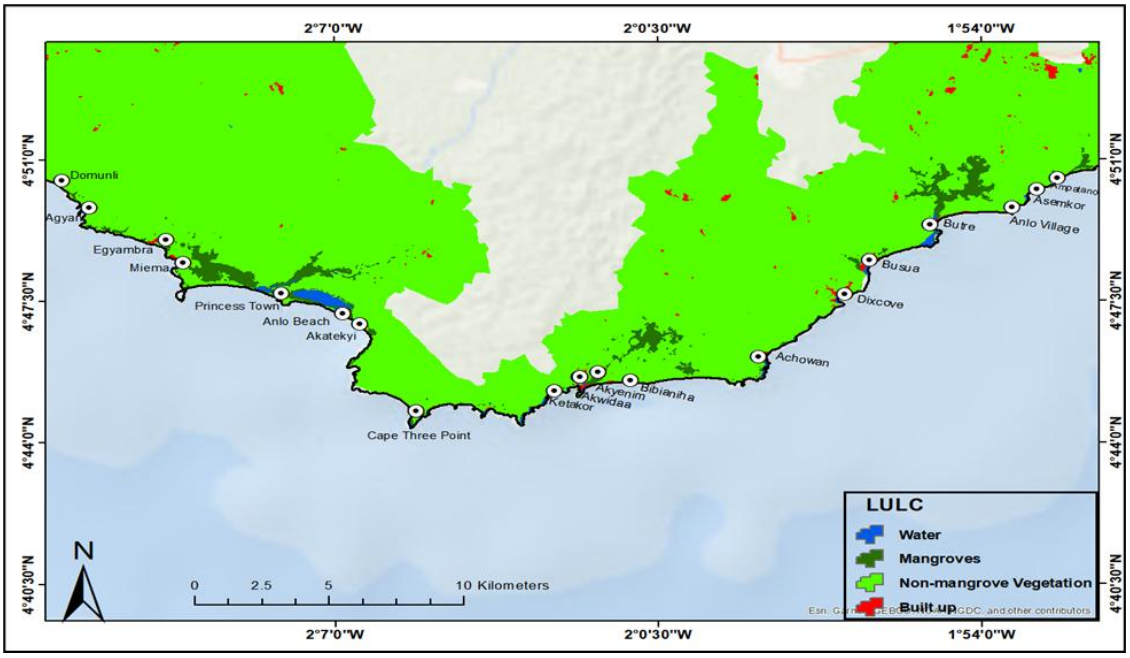

Figure 7: Coverage and distribution of mangroves in the Greater Cape Three Points Area

2.1.7 Other key biodiversity

Reef benthic biodiversity including foliose algae and sponges, crustose coralline algae and in some cases cyanobacteria, and turfing reef algae are found in the area. Scleractinian corals such as encrusting hard corals, *Schizoculina fissipara* are in low diversity. Marine turtles such as green turtle (*Chelonia mydas*), common octopus (*Octopus vulgaris*) and slipper lobsters (*Scyllarides herklotsii*), whales including Humpback whales and dolphins are also present in the GCTPA. The offshore waters from Cape Three Points area have been identified as calving areas for whales and dolphins (EPA, 2021). Although limited information exists on the distribution and abundance of whales for the inshore waters (< 6nm within the IEZ), the offshore waters support a diverse assemblage of cetaceans, predominantly in shelf and slope waters (<1000 m depth contour). These species are occasionally caught as bycatch from artisanal fisheries.

2.1.8 Cultural and heritage assets

There are forts which serve as tourist destination sites and have been designated as UNESCO World Heritage sites (Figure 8). These include forts Groß Friedrichsburg located at Princess Town and Metal Cross located at Dixcove (Figure 9). The numbers of tourism, recreation facilities and seaside residences have also increased in the last decade.

Figure 8:: Fort Groß Friedrichsburg

Figure 9: Fort Metal Cross

2.2 Socio-economic values

The GCTPA supports a range of important social and economic uses that underpin the livelihoods and wellbeing of inhabitants in the area.

2.2.1 Fishing

The ocean serves as the primary source of food and livelihood for local inhabitants, who are predominantly artisanal fishers. Fishers in the participating communities are largely indigenous, mainly from the Ahanta, Nzema, and Fante ethnic groups. In addition, two communities, Princess Awona Beach and Butre Anlo Village, are primarily composed of Ewe migrants. There are variations in fishing gear, practices, and customary norms across the communities. Cultural norms and traditional practices play an important role in regulating access to lagoon and mangrove resources, particularly in the Ehunli Lagoon and the Egyambra Estuary. Access to marine resources is also governed by traditional fishing holidays, which differ by community and are observed on either Tuesdays, Wednesdays, or Thursdays. The majority of fishers within the participating communities conduct their fishing activities within the IEZ, extending up to six nautical miles (6 nm). Fishers typically operate within their local fishing grounds but may travel to other areas along Ghana's coastline in response to reports of abundant catches in nearby or distant communities. It is noteworthy that the Greater Cape Three Points Area also attracts a significant number of fishers from other parts of the country, as the fishery operates under an open-access regime. Fishing activities occur throughout the year. Table 2, presents the local, common, and scientific names of the dominant fish species, as well as the periods in a year during which they are most frequently landed.

Table 2: Dominant fish species and periods landed in the Greater Cape Three Points Area

Local name	English Name	Scientific Name	Months harvested
'Eban'	Round sardinella	*Sardinella aurita*	*July-August*
Amoni	European Achovy	*Engraulis encrasiocolus*	*August -September*
Eban	Madeiran sardinella	*Sardinella maderensis*	
Konsuano	Flat needlefish	*Ablennes hians*	
Osese/ase	Ballyhoo halfbeak	*Hemiramphus brasiliensis*	*September-October*
Po-anoma/ntetere	Atlantic flyingfish,	*Cheilopogon melanurus*	*November- January*
Epae or kotolo	Crevalle jack	*Caranx hippos*	*July- August*
Ekan/Ekanye	*Cassava croaker*	*Pseudotolithus senegalensis*	
Daa or Edaya/Ela	Chub mackerel	*Scomber colias*	*January – April*
Pokupoku	Bullet tuna,	*Auxis rochei*	*January-March*
Safor/safol	West African Spanish Mackerel	*Scomberomorus tritor*	*January-April*
edoe/eloe	Guachanche barracuda,	*Sphyraena guachancho*	*January- April*
Sukuei/sukwe	Lesser African threadfin,	*Galeoides decadactylus*	*November-December*

Wawanyan	Largehead hairtail,	*Trichiurus lepturus*	*August-September*
Kanfena	West African ilisha	*Ilisha africana*	*September-October*
Tantre/ kudike	Daisy stingray	*Dasyatis margarita*	*Rainy seasons*
Gogorow	Blue Shark	*Prionace glauca*	*September*
Ekyinekyin	Atlantic Sail Fish	*Istiophorus albicans*	
Solokyi	Grouper	*Epinephelus aeneus*	January-March

The use of fishing gear types varies between communities in the GCTPA (Table 3). While some communities use multiple gears, others deploy only one type of fishing gear. For instance, fishers from Achonwa and Egyambra use hook and line only for fishing while those from Butre Anlo Village and Awuna Beach deploy beach seine. Though the entire GCTPA serves as the fishing ground for all the gear types, hook and line is mainly deployed around rocky areas, rocky outcrops, and islands.

Table 3: Types of fishing gears by community in the Greater Cape Three Points Area

Community	Hook and line (Asosow)	Beach seine (Twuwii)	Purse Seine (Watsa)	Set gillnet (Tenga)	Sika ye Abrantie	Sieve	Drift gillnet (Mpateku)	Bottom trawl
Egyambra	X							
Miamea	X	X	X	X	X			X
Princes Town	X	X						X
Awona Beach		X						
Ketekor	X			X	X	X		X
Achonwa	X							X
Akwidaa	X	X	X	X	X		X	X
Butre			X	X	X	X	X	X
Butre Anlo Village		X						
Asemkow	X	X	X	X	X	X		X
Akatekyie	X	X	X	X			X	X
Lower Dixcove	X		X	X	X		X	X
Upper Dixcove	X		X	X	X		X	X
Busua		X		X	X		X	X
Cape three points	X				X	X		X

2.2.2 Tourism and recreation

The key tourism sites within the Greater Cape Three Points Area (GCTPA) are located around the Butre Estuary, Busua, the coastal stretch from Dixcove to Cape Three Points, and Princes Town. Butre, Busua, and Dixcove have been identified as priority tourism areas, with a growing concentration of low-capital, eco-tourism-oriented resorts along the coastline from Busua to Cape Three Points. There is also significant potential to develop a forest park at Cape Three Points, comparable in concept to Kakum National Park, leveraging the area's rich biodiversity and scenic landscapes. The GCTPA is endowed with attractive sandy beaches, diverse coastal landscapes, traditional fishing settlements, wildlife habitats, and historic and cultural sites. The area offers strong potential for activities such as surfing, canoe paddling, turtle and whale watching, and hiking. These natural and cultural assets position the GCTPA as one of Ghana's most promising leisure and eco-tourism destinations. However, much of this tourism potential remains underdeveloped and requires strategic planning, infrastructure investment, and sustainable management to be fully realized.

2.3 Pressures, drivers and threats in the Greater Cape Three Points MPA

The high and increasing population and demands for coastal resources has increased the pressure on natural resources along the coast of Ghana. A significant amount of these pressures are human-driven processes, events and activities that may impact negatively on GCTPA biodiversity assets and values (OCPP,2026). Illegal unreported and unregulated (IUU) fishing is pervasive and contributing highly to overfishing in Ghana. Fishing with light, chemicals and explosives such as dynamite, small mesh-sized fishing nets, and increasing numbers and sizes of canoes are major threats to the conservation of aquatic resources and ecosystems. Although not widespread, incidents of blast fishing and chemical fishing have been reported. Enforcement is undertaken by the Fisheries Commission, district authorities, and marine police units, but logistical and financial constraints limit effectiveness. Alternative livelihoods and savings from livelihood activities are minimal, and many do not belong to any self-help group. These are real threats to the operationalization of MPA in the area. Tourism has both positive impacts (employment, income, awareness) and negative impacts (waste, disturbance of nesting turtles, cultural commodification). Several NGOs are piloting community-based responsible tourism models that combine conservation education, turtle monitoring, and cultural tours to minimize ecological damage while expanding local benefits.

Galamsey activities along the Nyan River and adjacent coastal zones have introduced mercury contamination and heavy sediment loads into estuarine and mangrove systems, degrading water quality and fish habitats. These impacts have been linked to observable declines in aquatic life. Illegal logging contributing to deforestation, farming encroachment, wildlife poaching, and charcoal production threaten the integrity of the forest reserve and associated wetlands. Loss of forest cover reduces ecological connectivity between terrestrial and marine systems. Climate change and its impacts are

increasingly threatening the ability of marine protected areas (MPA) to achieve their conservation goals and desired outcomes. While integration of climate change into planning is critical, a recent global analysis found that relatively few MPAs have incorporated climate change considerations into formal management planning processes (Cannizzo et al., 2025). Integrating climate change in MPA design and planning is critical because climate change erodes the validity of the environmental stationarity assumption. The efficacy of "traditional" MPA management through the reduction of local and regional anthropogenic pressures may no longer be sufficient to achieve local, national, and global conservation goals. Some pressures can be mitigated by management actions. Some specific pressures on the GCTP MPA are outlined below.

2.3.1 Overfishing

A major threat for the GCTPA MPA is overfishing driven by illegal, unreported and unregulated (IUU) fishing. The use of non-selective fishing gears with small mesh sizes, fishing with chemicals, other obnoxious substances and explosives have not only devastating effects on fishery resources such as increasing vulnerability to fish life stages but the tendency of degrading and disrupting marine and estuarine ecosystems. Fishers indicate the increasing use of illegal gear and capture of endangered species such as sea turtles and dolphins is driven by observed continuous decline in catch rate and fishing profits which is worsening their livelihoods. Therefore, efforts to conserve fish stocks by protecting the area and forbidding seasonal and area closure to destructive fishing and other activities will help to sustain their livelihoods.

2.3.2 Mangrove deforestation

The coastal area of Ghana is endowed with mangroves of small, medium and large expanses. According to Nunoo & Agyekumhene (2014) the current mangrove cover of Ghana is estimated in this current study to be around 72.4 km^2 with total tree numbers estimated as over 18 million, distributed in all four regions along Ghana's coast. The Western Region has the second highest abundance of mangrove in terms of area of coverage; several naturally occurring stands are in the GCTPA and others are found in the Amanzule Wetlands (Nunoo, 2018). Mangroves play an important role in the reproduction and recruitment of fish and other important marine organisms. Due to high development rates along the coast, most mangrove fringes are relatively small in area and distribution and rarely develop beyond a thicket stage. Mangroves are used extensively for fuel wood to smoke fish and for construction purposes. The bark of mangrove species is used for tanning fishing nets. Mangroves play several important roles for coastal communities in Ghana. They provide employment and income for coastal communities who often farm mangrove for sale. It provides a source of energy in the form of fuel wood for domestic use or smoking fish. Mangroves on the beach provide a place for fishermen to rest and mend their nets. Loss of mangrove areas have also been caused by tourism development, sand winning, solid waste disposal, reclamation of lands for agriculture, urbanization and salt ponds (FAO, 2005; Mensah, 2013). Threats to matured mangrove forest identified in the coastal areas of Ghana include cutting mangrove for sale, cutting mangrove for fuel wood to smoke fish, conversion of mangrove areas for salt mining, agriculture and settlements, wildfires, pollution in the form of refuse

dumping and 'galamsey' mining, and natural death from disease. It is worth noting that, degraded mangrove sites in the Greater Amanzule Wetlands have been restored with over **2 million** mangrove saplings (www.https://henmpoano.org/).

2.3.3 Marine habitat destruction

Illegal fishing practices such as the use of explosives is destructive to rocky reefs. The use of towing gear also destroys sensitive fisheries habitats within the benthic environments. Illegal mining; dumping of waste in coastal areas and wetlands; and excessive cutting of mangroves contribute to habitat degradation.

2.3.4 Marine debris and land-based sources of pollution

Marine litter has been found to be widespread with plastics being the predominant constituents (60 to 80%), among others, such as glass, metals and discarded fishing gears. Marine litter is an issue of global concern due to its adverse economic, aesthetic, human health and ecological impacts. Marine debris on the beaches of the MPA are dominated by plastic waste from land-based sources. Nonetheless, studies on marine debris are lacking for the western coast. On the other hand, pollutants from illegal small-scale mining activities in the Cape Three Points forest are washed into nearshore marine environments including the MPA. This forest has the potential for development as a visitor attraction, but is currently being degraded. Pollution from direct dumping of waste has also resulted in the degradation of mangrove vegetation in the area. These are impacting negatively on marine life and coastal tourism.

2.3.5 Climate change and accelerating coastal erosion

Due to rising sea level in recent decades, most barrier beaches in Ghana are retreating at a rate of about 1m per year and in the Western region, are estimated to be retreating at 2m per year on the average. Erosion, sea level rise, and sand winning from the beach have resulted in land loss and the inland movement of the shoreline. Sections of the shoreline of the GCTPA are noted to have eroded considerably over the past 50 years, causing the disappearance of buildings, farm lands and other properties. This phenomenon still continues due to high sea wave energy and sea level rise, exacerbated by climate change. In Busua for example, the entire shoreline experienced massive erosion in 2007 due to heavy seas and storms, which exposed flaws in the sea defense mechanism and destroyed properties of the beach resorts and hotels. In other communities, settlements and fish landing sites have been destroyed. In Akwidaa, the entire settlement at the Old Town has been under threat from coastal erosion and sea level rise for many years. Twice a year the community is flooded for several weeks by sea water destroying properties and obstructing economic activities. Similar incidences of coastal flooding are noted in all the coastal communities with varying impacts based on the elevations above sea level.

2.3.6 Oil and gas activities

Generally, oil and gas activities in the marine environment occur away from shallow-water nearshore environments. Nonetheless, oil and gas activities are noted to consume large amounts of chemicals, from drilling to production. Chemical discharges, drill cuttings, tank cleaning, oil spills, acid works and debris from subsurface works continue to pressure the quality of the marine environment. As the exploration and production activities intensify, more pollutants would be released into this environment, contributing to the pollution load and reducing the quality of the marine environment.

CHAPTER 3

3.0 Management objectives and strategies

3.1 Strategic vision

GCTPA critical fisheries habitats and biodiversity protected to ensure ecosystem functioning and promote long term ecosystem resilience with enhanced and sustainable fisheries.

Goal

To protect, conserve, and restore the fishery and aquatic resources within the GCTPA to sustain fishery livelihoods, biodiversity, and contribute to the national economy.

Management objectives

- To enhance key biodiversity and fish stocks, by increasing the abundance and average size of key species.
- To reduce pressures on marine habitats, by minimizing destructive activities, curbing IUU fishing, preventing overfishing and supporting recovery of fish populations
- To strengthen local and national economies by promoting sustainable economic activities and developing alternative livelihood options that support fishers, local communities, and wider national interests.
- To reduce coastal vulnerability through integrated shoreline management that mitigates risks to people, property and infrastructure from coastal hazards and climate change
- To increase understanding of the benefits and functioning of the MPA among stakeholders through education, research and application of local ecological knowledge.

Guiding Principles

The above goal and objectives are underpinned by the following guiding principles among others:

- **Protection of critical ecosystems**: safeguard essential habitats and species, rebuild fisheries, and generate scientific knowledge to address current and emerging threats to the ecosystems
- **Alignment with policy and law:** Operate within existing international and national policies, legislation, and regulatory frameworks, while supporting their strengthening and effective enforcement.
- **Evidence-based site selection:** Ensure that the GCTPA is designated using ecological, socio-economic, educational/research and feasibility criteria informed by the best available scientific and social evidence.
- **Ecosystem connectivity and diversity:** Maintain and enhance ecological connectivity, species linkages, and habitat heterogeneity, while allowing for appropriate sustainable uses, such as ecotourism, and prohibiting harmful activities, such as blasting.
- **Inclusive and participatory governance:** Work collaboratively with all relevant stakeholders, including local communities, government agencies, institutions, and other actors, through transparent partnerships that build broad public support.
- **Adaptive, co-management approach**: Implement dynamic co-management grounded in research, monitoring, evaluation and continued learning, supported by sustainable financing mechanisms.

3.2 Strategies to address threats, including enforcement, compliance, livelihood support, education, and ecosystem protection.

Effective management of the GCTP MPA requires coordinated actions to address the key threats affecting marine ecosystems and coastal livelihoods. These threats include unsustainable fishing practices, habitat degradation, pollution, and climate-related impacts. The strategies outlined in this section provide broad approaches to guide management actions, focusing on enforcement and compliance, community participation, livelihood support, ecosystem protection, and awareness creation. Together, these strategies aim to promote sustainable resource use, strengthen stewardship among stakeholders, and enhance the resilience of marine and coastal ecosystems.

Strengthening Enforcement and Surveillance

- Establish coordinated MPA enforcement and surveillance systems involving the Fisheries Commission, Marine Police, Ghana Navy, and local community enforcement groups.
- Develop and implement community-based monitoring and reporting mechanisms to support detection of illegal fishing and other prohibited activities.
- Introduce clear sanctions and prosecution procedures for violations in accordance with the Fisheries Act (Act 1146).
- Deploy appropriate surveillance technologies (e.g., patrol boats, GPS tracking, community reporting hotlines) to improve monitoring coverage.
- Conduct regular joint patrols and enforcement operations within the MPA zones.

Improving Compliance and Co-management

- Promote participatory co-management arrangements involving fishers, traditional authorities, women processors, and local institutions in decision-making.
- Develop and disseminate clear operational rules and zoning regulations for the MPA.
- Strengthen the role of Community Management Groups (CMGs) and Cluster Co-management Committees in supporting compliance.
- Integrate customary governance systems and traditional fishing norms into MPA management where appropriate.
- Establish transparent grievance and conflict-resolution mechanisms to address disputes among resource users.

Supporting Sustainable Livelihoods and Economic Diversification

- Promote alternative and supplementary livelihood opportunities to reduce dependence on fishing.
- Support value addition in fisheries, including improved fish processing, storage, and marketing.
- Encourage development of community-based ecotourism enterprises linked to the MPA's biodiversity and cultural heritage assets.
- Facilitate access to skills training, microfinance, and enterprise development programs for coastal households.
- Strengthen women's participation in sustainable livelihood initiatives, particularly in fish processing and small-scale enterprises.

Ecosystem and Habitat Protection

- Protect and restore critical marine habitats including rocky reefs, mangroves, estuaries, and turtle nesting beaches.
- Implement mangrove conservation and restoration programs in degraded coastal areas.
- Enforce strict regulations against destructive fishing practices, including blast fishing, chemical fishing, and the use of illegal gear.
- Promote ecosystem-based fisheries management that maintains ecological connectivity between marine and coastal habitats.
- Establish core no-take zones and buffer areas to allow recovery of fish populations and habitats.

Pollution Prevention and Waste Management

- Implement programmes to reduce marine litter and plastic pollution in coastal and marine environments.
- Promote community-based waste management systems in coastal settlements.
- Strengthen monitoring and regulation of land-based pollution sources, including mining-related sediment and chemical discharge.
- Encourage adoption of best environmental practices by tourism operators and coastal businesses.

Climate Change Adaptation and Coastal Resilience

- Integrate climate change considerations into MPA planning and management decisions.
- Promote nature-based coastal protection approaches, including mangrove restoration and dune stabilization.
- Support community-level climate adaptation planning to reduce vulnerability to coastal erosion, flooding, and sea level rise.
- Monitor climate-sensitive ecological indicators to inform adaptive management of the MPA.

Education, Awareness, and Capacity Building

- Develop sustained public education and awareness programs on the benefits of the MPA.
- Promote marine conservation education in schools and coastal communities.
- Strengthen technical and institutional capacity of government agencies and community groups involved in MPA management.
- Support knowledge exchange between scientists, fishers, and local knowledge holders to inform adaptive management.
- Encourage citizen science and participatory monitoring initiatives involving community members.

Research, Monitoring, and Adaptive Management

- Support scientific research and ecological monitoring to improve understanding of marine ecosystems and fisheries dynamics.
- Establish partnerships with universities and research institutions to support data collection and analysis.
- Use monitoring results to periodically review management strategies and zoning arrangements.
- Promote integration of local ecological knowledge with scientific research in management decisions.

Sustainable Financing and Partnerships

- Develop sustainable financing mechanisms including user fees, tourism levies, and donor support.
- Foster public–private partnerships to support conservation and livelihood initiatives.
- Encourage investment in sustainable tourism and conservation-compatible enterprises within the MPA area.

CHAPTER 4

4.0 Zoning and Multiple Use Framework

In the designing and spatial management of MPAs, it is important to incorporate ecological and social connectivity principles both within and without ecosystems. Success of these arrangements and therefore the MPA depend heavily on active enforcement and compliance by communities and users of the resources.

MPA implementation arrangements defined by the MPA guide include range of four levels of protection:

- **Full 'no-take-zones' (NTZ)** that prohibit all extractive or destructive activities;
- **Highly protected** where only light extractive activities with low total impact are allowed;
- **Lightly protected** in which only small-scale low impact activities are allowed;
- **Minimally protected or moderate or multiple-use' areas (MUA)** where there are some limited restrictions that encourage moderate impact activities to ensure sustainable use.

MPAs can also vary depending on how long the area will be protected and this will have a significant impact on their overall success. They can be permanent (indefinite protection), conditional (periodic review of continuity), or temporary (meet short term conservation goals). The level of protection can also vary throughout the year; year-round or seasonal or rotating MPA.

For ecological connectivity and ease of implementation of the GCTP MPA, the protected area should be **divided into three connected zones:**

- **An inner core zone (2,564 ha)** is declared a "**no take**", where there is no large-scale commercial fishing, and all extractive use and destructive activities are prohibited. It could be two or more locations that are connected to ensure improved gains. Only continuous socio-ecological research and monitoring is allowed here.
- **A middle zone (7,675 ha)** is designated as a **buffer zone**, where fishing by traditional passive methods is allowed for some periods in the year but surround / towing/ trawl / encircling gear is forbidden. Other resource users such as tourists and researchers will pay **User fees** to access this area.
- **The third zone is an outer zone (1,297 ha)** in which **multiple resource use** complementary to the socio-ecological system of the GCTP MPA is allowed. This will include multiple nearshore areas.

For each of the three zones, regulations are provided and measures to be taken in case of violations specified. Ecological and socio-ecological monitoring will be sustained in all the specified zones and around all communities abutting each of the three zones.

Permitted and regulated activities (Buffer zone and no-take zone)

- Tourism (guided)
- Recreational activities such as swimming, surfing, sun-bathing, guided hiking
- Transportation
- Enforcement and surveillance activities
- Socio-ecological monitoring or research.

Prohibited activities (Outer zone, buffer zone and no-take zone)

- Other extractive and destructive use aside of fishing
- Large scale commercial fishing including towing / bottom trawl or surround gear such as *Watsa*, Beach seine, Drift gill net, '*Sika ye abrantie'*
- Waste disposal by vessels and communities in both coastal and nearshore areas
- Mining, drilling, dredging or oil and gas exploration and development
- Logging of mangroves
- Gravel, pebble, and sand winning.

Low-impact multiple and conditional use (Outer zone and buffer zone)

- Hook and line fishing
- Tourism (guided)
- Recreational activities such as swimming, surfing, sun-bathing, guided hiking
- Hotels and beach resorts
- Transportation
- Swimming and other recreational activities
- Socio-ecological monitoring or research.

CHAPTER 5

5.0 Monitoring, Evaluation, and Learning Framework

MPA management encompasses a diverse array of topics, defined broadly by specific management practices such as protection of species and habitat; and management of human activities (regulation and prohibition of) to mitigate the impact of specific human activities on the marine ecosystem. At the core of it is the assurance of compliance by all potential users; and this can only be ascertained with the establishment of a robust monitoring, evaluation and learning assessment mechanism. Commonly referenced tools for MPA assessment include the IUCN World Commission on Protected Areas (WCPA) Framework (Hockings et al., 2000, 2006), the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) (Ervin, 2003). Active involvement of government agencies, local communities, marginalized groups, and fisher associations in monitoring

MPAs promotes inclusive cross-agency coordination of monitoring, enhances community ownership and stewardship, increases compliance, enhances data quality through participatory monitoring, provides vital input though real time feedback and local insights, and reduces conflict through co-management approaches (OCPP, 2026).

Management effectiveness (ME) evaluation, as defined by the IUCN, assesses how well a protected area is managed, focusing on design, management system appropriateness, and objective delivery across the six stages of the management cycle (context, planning, inputs, processes, outputs, and outcomes) (Hockings et al., 2006). The ME evaluation process is often designed to encompass the considerations of national and local managers and the objectives of the MPA based on the guidelines for evaluating the ME of MPAs issued by the IUCN (Pomeroy et al., 2004). A set of indicators is normally selected from three perspectives often considered in MPA ME evaluation (Pomeroy et al., 2005; Tupper et al., 2015): biophysical, socioeconomic, and governance factors.

Using a set of indicators is simpler to implement and will be considered for the monitoring and management of this MPA. To this end, Pomeroy *et al.* (2005) composite indicator-based approach of evaluating biophysical, socioeconomic, and governance dimensions, and management is recommended. It is noteworthy that not all the indicators equally measure success, so there is need to provide weighting in alignment with objectives for the MPA.

5.1 Monitoring Indicators

5.1.1 Ecological (Biophysical) indicators

Some biophysical indicators include biomass/number of fish caught, abundance of fish in the MPA as indicated by CPUE, quality or health of habitats as indicated by water quality parameters, level of illegal fishing activities or poaching in the MPA, and extent, likelihood and frequency of pressures and threats.

5.1.2 Socio-economic indicators

Some indicators are: average pre- and post- MPA income levels from fishing and other livelihood options, level of employment, movement of fishers among fishing communities (in and out), availability of alternative livelihoods, health and sanitation, housing characteristics e.g. availability of electricity and potable water, and availability of social amenities and recreation.

5.1.3 Governance and management effectiveness indicators (e.g., enforcement, participation, institutional capacity);

MPAs socio-ecological effectiveness depends on a number of management and governance elements, among which stakeholder engagement and community support play key roles. It is key to assess how local communities respond to such initiatives and

identify the set of contextual factors, institutional, local and individual, potentially affecting these responses.

Key governance indicators are: strength and implementation of legislation, institutional capacity of stakeholders, availability of finance, level of awareness and acceptance of MPA, level of participation of youth and women of SSF in decision-making, effectiveness of planning, management efficiency, enforcement of MPA rules, and level of achievement of set objectives. Others are support of SSF for the MPA, level of conflict between SSF and other users of the MPA, and relationship between MPA management committee and SSF (Franco et al., 2020).

5.1.4 Baseline data requirements;

- MPA geospatial and attribute data (e.g., location, shape/boundaries, age, area, fishing regulations, and user rules and guidelines)
- Ecological data - water quality including physico-chemical parameters, flora and fauna abundance and trends, soil quality, etc. collected by standardised protocols
- Socio-economic and cultural conditions
- State of acceptance of MPA concept
- Human and technical capacity/Level of involvement of state and local stakeholders
- Education, awareness, and training
- Funding availability.

5.2 Socio-ecological Monitoring framework

The monitoring framework in Table 4 outlines the key ecological indicators, methods, and monitoring frequency that will be used to assess ecosystem health and track the effectiveness of management interventions in the Marine Protected Area.

Table 4 Ecological monitoring framework for the Greater Cape Three Points MPA

Habitat / Component	Monitoring Indicators	Monitoring Method / Tool	Monitoring Frequency
Water Quality (Physical & Chemical Parameters)	Dissolved Oxygen (DO), temperature, nutrients, salinity, turbidity, total dissolved solids (TDS), pH, conductivity	Multiparameter water quality meter, colorimeter	Monthly
Bathymetry	Seafloor topography and depth	Sonar receiver / bathymetric survey equipment	Annually

Benthic Ecosystems	Ecosystem types, fish abundance and distribution	Baited Remote Underwater Video (BRUV) surveys	Quarterly
Pelagic Fish	Fish abundance and distribution	Baited Remote Underwater Video (BRUV) surveys	Quarterly
Pelagic and Demersal Fish	Morphometric data, species richness, diversity, and abundance	Fish landing and catch monitoring	Monthly
Sea Turtles	Species diversity and nesting/shore visitation frequency	Beach patrols and direct observation	Seasonal / Annually
Cetaceans	Species diversity and occurrence	At-sea visual observations and sighting records	Monthly
Mangroves	Forest structure and ecosystem health	Vegetation plots measuring tree density (Di), basal area (BA), importance value (IV), diameter at breast height (DBH), litter traps	Quarterly
Crabs	Presence and population density	Observation and counting of crab burrows	Quarterly / Semi-annually

Socio-economic monitoring will be conducted to assess how the Marine Protected Area affects local livelihoods, resource use patterns, cultural practices, and community perceptions of management effectiveness. The indicators and methods outlined in Table 5 will guide periodic data collection and evaluation.

Table 5 Socio-economic monitoring framework for the Greater Cape Three Points MPA

Monitoring Theme	Indicators	Method	Tools / Instruments	Frequency of Data Collection
Marine Resource Use	Number of males and females engaged in fishing or harvesting resources from the MPA	Household survey; FGDs	Questionnaire; interview guide	Annually
	Types of finfish and shellfish important for household	Household survey; FGDs	Questionnaire; interview guide	Annually

	consumption and trade; frequency of resource exploitation			
Livelihood Impacts and Opportunities	Perceived impacts of the MPA on livelihoods	Household survey; FGDs	Questionnaire; interview guide	Every 2 years
	Perceived impacts on community well-being	Household survey; FGDs	Questionnaire; interview guide	Every 2 years
	Community-proposed solutions to livelihood and resource threats	Household survey; FGDs	Questionnaire; interview guide	Every 2–3 years
Socio-cultural Values	Cultural values and practices related to marine resource use (use/non-use)	Focus Group Discussions; Key Informant Interviews	Interview guide	Every 3–5 years
Governance and Management Effectiveness	Perceived benefits of the MPA to the community	FGDs; Key Informant Interviews	Interview guide	Every 2 years
	Presence of community rules and regulations governing marine resource use	FGDs; Key Informant Interviews	Interview guide	Every 2–3 years
	Level of enforcement of rules and regulations	FGDs; Key Informant Interviews	Interview guide	Annually
	Perceived effectiveness of MPA management	FGDs; Key Informant Interviews	Interview guide	Every 2 years

CHAPTER 6

6.0 Governance Arrangements and Implementation Mechanisms

A mix of adaptive management and co-management arrangements will be considered for management of the GCTP-MPA. Adaptive management (defined as: setting objectives, assessing threats, incorporating threat considerations into management design and actions, monitoring threats and change, and updating strategies when changes occur) allows for incorporation of environmental change such as climate change, and social change. Co-management is broadly used to describe governance systems that combine decentralized decision-making with the sharing of power and responsibility between governments and local resource users (Singleton, 1997). Furthermore, implementation mechanisms will ensure effective enforcement and voluntary compliance, adequate grievance redress mechanisms as well sustainable finance and resource mobilization strategies.

6.1.1 Governance and decision-making structures

This aligns with the co-management policy for the fisheries sector in Ghana and the detailed guidance on the establishment and operationalization of co-management structures for MPA governance in Ghana (OCPP, 2026). The MPA Community Management Group (CMG) is the first decision-making structure at the community level. They are responsible for organizing meetings, sensitizing participating community members, and initiating community-level activities. They comprise elected representatives from participating fishing communities. The Community Management Groups (CMGs) are organized into three clusters based on geographical proximity and shared interests, with each cluster represented by a nine-member Community-Cluster Co-management Committee (CCC). The Zonal/District Directors of the Fisheries Commission in the GCTPA are advisors to the CCC. The CCC serves as the link between the participating communities and the MPA-Management Executive Committee (MEC) and coordinate all the CMGs under its jurisdiction.

The MPA-MEC is a federated structure and represents the highest decision-making body for the MPA's management at the regional level and reports directly to the MPA Technical Advisory Committee (TAC). The MPA-MEC is composed of government agencies at the regional and district levels, notably, the Fisheries Commission, Wildlife Division of the Forestry Commission, Environmental Protection Authority (EPA), Ghana Maritime Authority (GMA), Ghana Navy, Marine Police, Land use and Spatial Planning Authority (LUPSA), Regional Coordinating Council (RCC), Ahanta West and Nzema East Districts. Others are representatives of traditional authorities in the GCTPA, elected representatives of CMG and CCCs and representative of NGO operational in the GCTPA. Other stakeholders will be co-opted to the MPA-MEC as necessary.

The MPA-MEC will lead the development of the MPA management plan and oversee its strategic direction and implementation. It will be the platform for resolving conflicts among participating communities and for overseeing all aspects of the MPA's operations, fostering relationships with relevant stakeholders and upholding transparency and accountability in its management role. Beyond the CMG, CCCs and MPA-MEC, roles of existing government agencies, private sector entities and associations regarding management of the GCTP-MPA have been listed in Table 6.

Table 6: Institutions and their roles in Greater Cape Three Points MPA implementation

Institutions	Roles
Government Institutions (State Actors)	
Ministry of Fisheries and Aquaculture	Overall Co-ordination
Fisheries Commission	Technical oversight / FEU monitoring and surveillance for fishing activities
Wildlife Division of the Forestry Commission	Ensuring wildlife protection and management
Ministry of Environment, Science and Technology	Ensuring Kunming-Montreal targets are achieved
Environmental Protection Agency	Permitting and monitoring of resource use
Ghana Maritime Authority	Monitoring sea state Regulating vessel usage in MPA
Ghana National Petroleum Commission	Regulation of oil and gas exploration and development
Water Resources Commission	Ensuring water quality of inland areas / regulating water usage in multiple use area
Land Use and Spatial Planning Authority	Help with zoning and gazetting of spatial areas
Ghana Hydrological Authority	Monitoring and addressing coastal erosion and other climate change effects
Ministry of Transport	Regulating of water transport
Ghana Ports and Harbours Authority	Ensuring vessels to not discharge waste in the sea / cleanliness of landing ports
Ministry of Justice	Prosecution of offenders
Attorney General's Department	Prosecution of offenders
Ministry of Energy	Ensuring green energy sources
Petroleum Commission	Regulating oil and gas development
Ghana National Petroleum Corporation	Regulating oil and gas development
Ministry of Tourism and Creative Arts	Regulating and permitting recreational activities
Ghana Tourism Authority	Regulating and permitting recreational activities

Ministry of Interior	Ensuring safety and co-existence of users for peace of nation
Ministry of Finance	Sourcing and providing funding for MPA
Ministry of Defense	National security
Ghana Navy, Marine Police, National Security	Enforcement, Surveillance and Compliance
Metropolitan, Municipal and District Assemblies (MMDAs)	Permitting of activities Collection of user fees
Academia	Research and monitoring
Educational institutions including SHS	Education and awareness raising
Technical Advisory Committee (TAC) for MPA	Co-ordination and advising HM
Private sector and Communities (Non-state Actors)	
Corporate bodies	Funding / Investments
Beach resorts and hotels	Regulating their business
Fishing communities, especially those around the GCTPA	Compliance / Key Partners for the MPA
Fisheries Associations e.g. NAFAG, GNCFC, GIFA, GITA, NAFPTA, CAFOAG	Education and awareness raising on benefits of MPA
Chief Fishermen	Education and awareness raising on benefits of MPA; incurring compliance to fishing regulations
Konkohemaa	Education and awareness raising on benefits of MPA; incurring compliance to fish trading and marketing regulations; no purchase of illegal fish
Artistes	Communicating importance of MPA for resource conservation
NGOs / CBOs	Champions of the MPA / Resource mobilisation
Traditional authorities including chiefs, elders and opinion leaders of abutting communities	Education and awareness raising on benefits of MPA; incurring compliance to fishing regulations
MEC	Management of the MPA with the government and other organisations
Media	Publicity, informing, educating and management of expectations

6.1.2 Enforcement and compliance mechanisms

Enforcement involves monitoring, surveillance, and the application of legal penalties for non-compliance, ensuring that established rules effectively protect the designated MPA. Compliance monitoring protocols and enforcement strategies will be developed in consultation with law enforcement stakeholders and in alignment with co-management principles. These measures will be implemented within the legal framework provided by the Fisheries and Aquaculture Act, 2025 (Act 1146) and the Wildlife Resources Management Act, 2023 (Act 1115), which empower relevant authorities to regulate fishing activities, protect biodiversity, and enforce conservation measures within designated marine and coastal areas.

Together with law enforcement agencies, the CCCs, CMGs, and the MPA-MEC will establish mechanisms for round-the-clock surveillance. Security will be provided across the entire GCTP-MPA through measures such as clearly marked electronic warning signs following an agreed colour-coding regime, as well as the use of appropriate technologies including CCTV and other alarm systems to support monitoring and rapid response to violations. Private vendors may be contracted and partnered to provide some of the monitoring and security services.

6.1.3 Stakeholder participation and grievance redress mechanisms

The MPA-MEC shall be the forum for redress to all violators and others that have any form of concern or grievance with respect to the implementation of the MPA. A standard form, available both in hard copy and electronic, will be designed for the filing of complaints. Aside from the complainants, the form will be witnessed by at least two reputable persons in the community and or government institution. All complaints will be reviewed and heard by the MEC within a maximum of two (2) weeks of filing.

6.1.4 Financing and resource mobilization considerations

Effective management of MPAs requires sustainable sources of finance (Table 7), viable business environment, presence of capability enhancement projects, good infrastructure and healthy population (Sterling et al., 2017). Funding is needed for operational costs including honouraria for permanent staff, ecological monitoring equipment such as canoe and multi-parameter kit; transportation, community, press, and public engagements; as well as allowances for committee members. Funding is also needed for continuous education of the populace, administrative costs, provision of adequate signage and electronic equipment at the MPA, policing and enforcement duties, monitoring and research activities, opportunity costs, and provision of incentives to those that will be deprived of some livelihoods.

The current dominant funding source supporting all the processes for the establishment of the GCTP-MPA is the civil society organization, Hen Mpoano, and its international development partners. The government and other NGOs have made some financial commitments to the process and are expected to plan to sustain them through public-

private partnership arrangements. It is expected that other international and global donors will support through innovative mechanisms such as grants, compensation for negative use of MPA, issuance of bonds, venture capital funds and microfinance arrangements to help develop the community as well as businesses in tourism and recreation. Other sources of funds could include MPA user fees and tourism levies for enjoying nature (Nature fees). Each of these potential funding sources have associated challenges and opportunities that need careful harnessing and solutions. It is important to analyze both the short-term and long-term returns of the GCTPA MPA in the management plan.

Table 7 Sustainable Financing Mechanisms for the Greater Cape Three Points Marine Protected Area. Adapted from Reef Resilience Network (Reef Resilience Network, 2012)

Traditional funding sources		
Government sources • Direct allocation • Bonds and taxes • Lotteries, stamps and license plates • Concessions • Real estate tax surcharges • Debt relief • National, state and local development bank's loans	**Grant revenue** • Bilateral and multilateral donors • Private foundations • Non-governmental organisations • Conservation trust funds	**Tourism revenue** • Protected area entry fees • Diving fees • Hotel taxes • Voluntary donations • Merchandise sales • Concessions
Fishing revenue • License and permit sales • Quotas • Catch levies • Fines	Energy and mining • Oil spill funds	Private sector contributions • Corporate donations • Local business donations
Innovative approaches		
Private sector investments promoting biodiversity conservation	National conservation trusts linked to e.g., initiatives such as the Caribbean Biodiversity Fund	Payment for ecosystem services – incentives offered to landowners in exchange for managing their natural resources to provide ecological service (e.g., watershed protection, erosion control.)
Debt for nature swaps - debt owed by a developing country can be renegotiated with creditors to fund nature conservation activities. Capital can be applied through trust funds or foundations.	Carbon offsets	Biodiversity prospecting
Fish levies through eco labelling or certification	Fishing access payments	Alternative livelihoods that enhance local tax revenue

6.1 Implementation schedule

Table 8 outlines the schedule for implementation of broad strategies and key activities in the management plan framework and associated indicative timelines.

Table 8 Key strategies and activities, timelines for implementation, responsible institutions and expected outcomes

Strategy/Activity	Timeline	Responsible agency/organization	Expected outcome
Establish coordinated enforcement and surveillance system for the MPA	Short term (Year 1) and ongoing	Fisheries Commission, Marine Police, Ghana Navy, MPA-MEC, Community Management Groups (CMGs), fisher associations	Improved enforcement capacity and reduced illegal fishing activities
Conduct joint patrols and surveillance operations within MPA zones	Continuous	Fisheries Commission, Marine Police, Ghana Navy, Community surveillance groups	Increased compliance with MPA rules and protection of sensitive habitats
Deploy monitoring technologies (patrol boats, GPS tracking, reporting systems)	Year 1–2	Fisheries Commission, MoFA, MPA-MEC, partner NGOs	Enhanced monitoring and rapid detection of violations
Establish community-based monitoring and reporting mechanisms	Year 1 and ongoing	CMGs, Cluster Co-management Committees (CCCs), local communities, Fisheries Commission	Strengthened community participation and early reporting of illegal activities
Develop and disseminate operational rules, zoning regulations, and MPA guidelines	Year 1	MoFA, Fisheries Commission, MPA-MEC, TAC	Clear regulatory framework guiding activities within the MPA
Strengthen co-management institutions (CMGs, CCCs, MPA-MEC)	Year 1–2	MoFA, Fisheries Commission, NGOs, local authorities, fisher associations	Effective participatory governance and improved stakeholder ownership
Promote alternative livelihood programs for fishing communities	Year 1–3	MoFA, District Assemblies, NGOs, development partners, fisher associations	Reduced dependence on fishing and improved household incomes
Support value addition in fisheries (processing, storage, marketing)	Year 1–3	Fisheries Commission, NGOs, women's associations, District Assemblies, fisher associations	Increased income from fisheries value chain

Develop community-based ecotourism opportunities linked to the MPA	Year 2–5	District Assemblies, Tourism Authority, NGOs, community groups, fisher associations	Diversified local economy and increased conservation incentives
Protect and restore critical habitats (mangroves, nesting beaches, rocky reefs, benthic habitats)	Continuous	Wildlife Division, Fisheries Commission, EPA, NGOs, communities	Recovery of marine habitats and increased biodiversity
Implement mangrove conservation and restoration initiatives	Year 1–5	Wildlife Division, EPA, NGOs, community groups	Improved coastal ecosystem health and shoreline protection
Enforce restrictions on destructive fishing practices	Continuous	Fisheries Commission, Marine Police, Navy, MPA-MEC	Reduced habitat destruction and improved fish stock recovery
Establish and manage no-take zones and buffer zones	Year 1	MoFA, Fisheries Commission, MPA-MEC	Recovery of fish populations and improved ecosystem resilience
Implement marine pollution reduction initiatives	Year 2–5	EPA, District Assemblies, community groups	Reduced marine litter and improved coastal water quality
Promote community-based waste management systems	Year 2–5	District Assemblies, NGOs, local communities, fisher associations	Reduced land-based sources of marine pollution
Integrate climate change adaptation into MPA management	Year 2 onward	Ghana Hydrological Authority, MoFA, EPA, research institutions, NGOs	Increased resilience of coastal ecosystems and communities
Implement environmental education and public awareness programmes	Continuous	Fisheries Commission, NGOs, District Assemblies, schools	Increased public understanding and support for the MPA
Promote marine conservation education in coastal communities and schools	Continuous	NGOs, educational institutions, community leaders	Improved stewardship and community compliance
Conduct ecological and socio-economic monitoring	Continuous	Fisheries Commission, research institutions, NGOs	Evidence-based management decisions
Conduct biennial review of the MPA management plan	Every 2 years	MPA-MEC, MPA-TAC, MoFA	Adaptive management and improved plan effectiveness

CONCLUSION

The GCTP MPA management framework provides a strategic foundation for detailed MPA planning, discussion and guidance for conserving marine biodiversity while sustaining the livelihoods of coastal communities that depend on these resources. Through a combination of effective governance, community participation, science-based management, and strong enforcement mechanisms, the framework outlines practical pathways for addressing key threats to the marine ecosystem. Its implementation will require continued collaboration among government institutions, local communities, research organizations, and development partners. By promoting stewardship, sustainable resource use, and adaptive management, the framework seeks to enhance the resilience and productivity of GCTP marine resources. Ultimately, the success of this framework will depend on sustained commitment, adequate resources, and the shared responsibility of all stakeholders to safeguard this important marine ecosystem for present and future generations.

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