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Institutional Capacity Needs Assessment towards Strengthening Sustainable Ocean Governance in Ghana

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Abbreviations

ACECoR	African Centre for Excellence in Coastal Resilience
BAU	Business-as-usual
BBNJ	Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction
BSU	Building Stronger Universities in Developing Countries
BWM	International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004
CAT	Climate Action Tracker
CBD	Convention on Biological Diversity 1992
CCAC	Climate and Clean Air Coalition
CCDR	Country Climate and Development Report
CEMLAWS	Centre for Maritime Law and Security
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973
CMS	Convention on the Conservation of Migratory Species of Wild Animals Convention 1988
CNA	Capacity Needs Assessment
CODA	Coastal Development Authority
COLREG	Convention on the International Regulation for Preventing Collisions at Sea 1972
COMADRIP	Coastal Marine Conservation Drive Project
COMHAFAT	Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean 1991
CPESDP	Agenda for Jobs II: Creating Prosperity and Equal Opportunities for All 2021-2025
CREMA	Community Resource Management Areas
CSO	Civil Society Organisations
DOALOS	Division for Oceans Affairs and the Law of the Seas
EAF	Ecosystem Approach to Fisheries
EC	Energy Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIN	Environmental Information Network
EPA	Environment Protection Agency
ESIA	Environmental and Social Impact Assessments
FAL	Convention on Facilitation of International Maritime Traffic 1965
FAO	Food and Agriculture Organization of the United Nations
FC	Fisheries Commission
FCWC	Convention for the Establishment of the Fishery Committee for the West Central Gulf of Guinea (FCWC)
FEU	Fisheries Enforcement Unit
FPSO	Floating Production, Storage and Offloading Facilities
FUND	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1971
GBC	Ghana Boundary Commission
GBF	Global Biodiversity Framework
GCA	Global Center for Adaptation
GCLME	Guinea Current Large Marine Ecosystem
GEF	Global Environment Facility
GFRA	Ghana Fisheries Recovery Activity

GHA	Ghana Hydrological Authority
GHG	Greenhouse Gases
GI WACAF	Global Initiative for West, Central and Southern Africa
GGSA	Ghana Geological Survey Authority
GMA	Ghana Maritime Authority
GNPC	Ghana National Petroleum Corporation
GPAP	Global Plastic Action Partnership
GPHA	Ghana Ports and Harbours Authority
GSA	Ghana Shippers Authority
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GWL	Ghana Water Limited
GTA	Ghana Tourism Authority
HNS	International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea 1996
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICZM	Integrated Coastal Zone Management
IMO	International Maritime Organisation
IOGP	International Association of Oil and Gas Producers
IPIECA	International Petroleum Industry Environmental Conservation Association
IPOA-IUU	International Plan of action against Illegal, Unreported and Unregulated Fishing 2001
ISA	International Seabed Authority
ITDP	Integrated Tourism Development Plan
ITOPF	International Tanker Owners Pollution Federation Limited
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported and Unregulated
LBSA	Land-Based Sources and Activities
LC	London Convention on the Prevention of Marine Pollution by dumping of Wastes and other Matter 1972
LNG	Liquified Natural Gas
LUSPA	Land Use and Spatial Planning Authority
MARPOL	International Convention for the Prevention of Pollution from Ships 1973/1978
MC	Minerals Commission
MESTI	Ministry of Environment, Science, Technology, and Innovation
MFAD	Ministry of Fisheries and Aquaculture Development
MJAGD	Ministry of Justice and Attorney General Department
MLGDRD	Ministry of Local Government, Decentralization and Rural Development
MLNR	Ministry Of Lands and Natural Resources
MNS	Ministry of National Security
MOD	Ministry of Defence
MOE	Ministry of Energy
MOT	Ministry of Transport
MPA	Marine Protected Areas

MRV	Monitoring, Reporting and Verification
MSP	Marine Spatial Planning
MSWR	Ministry of Sanitation and Water Resources
MWH	Ministry of Works and Housing
NADMO	National Disaster Management Organisation
NDC	Nationally Determined Contributions
NDPC	National Development Planning Commission
NGO	Non-Governmental Organisations
NMTDPF	National Medium-Term Development Policy Framework
NOGC	National Oceans Governance Committee
NOSCP	National Oil Spill Contingency Plan
NPMP	National Plastics Management Policy
ODINAFRICA	Ocean Data and Information Network for Africa
OGS	Oceans Governance Study
OPRC	International Convention on Oil Pollution Preparedness, Response and Co-operation 1990
PC	Petroleum Commission
POP	Persistent Organic Pollutants
RMU	Regional Maritime University
SBE	Sustainable Blue Economy
SDG	Sustainable Development Goals
SEA	Strategic Environment Assessment
SOLAS	International Convention for the Safety of Life at Sea 1978
SOP	Sustainable Oceans Plans
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1995
SUA	Convention for the Suppression of Unlawful Acts against Safety of Maritime Navigation 1988
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Seas
UNDOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNESCO-IOC	United Nations Educational, Scientific and Cultural Organization - International Ocean Institute
UNFCCC	United Nations Framework Convention on Climate Change
UNFCCC	United Nations Framework Convention on Climate Change
UNOPS	United Nations Office for Project Services
UNSDCF	United Nations Sustainable Development Cooperation Framework
UV	Ultraviolet
VRA	Volta River Authority
VTMIS	Vessel Traffic Management Information System
WACA	West-African Coastal Areas Management
WACAF	West and Central Africa Region Action Plan 1981
WD-FC	Wildlife Division of the Forestry Commission

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Field visit in Keta 2018.
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Executive Summary

The oceans play a vital role in sustaining life on Earth, regulating climate, providing food, supporting trade, and harbouring biodiversity hotspots, yet face numerous threats such as pollution, warming, and biodiversity loss due to human activities. Recent international efforts, including the High Seas Treaty 2023, the Kunming-Montreal Global Biodiversity Framework 2022, and the International Maritime Organisation's Strategy on Reduction of Greenhouse Gas (GHG) Emissions from Ships 2023, aim to address these challenges through increased protection of biodiversity and sustainable management of ocean resources.

Ghana as a member of the High-Level Panel for Sustainable Ocean Economy has committed to sustainably manage 100% of the ocean area under its national jurisdiction, develop a Sustainable Ocean Plan (SOP) and achieve this target by 2025. It is within this context that the Ministry of Environment, Science, Technology, and Innovation (MESTI) requested technical assistance support from the United Nations Environment Programme (UNEP) to undertake an Institutional Capacity Needs Assessment (CNA) to support national efforts in strengthening sustainable ocean governance. This CNA process is supported under the current country programme cooperation framework between Ghana and Norway's Oil for Development (OfD) Knowledge Programme, for the period 2022-2024, and under the UNEP-Norway OfD collaboration.

Objective and Scope

Under the OfD country programme, one of the identified priorities by the Government of Ghana is to strengthen the capacities of the Environment Directorate at the MESTI, the EPA (Environment Protection Agency) and the Land Use and Spatial Planning Authority (LUSPA) to deliver effective environmental governance, and specifically to develop a framework for marine management planning which contributes towards the national SOP process. The SOP process in Ghana is being coordinated by the Sustainable Development Goals (SDG) Advisory Unit under the Office of the President.

Ghana as a member of the High-Level Panel for Sustainable Ocean Economy has committed to sustainably manage 100% of the ocean area under its national jurisdiction, and develop a Sustainable Ocean Plan (SOP) and achieve this target by 2025.

The main objective of this CNA is to identify the key institutional capacity needs to support Ghana's SOP process. The assessment focused on select institutions with core environmental governance and management mandates, namely: the Environment Directorate at the MESTI, the EPA and LUSPA. The CNA was carried out from March 2023 to March 2024, which included virtual consultations, two in-country fact-finding consultations and a field visit to the western Ghanaian coast, follow-up surveys and questionnaires, and a national validation workshop held on 19 March 2024 in Accra. The report builds on the National Oceans Governance Study 2023, undertaken by the University of Ghana and commissioned by the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the Office of Legal Affairs of the United Nations.

Scoping mission, February 2023.
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The scope of this assessment was determined in consultation between government stakeholders and the project team, who identified areas of critical importance. This structure is represented in the analytical framework adopted for this capacity assessment, provided in Annex 1. The CNA proposes seven key capacity areas essential for Ghanaian institutions to support sustainable ocean governance:[1] (1) national environmental policies, legal and regulatory framework, strategies, and guidelines (2) institutional coordination mechanisms (3) environmental data management (4) ocean planning tools and management (5) environmental regulatory capacities and compliance monitoring (6) acute marine pollution and emergency preparedness and response and (7) stakeholder engagement. This CNA report analyses institutional capacities across these seven key areas.

A total of 226 stakeholders (150 men and 76 women) were consulted during this assessment process representing national government institutions, sub-national institutions, academia, research institutions, industry, civil society organizations, and international development partners active in Ghana.

On the Government's request, attention has been given to plastic pollution concerns alongside other forms of pollution (See Finding 9). In order to develop timely recommendations and support Ghana in meeting its timeline for developing the SOP by 2025, this CNA is limited to the aforementioned scope.

A total of 226 stakeholders (150 men and 76 women) were consulted during this assessment process representing national government institutions, sub-national institutions, academia, research institutions, industry, civil society organizations, and international development partners active in Ghana. To gain a gender-balanced understanding of the issues at hand, UNEP endeavoured to speak to as many women stakeholders as possible during the consultation process. Notably, within the existing workforce of the institutions assessed, men are greatly overrepresented in comparison to female staff (See Chapter 2.B2). During the field visit, UNEP had the opportunity to interact with local government leaders, fishers' cooperatives including women involved in the sector, and heads of traditional community structures. Given the cultural context of Ghana, many of these positions of power and decision-making are still held by men, which influenced the gender balance of stakeholder consultations.

Key Findings and Recommendations

The key findings and recommendations in this report address the institutional capacity strengths and gaps in the Environment Directorate at the MESTI, the EPA and LUSPA. While the CNA focuses on these three institutions, it also points to broader capacity issues related to environmental governance and management in the coastal and marine space in Ghana. Through this assessment, four cross-cutting, critical capacity gaps have been identified, which can be broadly categorised as follows:

1. Inadequate regulatory and policy frameworks (Findings 1and 2);
2. Limited institutional coordination and capacity including compliance monitoring (Findings 3, 4, 5 and 7);
3. Fragmented environmental data management (Finding 6); and
4. Cross-sectoral and area-based implementation challenges (Findings 8 and 9).

[1] There is no single capacity framework that exists for assessing sustainable oceans governance. UNEP's proposed non-exhaustive list of seven key capacity areas have been drawn from the 2022 National Ocean Governance Study for Ghana was commissioned by the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the Office of Legal Affairs of the United Nations, UNEP's Sustainable Blue Economy transition framework, and the Guide to the Sustainable Ocean Plans developed by the High Level Panel for a Sustainable Ocean Economy 2020 (High Level Panel for a Sustainable Ocean Economy 2022).

To prevent overgeneralising and ensure specificity in addressing the Government's concerns, this report presents **nine key findings** and **35 recommendations** (refer to Table 1) based on the capacity assessment framework developed by the UNEP team (see also Section V). The recommendations in this report are extensive; however, it is understood that they may need to be further prioritized based on available resources and an agreed implementation plan.

FINDING 1:

Ghana has several laws, regulations, and policies in place that address aspects of environmental governance and management of the coastal and marine space, with a few notable exceptions.

Strong environmental laws and institutions are essential to achieving environmental goals and developing effective responses to pressing environmental crises. Ghana has already made significant progress in enacting legal instruments that address issues related to ocean governance. However, based on CNA findings, several important environmental policy and legal gaps remain. Currently, Ghana does not have a framework policy on ocean governance, nor dedicated laws on climate change, plastics management, decommissioning for the oil and gas sector and framework laws for Marine Protected Areas (MPAs). Several important laws related to biodiversity, wildlife and fisheries management remain in draft forms. Filling these gaps will help strengthen the environmental rule of law and build public confidence in institutions.

FINDING 2:

Ghana is a Signatory and Party to several key international agreements, treaties, and conventions. However, incorporating these international instruments into domestic law is still pending.

A basic principle of international law is that a State, which is a party to an international treaty, convention or agreement must ensure that its domestic law and practice are consistent with the relevant instrument. As a dualist nation, this is not automatic for Ghana but requires an incorporation process as stipulated under the Constitution. This process of domestication is supported by implementing legislation which details specific provisions in the given area. Domestication will empower the relevant institutions to enforce Ghana's international commitments, especially under the Kunming-Montreal Global Biodiversity Framework, on protecting the marine environment and preventing marine pollution.

FINDING 3:

Government institutional mandates relevant to oceans governance are highly fragmented and spread across multiple Ministries, Departments and Agencies.

The mandate for ocean governance has been distributed across various Ministries, Departments and Agencies (MDAs) with their respective mandates. However, overlapping, and contradictory mandates can result in a duplication of efforts and resource inefficiency. This lack of clarity can lead to coordination challenges, for instance between the Ghana Maritime Authority vis-à-vis EPA during oil spill incidents. While the institutions have a broadly clear understanding of their mandates, the involvement of multiple actors in the governance of coastal and marine space can pose an important challenge related to responsibility and coordination. Clarifying mandates across and within institutions will be essential in moving forward under the SOP process.

FINDING 4:

Ongoing initiatives on strengthening ocean governance in the country lack the required level of institutional coordination to maximise impact

Strengthening collaborative management of the shared ocean space will heighten the effectiveness of ongoing conservation efforts. Developing a formal institutional coordination mechanism will enhance stakeholder engagement, compliance monitoring and resource efficiency. Inclusive participation involving traditional and community-based structures and civil society organisations will be key to building public confidence and will ensure greater buy-in from local communities.

FINDING 5:

Insufficient institutional capacity such as severe staff shortage impedes effective regulatory implementation and environmental oversight and compliance monitoring.

Critical staff vacancies and limited budgets have disproportionately increased the workload for the existing staff members within the institutions surveyed. Periodic educational and technical training for staff is essential to keep pace with new advancements and technology pertinent to environmental management. Concerted efforts to ensure the development of specialised skill sets such as marine spatial planning (MSP), environmental impact assessments (EIAs), strategic environmental assessments (SEAs), data collection and compliance monitoring should be prioritised. Collaborating with existing institutions, including think tanks, universities and international development partners can help facilitate training, knowledge, and technology transfer.

FINDING 6:

Data management related to the marine environment is fragmented and requires further streamlining and strengthening.

Regular and systematic data monitoring of key environmental parameters is crucial for evidence-based policymaking and to ensure sustainable management of Ghana's coastal and offshore ecosystems. Different types of environmental data, ranging from biodiversity to GHG emissions to fisheries resources, are currently held across various governmental and non-governmental institutions. Multiple data management systems make it difficult to identify clear data gaps. This fragmentation hinders efficient data sharing and makes public access to information challenging. Streamlining data management is critical to ensuring data availability, transparency and accessibility. A long-term strategy for data management is needed to ensure sustained financing for data generation and management.

FINDING 7:

National development planning does not adequately address environmental sustainability concerns nor the co-existence of multiple sectors and resource users.

The Ghanaian coastal and marine environment is occupied by multiple development sectors and stakeholders, including offshore oil and gas, fisheries, tourism and maritime shipping. A well-managed coastal and marine environment is vital to the socio-economic health of the country. An integrated approach to cross-sectoral development, utilising spatial planning tools such as MSP and SEAs, can assist in inclusive development planning that benefits local stakeholders including artisanal fishers and women in coastal communities.

FINDING 8:

Existing conservation measures for the protection of coastal and marine environments lack robust implementation and enforcement.

While Integrated Coastal Zone Management and Marine Protected Areas are effective environmental management and conservation approaches, no Ghanaian institute holds the legal mandate nor technical expertise to implement them. Initial efforts should be concentrated on strengthening conservation efforts in the five Ramsar sites to mitigate the effects of pollution, mangrove overharvesting, sand mining and overfishing. Transboundary regional cooperation with neighbouring countries should be further enhanced, for instance, concerning data sharing and pollution preparedness and response. Ghana has a rich experience with community-led natural resource management approaches, which can serve as a strong foundation for establishing coastal and ocean management approaches at national and sub-national levels.

FINDING 9:

Marine pollution remains a major threat to Ghana's coastal and marine environment, despite the ongoing efforts.

Marine pollution is emerging as one of the fastest-growing issues, given the wide range of pollutants like oil, sewage, runoff, and persistent organic pollutants (POPs). While a framework law is urgently needed, an assessment to gauge pollution levels should be prioritised – a baseline for seafood contamination, source-to-sea pollutants and an inventory of hazardous substances should be created to inform the next steps. Simultaneously, greater institutional clarity and sustained national and local level exercises for oil spill response are essential. Early spill-detecting systems that involve local fishing communities, traditional leaders and local NGOs are also needed.

A brief overview of the Nine Key Findings and 35 recommendations are provided below. For further detail please refer to Chapter 5 of the report on Key Findings and Recommendations.

Fact Finding Mission August 2023.
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Table 1: **Summary of Nine Key Findings and 35 Recommendations.**

	Findings	Recommendations
1	Ghana has several laws, regulations, and policies in place that address aspects of environmental governance and management of the coastal and marine space, with a few notable exceptions.	**1.1** Prioritise finalising legal instruments currently in their draft form and enact them into law. **1.2** Finalize the draft Integrated Coastal and Marine Policy which will address all governance aspects of the marine and coastal space. **1.3** Improve alignment and policy coherence across sectors such as climate, energy, and environment.
2	Ghana is a Signatory and Party to several key international agreements, treaties, and conventions. However, incorporating these international instruments into domestic law is still pending.	**2.1** Prioritise incorporating international instruments into domestic law and join other relevant international treaties, agreements, and conventions.
3	Government institutional mandates relevant to oceans governance are highly fragmented and spread across multiple Ministries, Departments and Agencies.	**3.1** Clarify the scope of institutional mandates to ensure MDA's have defined functions and responsibilities. **3.2** Appoint an institutional lead on Marine Protected Areas (MPAs) to avoid duplication of efforts. **3.3** Delegate authority to institutions with technical expertise and capacity to streamline mandates.
4	Ongoing initiatives on strengthening ocean governance in the country lack the required level of institutional coordination to maximise impact.	**4.1** Formalize a national coordination mechanism to ensure smooth coordination between key governmental and non-governmental institutions involved in ocean governance. **4.2** Under this national mechanism, establish distinct levels of coordination, to ensure cross-cutting representation across different tiers of government. **4.3** Engage with traditional and community-based governance structures to strengthen local engagement in ocean governance. **4.4** Support public outreach and feedback campaigns between agencies and affected communities to ensure transparency and address grievances. **4.5** Build synergistic collaborations between government and academia, research, and industry to aid evidence-based policymaking.

	Findings	Recommendations
5	Insufficient institutional capacity such as severe staff shortage impedes effective regulatory implementation, environmental oversight and compliance monitoring.	**5.1** Fill vacant staff positions to ensure effective implementation of institutional mandates, with due consideration given to gender responsive recruitment. **5.2** Establish periodic institutional training programmes to remain up to date with legal and technological advancements. Gender mainstreaming and responsiveness should also be addressed in these trainings. **5.3** Extend training outreach to district and local government so they can benefit from capacity-building initiatives. **5.4** Provide periodic specialized training on EIAs, site inspection and data analysis to strengthen compliance monitoring capacities. **5.5** Strengthen formal collaborations with academic institutions that could offer regular professional courses and certifications to government staff.
6	Data management related to the marine environment is fragmented and requires further streamlining and strengthening.	**6.1** Establish a national marine monitoring programme to ensure data collection on key parameters of the marine ecosystem. **6.2** Facilitate data-sharing and management to encourage harmonization across data formats. **6.3** Ensure sustainable data management protocols.
7	National development planning does not adequately address environmental sustainability concerns nor the co-existence of multiple sectors and resource users.	**7.1** Integrate a cross-sectoral approach to marine spatial development to comprehensively address social and environmental impacts and sensitivities across development sectors.
8	Existing conservation measures for the protection of coastal and marine environments lack robust implementation and enforcement.	**8.1** Provide an enabling national policy on Marine Protected Areas to consolidate the effective management of protected areas. **8.2** Strengthen conservation efforts in existing Ramsar sites to strengthen protection and compliance monitoring. **8.3** Use good practice examples on community-based management **8.4** Strengthen regional cooperation to build trust between countries and ensure effective transboundary conservation and management.

	Findings	Recommendations
9	Marine pollution remains a major threat to Ghana's coastal and marine environment despite the ongoing efforts.	**9.1** Finalize a national policy and regulatory framework on marine plastic pollution to address this growing problem. **9.2** Conduct baseline surveys to assess microplastic presence in seafood, to inform future policy decisions. **9.3** Regularly update and exercise the National Oil Spill Contingency Plan (NOSCP) for different emergency scenarios and for strengthening institutional cooperation. **9.4** Strengthen oil-monitoring systems by engaging with local community leaders who can assist in cost-effective early-detection and emergency response. **9.5** Ensure proper decommissioning of existing oil and gas structures to prevent marine pollution risks. **9.6** Encourage regional and transboundary cooperation on spill preparedness and response. **9.7** Create an inventory of hazardous substances which tracks the presence of persistent organic pollutants, pathogens and other harmful elements present in fish and shellfish along the coast and in offshore areas. **9.8** Monitor sewage and wastewater treatment plans regularly to identify heavy pollution zones and prioritise action. **9.9** Address source-to-sea pollution by conducting a dedicated capacity assessment that will identify key contaminants and make timely course-correction easier. **9.10** Support increased electrification and shore-to ship power to reduce emissions from shipping, limit marine pollution and meet carbon reduction targets.

Introduction

Oceans form a life-giving nexus, they regulate climate, provide food sources, facilitate trade, produce half of the oxygen in the Earth's atmosphere, absorb 25% of CO_2 emissions and provide a home to many biodiversity hotspots. However, as human activities have intensified, the threats have also multiplied resulting in ocean acidification, ocean warming, introduction of invasive species, and biodiversity loss. Offshore economic and industrial activities, including the energy sector have the potential of exacerbating existing risks – through increased land-based pollution, disruption of migratory pathways, degradation of natural habitats, seabed disturbances and pollution from oil spills. Such impact is always greater than the sum of its parts. The declining health of the oceans has dire consequences for people, their livelihoods, and entire economies, with the poorest communities that rely on ocean resources often being the most affected.

The declining health of the oceans has dire consequences for people, their livelihoods, and entire economies, with the poorest communities that rely on ocean resources often being the most affected.

The international community has expressed an interest in addressing these challenges through a series of legal and policy developments in the ocean and marine spaces.

- The recently signed landmark High Seas Treaty 2023 adopted by the Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) aims to combat these threats by safeguarding areas beyond natural jurisdiction, which cover over two-thirds of the ocean.
- The Kunming-Montreal Global Biodiversity Framework (GBF) adopted in 2022 calls for protecting 30% of the world's terrestrial and marine habitats by 2030. The High Seas Treaty will increase marine protected areas and bolster the GBF objectives.
- International Maritime Organisation (IMO) adopted the 2023 Strategy on Reduction of GHG Emissions from Ships, a monumental step towards marine decarbonization, as it aims to reduce CO_2 emissions across international shipping by 40% by 2030.
- The High-Level Panel for Sustainable Ocean Economy (Oceans Panel) was set up by 16 countries in 2018, including Ghana, with a commitment to sustainably manage 100% of the ocean areas in their national jurisdiction by 2025.[2]

These instruments, in quick succession exemplify the international communities' commitment towards collective action on the sustainable use and management of the oceans. It further emphasises the urgent need to address the manifold pressures oceans face. These developments provide an essential framework for cross-sectoral cooperation between States and other stakeholders to promote the sustainable development of the ocean and its resources.

[2] As of December 2023, the Oceans Panel is comprised of 18 countries across 6 continents that account for 50% of global coastlines, 45% of global Exclusive Economic Zones, 21% of global fisheries, and 25% of world's shipping fleets. The 18 countries are Australia, Canada, Chile, Fiji, France, Ghana, Indonesia, Jamaica, Japan, Kenya, Mexico, Namibia, Norway, Palau, Portugal, Seychelles, United Kingdom, and United States of America.

The United Nations Environment Programme (UNEP) under its global collaboration with the Government of Norway, under the Norwegian Oil for Development (OfD) Knowledge Programme, works on enhancing national capacities for improved environmental governance and management and reducing pollution risks associated with the oil and gas sector. Under this collaboration, UNEP provides capacity building/training and technical assistance to OfD-supported countries including Ghana. UNEP's technical assistance support has previously included undertaking institutional capacity needs assessment (CNA), which are tailored to country priorities and Government requests for assistance through the OfD country programme.

Sustainable Oceans Management in Ghana

Ghana is situated within the Gulf of Guinea in West Africa. It borders east with the Republic of Togo and west with the Republic of la Côte d'Ivoire. Ghana is within longitudes 3° 5' W and 1° 10' E and latitudes 4° 35' N and 11°N. It has about 550 km of coastline, an extensive exclusive economic zone (EEZ) of over 218,000 km2 and a continental shelf area of around 23,700 km^2 (Figure 1).

Based on Ghana's commitment to sustainably manage 100% of the ocean area under its national jurisdiction and to develop a Sustainable Ocean Plan (SOP) to achieve this target by 2025, the Ministry of Environment, Science, Technology, and Innovation (MESTI) requested technical assistance support from UNEP under its current OfD country programme cooperation framework between Ghana and Norway for the period 2022-2024. One of the identified priorities by the Government is strengthening the capacities of the Environment Directorate at the MESTI, the EPA (Environment Protection Agency) and Land Use and Spatial Planning Authority (LUSPA) to deliver effective environmental governance, specifically in developing a framework for marine management planning which contributes towards the SOP national process.

The SOP process in Ghana is being coordinated by the Sustainable Development Goals (SDG) Advisory Unit under the Office of the President. A working group has been set up to serve as a platform for coordinating and providing technical support towards implementation of the SOP for Ghana (Box 1).

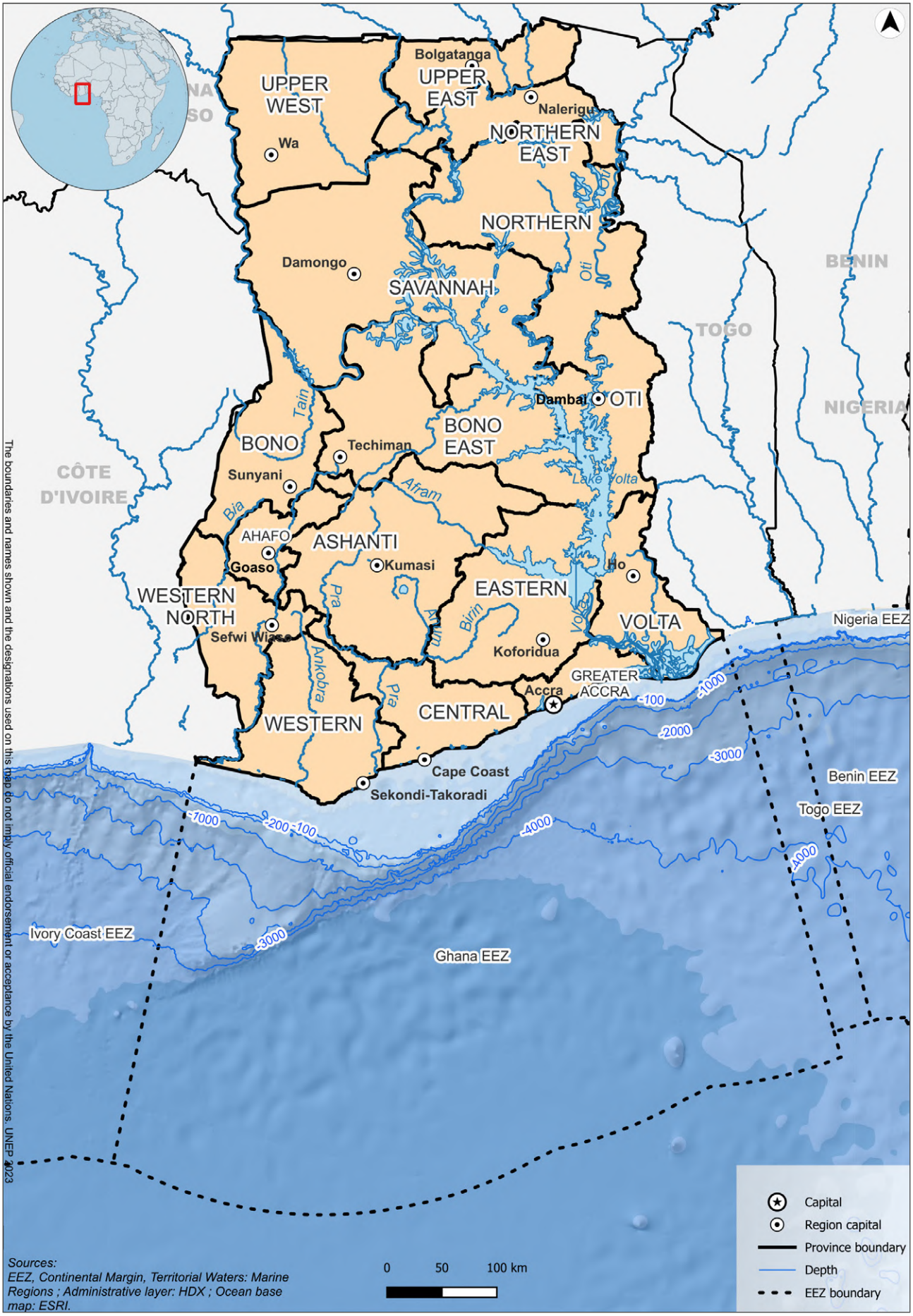
Box 1. Sustainable Oceans Planning Working Group in Ghana.

The SOP Technical Working Group is comprised of

- The Petroleum Commission (PC)
- National Development Planning Commission (NDPC)
- Fisheries Commission (FC)
- Hen Mpoano (a civil society organisation)
- Centre for Maritime Law and Security (CEMLAWS) Africa
- Ghana Maritime Authority (GMA)
- EPA
- MESTI
- Ghana Hydrological Authority (GHA)
- Centre for International Maritime Affairs
- Regional Maritime University and
- The Ghana Navy

Field visit along Ramsar wetland sites in Ghana 2018.

Figure 1: **Bathymetry and oceanographic features of the Ghanaian coast.**



In this context, UNEP has undertaken an Institutional Capacity Needs Assessment (CNA) under the UNEP-Norway OfD Partnership on behalf of the Ministries, Departments and Agencies (MDAs) with core environmental mandates, namely: the Environment Directorate at the MESTI, EPA and Land Use and Spatial Planning Authority (LUSPA). The CNA aims to contribute towards strengthening environmental management in oceans governance and the ongoing SOP process led by the Office of the President.

The main objective of the CNA are as follows:

- To identify the key capacity needs of the Environment Directorate in the MESTI, EPA and LUSPA in carrying out their relevant mandates.
- To provide an overview of existing environmental governance capacity gaps in the country;

and

- To provide a template to conduct similar institutional assessments for other relevant institutions in the future.[3]

This report assesses institutional capacities in three thematic focus areas of environmental governance:

- Ecosystem and biodiversity data management to support coastal and ocean governance and planning,
- Environmental management in coastal and marine areas, and
- Marine pollution and other types of threats to the coastal and marine environment.

This institutional capacity needs assessment, however, does not form a comprehensive environmental assessment on the above issues. **Annex 1** provides the analytical framework adopted for this capacity assessment. The CNA proposes seven key capacity areas which the project team has identified as critical for Ghana institutions to support sustainable ocean governance:[4] (1) national environmental policies, legal and regulatory framework, strategies, and guidelines (2) institutional coordination mechanisms (3) environmental data management (4) ocean planning tools and management (5) environmental regulatory capacities and compliance monitoring (6) acute marine pollution and emergency preparedness and response and (7) stakeholder engagement. This CNA report analyses institutional capacities across these seven key areas.

Given Ghana's commitment to sustainably manage 100% of its oceans area under its national jurisdiction and develop a SOP by 2025, the limited scope of this assessment is intentional. Given the fast-approaching timelines of the SOP, UNEP hopes that the CNA findings would be able to inform the SOP process by simultaneously highlighting current institutional strengths and any remaining capacity challenges to be addressed. This report does not assess strategies and sources of financing for the sustainable ocean plan, for which a separate assessment process will be necessary. Nevertheless, by working to strengthen environmental governance capacities, this CNA contributes towards institutional readiness to facilitate private sector investment. The detailed scope, methodology and limitations are provided in **Annex 2** of this report.

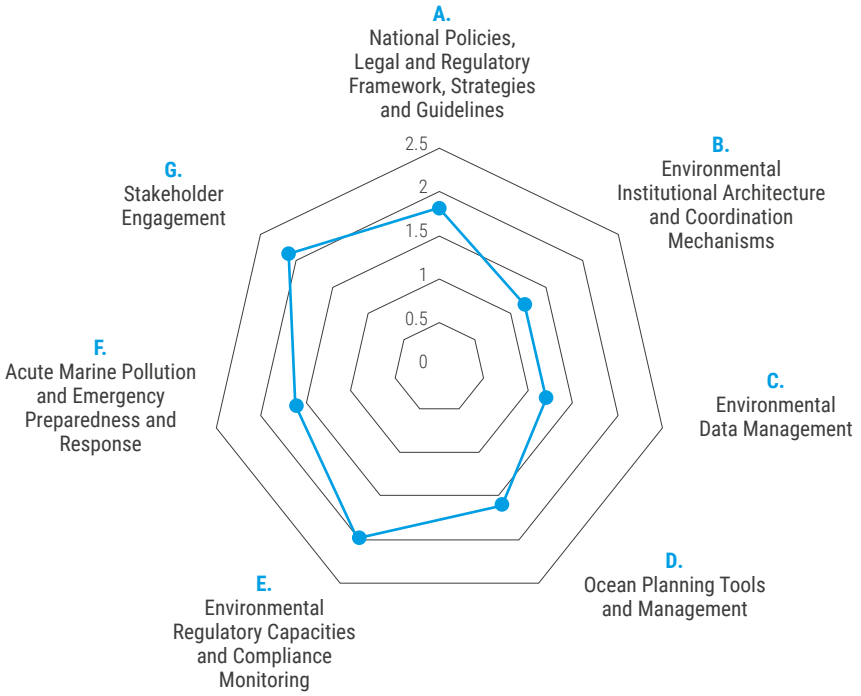
[3] While there is no internationally accepted definition for oceans governance, it can be understood to be defined as 'the way in which ocean affairs are governed, not only by governments, but also by local communities, industries, and other stakeholders, which includes national and international law, public and private law, as well as custom, tradition and culture, and the institutions and processes created by them' (Intergovernmental Oceanographic Commission 2021).

[4] There is no single capacity framework that exists for assessing sustainable oceans governance. UNEP's proposed non-exhaustive list of seven key capacity areas have been drawn from the 2022 National Ocean Governance Study for Ghana was commissioned by the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the Office of Legal Affairs of the United Nations, UNEP's Sustainable Blue Economy transition framework, and the Guide to the Sustainable Ocean Plans developed by the High Level Panel for a Sustainable Ocean Economy 2020 (High Level Panel for a Sustainable Ocean Economy 2022).

UNEP has developed a capacity assessment tool for this CNA, based on the above-mentioned seven key capacity areas for strengthening environmental management related to oceans governance. **Annex 3** of the report presents results of applying this capacity assessment tool in Ghana, which draws from the survey responses received and the CNA project team's own assessment.

Responses were received from respondents from the Environment Directorate at the MESTI, EPA, LUSPA, Ghana Maritime Authority, Petroleum Commission, and the University of Ghana. Figure 2 shows the results of the national stakeholder responses to this tool. Based on the survey responses received, the most critical capacity gaps pertain to the need for strengthening capacities in the institutional architecture and coordination mechanisms and the data management infrastructure in place for oceans governance in Ghana. However, as will be discussed in this report, UNEP also highlights the important need to strengthen environmental management regulatory capacities, compliance monitoring as well as preparedness and response systems for acute marine pollution.

Figure 2: Results of the Institutional Capacity Needs Assessment Checklist towards Strengthening Sustainable Ocean Governance in Ghana 2024.



The results of the spider charts were further substantiated in the stakeholder consultations, which are reflected and elaborated in this report. These results can be used as a benchmark for tracking capacity improvements over time.

A total of 226 stakeholders (150 men and 76 women) were consulted during this assessment process with 125 representing national government institutions, 15 sub-national institutions, 25 academia and research institutions, 9 industry, 22 civil society organizations, and 30 international development partners active in Ghana. **Annex 4** provides a full list of all stakeholders consulted.

Existing Legal, Policy and Regulatory Instruments relevant to Oceans Governance

A. Relevant laws, policies, plans, strategies, and regulations.

In 2022, a National Ocean Governance Study for Ghana was commissioned by the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the Office of Legal Affairs of the United Nations, which sought to provide a high-level overview of Ghana's legal and institutional framework for ocean governance in the context of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). This study was undertaken by the University of Ghana, School of Law.

Finalized in 2023, the Ocean Governance Study (OGS) analyses the level of implementation of UNCLOS through Ghana's ocean governance laws and identifies high-level gaps in the current legal and institutional arrangements. The OGS addresses two priority sectors of oceans governance identified by the Government of Ghana – maritime security and marine fisheries. It provides an analysis of the legal and regulatory provisions on fisheries and aquaculture, hydrocarbons, marine environment and marine pollution, shipping and port activity, and maritime safety and security in Part-II Sections 2.3 – 2.9 of that report. Policy frameworks governing maritime security and marine fisheries are further detailed in Part-IV Sections 4.1 – 4.2 of the report (Addo *et al*. 2022). This CNA report references the OGS on the relevant legal provisions in existing legal, policy and regulatory instruments, and builds upon its findings.

The tables in **Annex 5** summarize the findings of the OGS to provide the status of the key framework legislation (Table 1), enabling secondary legal instruments (Table 2) and guiding policy frameworks (Table 3) that addresses issues related to oceans governance in Ghana. The tables also identify the responsible implementing agency for each instrument.

On issues related to Ghana's climate commitments, the Environment Protection Authority Bill 2023 purportedly seeks to formalize the institutional arrangements pertaining to Ghana's reporting on its Nationally Determined Contributions (NDCs).[5] The World Bank's *Country Climate and Development Report: Ghana* concludes that the current policy and legal regime does not address issues relating to carbon and green taxation, and more significantly that there is no requirement for Environmental and Social Impact Assessments (ESIAs) for new projects to consider their climate change impacts (World Bank Group 2022). While the National Climate Change Policy 2013 acknowledges the challenges posed by climate change on coastal and marine areas, it offers only limited national measures to deal with its impacts on maritime spaces and coastal zones. The Climate Action Tracker Climate Governance Report 2021[6]

[5] Bills and draft laws under discussion before the Parliamentary Select Committees are not made available publicly in Ghana until approved.

[6] The Climate Action Tracker (CAT) is an independent scientific project that tracks government climate action and measures it against the globally agreed Paris Agreement aim of "holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C." A collaboration of two organisations, Climate Analytics and New Climate Institute, the CAT has been providing this independent analysis to policymakers since 2009.

assigned a poor readiness score for policy processes related to climate change citing policy inconsistencies. It notes that structures for horizontal and vertical coordination on climate issues and policy review do exist but are not fully effective (Climate Action Tracker 2021).

With regards to the offshore petroleum sector, Ghana is in the process of converting the EPA's environmental guidelines on oil and gas activities, including on decommissioning and abandonment, into regulations, and these are currently at the Parliament awaiting passage into law.

Ghana also needs to develop a regulatory framework to implement and operationalize the National Plastics Management Policy (NPMP).[7]

Since 2006, there has been an ongoing effort by the National House of Chiefs and the Law Reform Commission to codify all regional customary norms in Ghana under the 'Ascertainment and Codification of Customary Law Project' (Atuguba 2022), which relate to coastal and marine governance. Meanwhile, there are several customary practices that have been adopted in the country. Some of these are relatively new and regulatory in nature, such as the imposition of close seasons for fishing and weekly non-fishing days (Nunoo 2018a).

The 2020 Co-Management Plan for the Fisheries Sector acknowledges the role of traditional authorities in decentralising fisheries management through the enforcement of close seasons and closed areas every year. The Policy involves the traditional institutions such as the Chief Fishermen (in maritime areas), and river priests or the fisherfolk headman (in inland fishing communities) in the co-management committees. Another form of traditional institution in fisheries amongst women in Ghana is the fish market queen (for example *konkohemaa* in Akan areas) and her elders, who play a role in managing the marketing and pricing of fish.

Despite the laws, policies, and regulations in place for environmental governance and management in the marine and coastal environment, there is a continued need for enhancing the capacity of the relevant mandated institutions to ensure stronger enforcement and compliance monitoring of these laws and regulations (discussed further in Chapter 4. B.3). According to the joint study conducted in 2022 by the Government of Ghana (MESTI), the Global Centre for Adaptation (GCA), the University of Oxford, the United Nations Office for Project Services (UNOPS) and UNEP, inadequate resources, and enforcement of regulations in Ghana have led to widespread encroachment on protected land,[8] non-compliance,[9] and loss of protected and environmentally sensitive areas (Global Centre on Adaptation *et al*. 2022).

Discussions during the validation meeting highlighted inadequate operationalization of existing legislative instruments and the lack of harmonization across legal policies as contributing to ineffective implementation. Regulatory "capture" by sector stakeholders who hold more political power than the regulators and political interference were also highlighted as other barriers to enforcement.

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[7] One of the strategic objectives of the NPMP is to develop a robust regulatory framework. It seeks to achieve this by 1. Supporting existing regulatory institutions to effectively implement this policy. 2. Mainstreaming gender and ensure inclusiveness of vulnerable groups. 3. Undertaking periodic review of existing Policy and legal frameworks to ensure consistency with the objectives of this Policy. 4. Organizing knowledge-sharing programmes for regulatory institutions. Read more Ministry of Environment, Science, Technology, and Innovation (2022). Revised National Plastics Management Policy. Available at https://mesti.gov.gh/wp-content/uploads/2021/02/Revised-National-Plastics-Management-Policy_-FINAL.pdf (Accessed 23 February 2024).

[8] In a study conducted by Awolorinke et al. on the factors that contribute to the non-compliance with the regulations that protect ecologically sensitive areas in the Greater Kumasi Metropolis of Ghana, the data revealed that 63%, 79%, 79%, and 53% of the respondents indicate that the unavailability of technology (drones), inadequate logistics, inadequate financial support, and unavailability of technical experts respectively influence their non-compliance with ecosystem regulations (Awolorinke *et al*. 2023).

[9] The lack of logistics and resources hinders LUSPA from monitoring for compliance and ensuring the efficiency of land use planning and management in all the districts (Global Center on Adaptation *et al*. 2022).

B. International commitments and domestication procedure.

Ghana is a Signatory and Party to several international and regional agreements, conventions and treaties that govern the international obligations of states on issues relating to oceans governance (Table 4 in Annex 5).

In Ghana, the executive branch (executed by or under the authority of the President) has the authority to negotiate and enter into international agreements on behalf of the country. However, the domestic application of these international agreements is not automatic. As a dualist system, Ghana's international commitments can only be translated into domestically enforceable actions through legislative action. Courts in Ghana are not authorised to enforce treaty provisions that could change rights and obligations in municipal law without legislative backing (Blanchard 2014). The process for making these agreements binding within Ghana's legal framework is outlined in Article 75 of the Ghanaian Constitution. The Constitution establishes a clear process for ratifying international agreements to ensure they are in line with domestic laws and to prevent conflicts. This process involves approval from Cabinet, legal advice from the Attorney-General, and a Parliamentary vote of more than half of the members of Parliament. This helps ensure that international agreements become legally binding and are incorporated within Ghana's domestic legal framework.

Table 4 in Annex 5 includes a list of Ghana's international commitments that have been domestically incorporated and specifies the corresponding implementing legislation and the mandated implementing authorities.

In the absence of formal domestication of other international commitments into national law, the MDAs in Ghana have sought to mainstream the core objective of these international engagements through policies and guidelines, such as mainstreaming climate change through national development plans.

Some of the global commitments relating to conservation and biodiversity made by Ghana under these international instruments include:

- Assess the necessity of establishing additional conservation areas, within the framework of land use planning programmes, to protect those representative or unique ecosystems.[10]
- Establish protected areas, either nationally or regionally, such as parks and reserves, to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened, or endangered species and other marine life.[11]
- Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration.[12]
- Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved. They should be protected by area-based conservation measures that are ecologically representative, well connected and equitably governed.[13]
- Contribute to the global 30x30 target that aims to effectively conserve and manage at least 30 per cent of the world's terrestrial and inland water area by 2030.[14]

[10] African Convention on Conservation of Nature and Natural Resources 1968. Article X: Conservation Areas

[11] Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention) 1981. Article 11

[12] Kunming-Montreal Global Biodiversity Framework 2022 under the Convention on Biological Diversity 1992. Target 2.

[13] Kunming-Montreal Global Biodiversity Framework 2022 under the Convention on Biological Diversity 1992. Target 3.

[14] United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ Agreement or the High Seas Treaty) 2023.

Additionally, Ghana has also committed to sustainably manage 100% of the ocean areas under its national jurisdiction by 2025, as a member of the Oceans Panel.

Ghana has also made global commitments aimed at reducing emissions and mitigating climate change. This includes its commitment to:

- Contribute collectively to reduce global methane emissions at least 30 percent from 2020 levels by 2030 worldwide (Climate and Clean Air Coalition 2023).
- Unconditionally lower its GHG emissions by 15% relative to a business-as-usual (BAU) scenario emission of 73.95 MtCO2e by 2030 (Government of Ghana 2018).
- Limit sulphur in ships' fuel oil to a maximum 0.50%.[15]
- Contribute to IMO targets that aim to reduce CO_2 emissions per transport work, as an average across international shipping, by at least 40% by 2030; reduce CO_2 emissions per transport work, as an average across international shipping, by at least 40% by 2030; and reach net-zero GHG emissions by or around, i.e., close to, 2050, considering different national circumstances.[16]
- As per Ghana's updated Nationally Determined Contributions (NDC) under the Paris Agreement (2020-2030), Ghana has identified 20 mitigation measures in the energy, transport, forestry, industry, and waste sector to achieve its 45% reduction in voluntary national emission reduction commitment (MESTI 2021).

Ghana is part of the Global Methane Partnership as well as co-chair of the Climate and Clean Air Coalition (CCAC). A founding partner of the CCAC, Ghana was the first country to include short-lived climate pollutants (SLCPs) and other air pollutants into their fourth official National Greenhouse Gas Inventory submitted to the UNFCCC (Climate and Clean Air Coalition 2024). In 2019, Ghana also became the first African country to join the Global Plastic Action Partnership (GPAP) to transition towards a circular plastics economy, reducing the country's plastic waste and pollution.

As noted in OGS,[17] Ghana is yet to enact implementing legislation for fulfilling its commitments under: the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009; the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989; the 1988 SOLAS Protocol; the International Convention on Load Lines 1966 and its 1988 Protocol; the Convention on the International Hydrographic Organization as amended by the 2005 Protocol; and the 1996 Protocol to the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended in 1987.

Furthermore, Ghana has yet to sign or ratify the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, 1991; the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention), 1996; International Convention on Civil Liability for Bunker Oil Pollution Damages, 2001; and the Nairobi International Convention on the Removal of Wrecks, 2007.

Inter-ministerial committees may need to be engaged to oversee the integration of international commitments into national policies, ensuring effective coordination, as well as to facilitate smoother domestication and implementation of Ghana's international treaty commitments.

[15] IMO MARPOL Regulations on Limiting Sulphur Content in Ships' Fuel Oil 2020.

[16] IMO Strategy on Reduction of GHG Emissions from Ships 2023.

[17] Read Part II Section 2.5 and Part V Section 5.1.2. of the National Oceans Governance Study – Ghana. (Addo *et al*. 2022)

Institutional Architecture

A. Institutional mandates related to oceans governance.

As can be observed from Figure 3, the roles and responsibilities relating to oceans governance in Ghana is spread across multiple Ministries, Departments and Agencies (MDAs) holding their specific mandates.

Part III Section 3.2 of the OGS maps out in detail the mandates of the various Ghanaian institutions in relation to oceans governance:

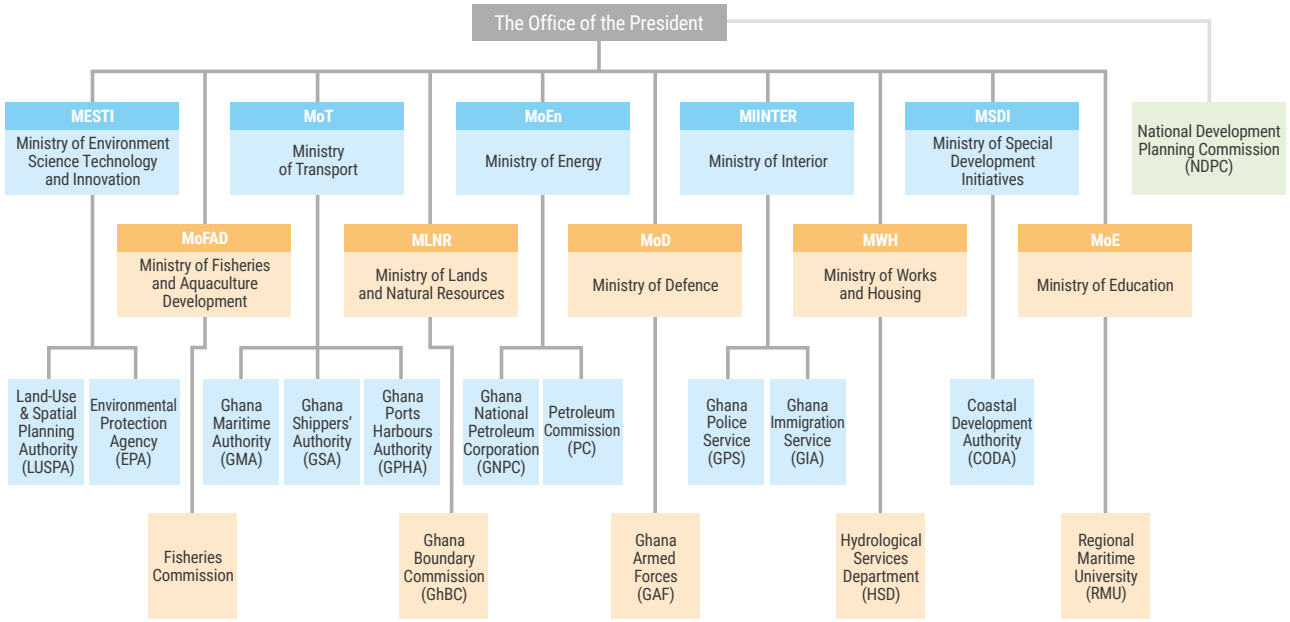
- Ministry of Environment, Science, Technology, and Innovation (MESTI), Environmental Protection Agency (EPA),
- Land Use and Spatial Planning Authority (LUSPA),
- Ministry of Fisheries and Aquaculture Development (MFAD), Fisheries Commission (FC), Fisheries Enforcement Unit (FEU),
- Ministry of Transport (MOT), Ghana Maritime Authority (GMA), Ghana Ports and Harbours Authority (GPHA), Ghana Shippers' Authority (GSA),
- Ministry of Energy (MOE), Ghana National Petroleum Corporation (GNPC), Petroleum Commission (PC),
- Ministry of Defence (MOD), Ghana Navy,
- Ministry of Interior, Marine Police Unit (MPU), Immigration Service, Narcotics Control Commission,
- Ghana Boundary Commission (GBC)
- Ministry of Works and Housing (MWH), Hydrological Services Authority (HSA), Coastal Development Authority (CODA),
- National Development Planning Commission (NDPC), and
- Regional Maritime University (RMU)

In addition to the above list of institutions discussed by the OGS study, other institutions are worth citing, namely:

- Ministry of Local Government, Decentralisation and Rural Development (**MLGDRD**) through **LUSPA** holds the mandate pertinent to decentralized spatial planning in coastal and marine space (i.e., marine spatial planning). LUSPA has the legal mandate to lead the development of the National and Sub-National Spatial Development Framework for Ghana's marine space.
- **District Assemblies** in Ghana also cooperate with the Fisheries Commission on the registration and licensing of canoes and the preparation of bylaws that support the implementation of national fisheries regulations.

Figure 3 shows the current institutional organogram of the various MDAs involved in oceans governance. **MESTI** is the lead environmental institution in Ghana in-charge of formulating policies and regulatory frameworks that promote environmentally sound practices, reduce pollution, manage the environment effectively, and enhance climate change resilience. Notably, the MESTI is currently developing an integrated coastal and marine management policy. The **EPA**, an implementing agency under the MESTI, is the national environmental regulatory body mandated to protect and enhance the country´s environment, including the marine environment.[18] The EPA is also responsible for coordination, monitoring environmental compliance and controlling pollution; including in the coastal and marine environment. For instance, the National Oil Spill Contingency Plan (NOSCP) is prepared and operationalised by the EPA to respond to oil pollution incidents both on land and sea, in collaboration with other relevant agencies such as the GMA, GPHA and Ghana Navy. While MESTI hosts the National Climate Change Committee, EPA is the lead country implementation institution for the UNFCCC.

Figure 3: Principal institutional arrangements on ocean governance in Ghana.
(Source: National Oceans Governance Study 2023)



[18] The National Plastic Policy 2020 addresses the effect of plastic pollution to the marine environment to include entanglement and ingestion by wildlife, the alteration of habitats and the transport of alien species, the impact of chemicals associated with plastics waste and demonstrated pathways into the human food web.

The Wildlife Division of the Forestry Commission (**WD-FC**) under the Ministry of Land and Natural Resources (**MLNR**) has the mandate for the management and protection of Ramsar sites and marine turtles, whereas EPA has the mandate over other ecological sensitive coastal areas. CSOs are also heavily involved in the oversight of conservation efforts in protected areas; this involves obtaining a letter of authority or a certificate of authority from the EPA and Forestry Commission depending on the category of protected area under question.

Furthermore, the Energy Commission (**EC**) under the Ministry of Energy (**MOE**) would be the mandated authority to regulate any future developments relating to offshore wind or tidal energy operations in Ghana.

MFAD is responsible for the promotion of sustainable management of the fisheries sector and has oversight and management functions over it. **Fisheries Commission** (**FC**) is the implementing agency of the Ministry and is in-charge of monitoring, control, surveillance, evaluation, and compliance functions in all areas of fisheries development and management in Ghana. **FEU** is a multi-agency entity that assists FC in the enforcement of fisheries regulations; it is comprised of the Ghana Navy (head), the Monitoring, Control and Surveillance Division-FC (deputy), and the Ghana Marine Police Unit.

The **GMA** under the Ministry of Transport (**MOT**) holds the mandate to enforce international maritime conventions, and national rules and regulations relating to maritime transport, port and vessel activities, and maritime waste management. EPA and GMA are the regulatory authorities in-charge of marine and maritime pollution, respectively. GMA is in-charge of ship-source pollution, and holds the mandates relating to maritime safety and security, registration, survey, inspections and certification of ships, training and certification of seafarers, and maritime search and rescue. **GPHA**, on the other hand, is responsible for providing, maintaining, and regulating port facilities and offering pilotage and towage services. It is also responsible for the planning, development, operation, and regulation of Ghana's commercial seaports and fishing harbours, including the management of water pollution at all seaports. **GSA** provides negotiation services and related port shipping arrangements with shipping lines and ports for the benefit of shippers. The GMA, GPHA and GSA under MOT together hold distinct mandates relating to shipping and port activity in the country.

The Ministry of Energy (**MOE**) is the lead institution responsible for the supervision and coordination of all energy sector agencies, as well as the energy policy formulation, implementation, monitoring, and evaluation. **GNPC** is the national oil company representing the country's stake in all petroleum agreements and being engaged in hydrocarbon exploration and exploitation is subject to all applicable laws and regulations. The **Petroleum Commission** has the mandate to regulate the upstream petroleum sector in all territories of Ghana and is responsible for the sustainable management of petroleum resources without compromising the marine and maritime environment.

GBC under MLNR has the mandate to negotiate maritime boundaries as well as address issues related to the use of natural resources that straddle land and maritime boundaries. It works closely with the Ministry of Foreign Affairs and Regional Integration on transboundary issues.

Ghana Navy under the Ministry of Defence and the Ghana Maritime Police Unit (**MPU**) under the Ministry of Interior are in-charge respectively of safeguarding the sovereignty and territorial integrity of the nation, and tasked with maintaining law and order, preventing, and detecting crime, apprehending offenders, and maintaining public order and the safety of persons.

GHA under the **MWH** holds the mandate for programming and coordination of coastal protection works, construction and maintenance of storm drains countrywide, construction of sea defence mechanisms in erosion-prone areas, and the monitoring and evaluation of surface water bodies in respect of floods. It is anticipated that the HSD will soon be replaced

by the Ghana Hydrological Authority with the executive assent of the Ghana Hydrological Authority Bill 2022. **CODA** under the Ministry of Special Development Initiatives is mandated to accelerate economic and social development in coastal zones, including through coordination of development activities of key statutory institutions to avoid duplication of functions and empowerment of vulnerable groups in coastal zones.

NDPC is the national coordinating body of the decentralized national development planning system. NDPC coordinates the planning activities of the District Planning authorities, Regional Coordinating Councils and Ministries. Its responsibility includes making proposals for the protection of the natural and physical environment and providing recommendations to ensure the equitable development of the districts of Ghana covering ocean resources and the blue economy.

The National Disaster Management Organisation (**NADMO**) is the primary authority responsible for national disaster management, preparedness, and response in Ghana, and has thus far not been involved in discussions around the SOP. NADMO's mandate gives it a key function in ensuring climate-induced disaster risk preparedness are part of all national planning and programmes, including on ocean governance.

Implementing Mandates – Challenges

During the CNA process, numerous challenges related to clarifying institutional mandates were highlighted. For example, while the legal mandate relating to Marine Spatial Planning (MSP) is clear, a precise division of roles and responsibilities in operationalizing and implementation is lacking. The ongoing efforts related to establishing Marine Protected Areas (MPAs) do not specify which MDA should hold the legal mandate for gazetting such areas. There is conflicting understanding on mandates relating to MPAs between the EPA, GMA,[19] Fisheries Commission, Forestry Commission, and LUSPA. For better clarity, greater dialogue amongst relevant MDAs should be facilitated.

There is further confusion regarding the role of the GMA and the Petroleum Commission in the operationalization of the National Oil Spill Contingency Plan (NOSCP). The GMA considers that the full complement of its roles as contained in the Maritime Pollution Act 2016 are missing in the NOSCP.[20] As a result, the GMA anticipates challenges in terms of clarity of roles when coordinating with other agencies in actual spill situations.

Ghana has not formally adopted an Integrated Coastal Zone Management (ICZM) approach which could include spatial planning and enforcement capacities for protecting and managing coastal ecosystems. The environmental governance roles that would come under such an approach falls within the current mandates of the EPA, Fisheries Commission, and the Wildlife Division of the Forestry Commission.

These conflicts and lack of clarity in the institutional mandates need to be addressed and would benefit from the active engagement of senior leadership at MDA level. Government stakeholders have highlighted that dedicated resource allocation in medium-term plans could help address some of these institutional overlaps and redundancies.[21]

[19] Over and above the relevant mandates mentioned above for the EPA, Fisheries Commission, Forestry Commission and LUSPA, the GMA also has a stake in MSP in general as it is already establishing Areas to Be Avoided (ATBAs) and safety zones in Ghana's maritime jurisdiction. As per the Ghana Shipping (Protection of Offshore Operations and Assets) Regulations, 2012 (L.I. 2010), GMA may cause for an area to be gazetted as an Exclusion Zone in the interest of safety, or to protect the marine environment, among others. This mandate can therefore be extended to MPAs, depending on the location of such an area.

[20] Sections 185 and 186, Maritime Pollution Act, 2016 (Act 932).

[21] Discussions between high-level Panel members during the National Validation Meeting held in Accra on 19 March 2024.

B. Institutional capacities: Environment Directorate, EPA and LUSPA

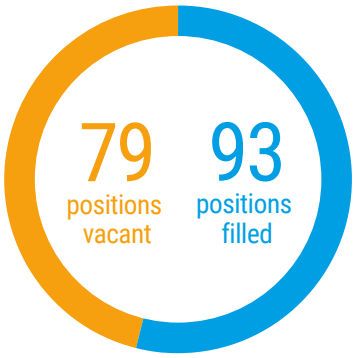
B1. Leadership and commitment

Ghana's membership at the High-Level Panel for Sustainable Ocean Economy and the ongoing SOP process under the Office of the President indicate high political commitment from leadership towards addressing the challenges related to ocean governance in the country. Given the importance and contribution of both the offshore energy sector and the fisheries sector to the Ghanaian economy, and the potential of coastal and marine tourism, there is significant commitment towards developing a sustainable blue economy.

The Environment Directorate (ED) at MESTI is presently prioritizing development of an integrated coastal and marine management policy. The EPA and the Environment Directorate have been actively involved in the technical working group formed under the SOP. LUSPA, with its latest relocation from the MESTI to MLGDRD, is also involved in the SOP process directly, and remains essential to the effective implementation of a sustainable ocean plan at the district local government levels in coastal areas.

At the local government level, there is, however, a need for concerted efforts to enhance political buy-in and public awareness on sustainable ocean governance. Local government engagement with local communities needs to be further strengthened (discussed further Section III.C).

Figure 4: Staff vacancies at the Ministry of Environment, Science, Technology, and Innovation in 2023.



B2. Human resources capacity

The CNA assessed the level of human resources capacity in terms of job positions filled and gender representation, as well as access to workspaces and sustained training programmes for continuous learning and up-skilling. At MESTI, only 93 of 172 positions (54%) have been filled. While there is a semblance of gender balance at the middle management level, this is not the case at the senior management level, where there remains a wide disparity, with male dominance.

The necessary number of personnel for Environment Directorate as per Civil Service (Ministries) Instrument, Executive Instrument (E.I 12) 2021 has not been filled. As of July 2023, of the 22 positions available at the Directorate, only 11 (50%) have been filled. Of these vacancies, the Chemicals and Waste Management Unit and the Environmental Convention Coordination Unit are currently unstaffed.[22] The staff vacancies, primarily at the middle managerial level, have created undue burden on the existing staff at the Environment Directorate.

Figure 5: Staff vacancies at the Environment Directorate in the Ministry of Environment, Science, Technology, and Innovation in 2023.

Given the staffing vacancies at the Environment Directorate, most staff hold multiple portfolios and are compelled to learn on the job. Furthermore, inter-ministerial transfers are the norm with five-year cycles. While hand-over notes are provided for new staff, with occasional informal mentor-mentee relationships, they are not necessarily given training, and as such, transfer of skills is not guaranteed. Regular work updates during staff meetings serve as important venues for gaining new knowledge, in lieu of formal training provision. In addition, office space is insufficient, and current staff is spread out across other departments. Such limitations in infrastructure and human resources also hinder the effective discharge of duties. While the Environment Directorate already has a Marine Resources Protection and Spatial Planning Unit, these broader institutional constraints will inevitably also limit the Unit's capacity to deliver on its functions under the SOP.

[22] Information provided by Environment Directorate during Fact-Finding Mission held in August 2023.

Figure 6: Institutional organogram of the MESTI.
(Source: MESTI Organizational Manual 2023)

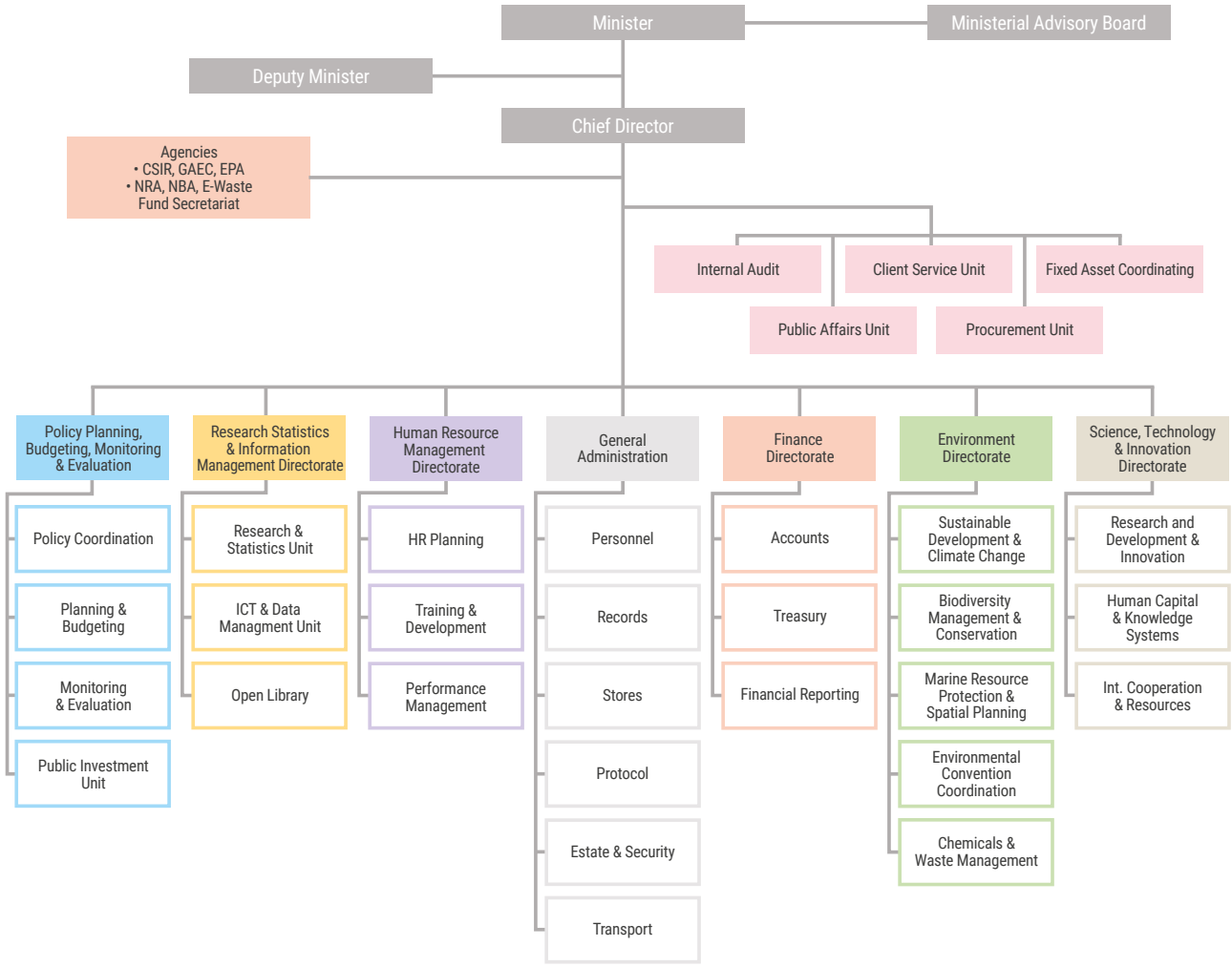
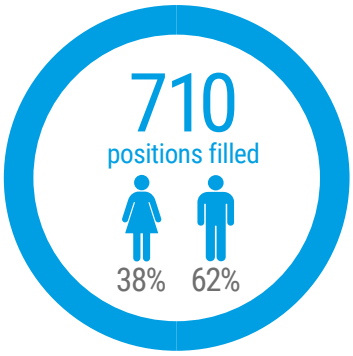


Figure 7: All staff positions have been filled at the Environmental Protection Agency as of 2023.



Existing staff positions at the EPA have been filled; the numbers have increased from 350 in 2019 to 710 in 2024. Gender representation has improved over time within the EPA, but senior management has remained consistently skewed in favour of men. When questioned the existing staff cited a quick turnover of staff, the advanced technical know-how required and overall fewer qualified applications from women as contributing to this gender imbalance. The current overall distribution in EPA is 38% women and 62% men.[23] The EPA is comprised of Operations, Technical Services and General Services Divisions. The Technical Division of the EPA in-charge of its regulatory functions has seven units: the Environmental Assessment and Audit Unit, the Intersectoral Networks Unit, the Environmental Education Unit, the Chemical Control and Management Unit, the Environmental Quality Unit, the Policy Planning, Monitoring, Evaluation and Research Unit, and the Climate Change and Ozone Unit.

[23] EPA response provided to follow-up questionnaires.

Should additional functions be assigned to the EPA, which expand their legal mandates to include energy transition or marine and coastal protection, the authority will require a degree of restructuring – from combining existing units to potentially opening more full-time staff positions. They currently have 18 Regional Offices and 11 area offices. It has an area office in Ellembelle for oil and gas activities and has a regional office at Tarkwa which focuses primarily on mining activities.

Amongst the existing EPA staff, there is limited technical knowledge on ocean science and ocean technology. A more comprehensive internal staff capacity assessment would be required of all EPA employees to determine their current capacities to adequately fulfil anticipated roles under the SOP.

Figure 8: Staff vacancies at the Land Use and Spatial Planning Authority in 2023.

As per the document entitled, 'Creation of Job Titles for Migration of Staff of the Land Use and Spatial Planning Authority onto the New Scheme of Service of the Authority's Single Spine Grade Structure', approved by the Public Services Commission of Ghana, LUSPA has 3,003 staff positions and not all of these are filled. It currently has 11.5% of job positions filled with a total of 346 staff members (Figure 8), of whom 76% are men and 24% women.

LUSPA does not, however, consider these vacancies as hindering its ability to fulfil its spatial planning mandate and related responsibilities that may be assigned to it under the SOP.[24] Nevertheless, the staff could benefit from knowledge and skills training to address immediate as well as long-term capacity needs.[25] LUSPA only receives infrequent trainings, and training with a focus on coastal and marine issues remain relatively uncommon.

The Environment Directorate and EPA have previously participated in donor-funded training initiatives for its staff that included components related to marine issues. However, neither the Environment Directorate nor the EPA have established institutional policies or systems of their own for sustained in-house capacity building. The Environment Directorate conducts annual assessments of the capacity needs of its personnel, but these evaluations follow a predefined format and may not accurately reflect the priority capacity development requirements of the institution.

B3. Budgetary resources

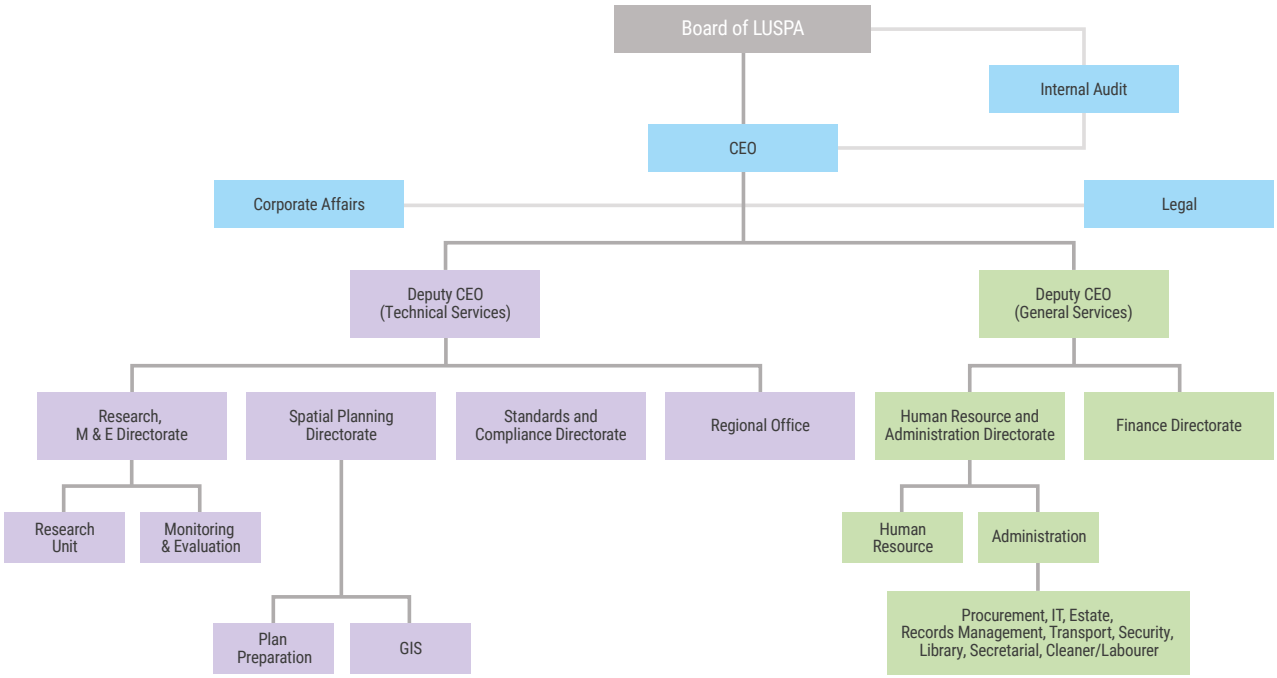
The CNA further assessed the nature and level of budgetary resources to implement respective institutional mandates. MESTI is funded through the annual budget released by the Ministry of Finance. Only 8% of the MESTI's budget is allocated to the Environment Directorate for implementation of its functions. These budgetary constraints are most felt in day-to-day operations, such as electricity, paper, toner, ink, etc. MESTI is, therefore, heavily reliant on external partners for supporting capacity building activities. In many cases, trainings offered by external partners do not necessarily reflect the Environment Directorate's prioritized needs and may not always cover the full extent of capacity training needs of the MESTI.

The EPA currently funds all its activities, including staff renumeration, from its own Internally Generated Funds (IGF) from payments received on permits and licenses. The Government does not support its activities with funding; hence, there is no budgetary allocation from the Government to the Agency. Nevertheless, the EPA being a government institution can only recruit staff with Government approval. The EPA determines the number of the staff needed

[24] Based on bilateral consultations with LUSPA personnel.

[25] LUSPA response provided to follow-up questionnaires.

Figure 9: Institutional organogram of Land Use and Spatial Planning Authority.
(Source: LUSPA 2023)



through its Governing Board. The jump in total staff numbers from 2019 to 2024 has taken a great toll on the EPA's finances. Given the limited financial resources, the EPA is not creating any new staff positions but instead seeks to re-train and up-skill existing staff to meet whatever capacity gaps it identifies.

In contrast, the LUSPA is fully funded through the annual budget released by the Ministry of Finance to the Ministry of Local Government, Decentralisation and Rural Development (Ghana, Ministry of Finance 2023).

UNEP also examined current and potential sources of external development funding channelled towards environmental governance and management in Ghana. However, it is notable that the United Nations Sustainable Development Cooperation Framework (UNSDCF 2023 – 2025) and Ghana's Coordinated Programme for Economic and Social Development Policies 2021 – 2025, Agenda for Jobs II: Creating Prosperity and Equal Opportunities for All (CP ESDP 2021 – 2025) both acknowledge the need to shift the focus and efforts from external development assistance funding to Government self-financing (Government of Ghana 2021; United Nations Ghana 2023).

Annex 6 to this report highlights innovative projects implemented by the other Ocean Panel members such as Chile, Fiji, Indonesia, Jamaica, and Seychelles, as well as the Philippines and Costa Rica, that facilitate marine governance and ocean planning, and the financial partners involved in such initiatives. **Annex 7** provides a list of external development partners in Ghana by identifying the ongoing and completed projects that address environmental and ocean governance concerns.

Institutional Coordination Mechanism

The UNEP CNA framework identifies institutional coordination across Ministries, Departments and Agencies, as well as the sub-national/district levels, as an important capacity area for strengthening sustainable ocean governance.

Currently, no single institution holds the leading mandate on ocean governance in Ghana.

A. Existing inter-institutional linkages on coastal and marine issues

While there are existing coordination structures on issues related to marine conservation, marine pollution, fisheries, maritime security, etc.; they are siloed and fragmented. Currently, no single institution holds the leading mandate on ocean governance in Ghana. The existing inter-ministerial coordination structures often focus on specific issues depending on the funding source interests. Most of these coordinating structures in place have a steering committee (comprised of relevant line ministries) and a technical committee (comprised of relevant implementing agencies).

Additional challenges to institutional coordination include frequent reconstitution of institutional structures in Ghana, both in terms of establishment and ministerial location. Ghana has seen several significant institutional reorganizations during changes at central government level. This challenge is felt more within ministries, while causing relatively less institutional shake up within regulatory agencies.

Current efforts towards institutional coordination

Despite the above-mentioned challenges, there are positive efforts towards enhancing coordination. Since the 2008 Public Sector Reforms, any MESTI implemented project is mandated to have EPA representation in its steering committee. The Chief Director of the MESTI or the Director of the Environment Directorate (ED) sits on the EPA Advisory Board. The Environment Directorate and EPA also collaborate in the development of funding proposals.

The EPA's implementation mandates include stakeholder collaboration, coordination with lead agencies which have environmentally relevant mandates, as well as monitoring compliance on regulations, standards, and guidelines. The EPA has regional offices and representatives in local government planning and development committees.

The Petroleum Commission also coordinates regularly with the EPA on environmental monitoring of the oil and gas sector. The GMA is also involved in regular oil and gas developer/operator meetings convened by the EPA.

The GMA, EPA, Fisheries Commission, GPHA and the Ghana Navy all coordinate on regulation and monitoring of activities from ports to high seas and during ESIA processes. The GMA works with the Ghana Navy and the Fisheries Commission to monitor fishing vessels that encroach into the safety zones established around floating production, storage and offloading facilities (FPSOs) oil and gas installations and to also prevent illegal, unreported, and unregulated fishing activities. The National Maritime Security Committee is housed at the GMA.

The GMA also operates a Vessel Traffic Management Information System (VTMIS) which is a Maritime Domain Awareness tool for coastal surveillance. Eight government agencies including the GPHA, Ghana Navy, Fisheries Commission, Marine Police, Narcotics Control Commission, National Security, Ghana Immigrations Service, Customs of the Ghana Revenue Authority, and the Volta Lake Transport Company have monitoring stations that are connected to the VTMIS for access to real time maritime information. The tool enables these institutions to coordinate and share information to combat maritime security and safety related threats.

In furtherance of its development policy coordination role, NDPC conducts orientations and briefings for Chief Directors of MDAs on policy planning, research, and monitoring and evaluation. Mainstreaming efforts on gender, climate change and decentralisation are monitored for effective implementation by the NDPC. This function is critical when such governance approaches are still policy-based and enabling and implementing legislation are yet to be put in place.

The Ghana Statistical Services (GSS) as the central statistical agency in Ghana which produces and disseminates official statistics, has a coordination role in data collection.

District authorities in turn coordinate with the central agencies such as the EPA, Fisheries Commission, GMA, CODA, MOFA, LUSPA, NDPC as well as with non-governmental actors such as the canoe and fishermen associations.

Coordination under the Sustainable Ocean Plan

In the absence of a formalized coordination structure on ocean governance, the ongoing SOP process under the Office of the President provides the only existing platform that deals with most aspects of oceans governance. The SOP technical working group focuses on issues relating to maritime security, marine fisheries, marine transport, sustainable marine tourism, climate change resilience and adaptation, and ecosystem degradation. The key functions of the SOP technical working group are to:

- Provide strategic guidance to the SOP partners and consultants to manage the project activities based on the project's annual work plan.
- Ensure that the project is aligned with national priorities, ongoing and/or planned initiatives:
- Ensure there is institutional support from each participating entity to efficiently achieve project objectives.
- Review and endorse the detailed annual work plan of project outputs and activities.
- Assess progress in the implementation of project activities in connection with the adopted work plans.
- Provide advice on corrective actions required in case of deviation in the actual project performance and work plans.
- Address coordination and political challenges that present obstacles to the project progress and require high-level intervention; and
- Aggregate and disseminate information on SOP for increased public awareness on ocean-related issues.[26]

[26] Terms of Reference of the Sustainable Oceans Planning Working Group provided by the SDG Advisory Unit, Office of the President during the Fact-Finding Mission in August 2023.

Once the first sustainable oceans plan is developed by the SOP Technical Working Group, the coordination functions carried by it will need to be formalized and institutionalised into a national coordination mechanism that is also in charge of the SOP implementation. The SOP regional consultations held in June 2023 were perceived as being effective in engaging communities on misperceptions related to sargassum and oil and gas activities.[27]

Regular formal mechanisms should be established to address potential resource use and access conflicts between sectors in the coastal and marine environment. Other countries have followed varying mechanisms and institutional structures to coordinate their activities on matters relating to oceans governance, which may provide some guidance for Ghana. For instance, among the Oceans Panel countries:

- Indonesia has a distinct Coordinating Ministry for Maritime Affairs and Investment, over and above the Ministry of Marine Affairs and Fisheries, which has the mandate to oversee and coordinate maritime affairs, including ocean governance, marine resources management, and maritime development initiatives.[28]
- In Norway, this coordination is undertaken through a steering committee which is composed of all relevant ministries, led by the Ministry of Climate and Environment.
- The United States of America passed a legislation in 2021 formalizing its Ocean Policy Committee (previously the National Oceans Council) as the permanent interagency coordination body on ocean and coastal priorities related to science and management.

B. The benefits of collaboration with academic/research organizations

Ghana has rich academic capabilities in oceans governance issues which help address the technical knowledge gaps in the MDAs. University faculty are regularly engaged in and provide expertise during stakeholder consultative exercises with Government institutions on issues related to the coastal and marine environment. Ghana also has private consultants and national consultancy companies who work on EIAs and compliance monitoring in relation to pollution issues, waste management, marine litter, and coastal and marine conservation. They have adequate knowledge of environmental issues related to coastal and offshore development sectors (e.g., offshore oil and gas, fisheries, shipping, and tourism industries).[29]

Ghana has rich academic capabilities in oceans governance issues which help address the technical knowledge gaps in the MDAs.

The University of Ghana, the Regional Maritime University, and the University of Cape Coast, are among the key academic institutions that provide professional courses related to environment management and governance in the coastal and marine environment. Meanwhile, the University of Ghana, Marine and Fisheries Department offers Bachelor, Master and PhD courses and undertakes research on the physical, biological, geological, and chemical dynamics of marine and aquatic ecosystems for effective and sustainable utilization of Ghana's aquatic resources. The UNDOALOS Oceans Governance Study referenced in this CNA report was developed under the Oceans Governance Research and Development Project by the University of Ghana, School of Law.

[27] The increased inflow of sargassum weed coincided with the start of oil and gas activities off the Ghanaian shore. For this reason, there is a misperception among the local communities that fault the offshore oil and gas sector with the sargassum problem. Consultations with district stakeholders and community groups also revealed that decreased fish catches were seen to be a result of lights from oil rigs attracting all available fish. Combined with the prohibition on fishing near oil rigs, the fishing communities view the oil and gas sector as being detrimental to their livelihood.

[28] Under Article 4 of Peraturan Presiden Nomor 92 Tahun 2019 tentang Kementerian Koordinator Bidang Kemaritiman dan Investasi, the Coordinating Ministry for Maritime Affairs and Investment coordinates: a. Ministry of Energy and Mineral Resources; b. Ministry of Public Works and Housing; c. Ministry of Transportation; d. Ministry of Environment and Forestry; e. Marine and Fisheries Ministry; f. Ministry of Tourism and Creative Economy/Tourism and Creative Economy Agency; g. Capital Investment Coordinating Board; and h. Other agencies deemed necessary (Government of Indonesia 2019).

[29] Responses provided by EPA, LUSPA, PC and GMA to detailed capacity needs assessment checklist. For more details refer to Annex 3.

Academia can play a leading role in training government policymakers and technical staff in regulatory agencies.

The Regional Maritime University (RMU) in Accra was established for tertiary education and training on maritime issues and was set up jointly by Cameroon, Gambia, Ghana, Liberia, and Sierra Leone. RMU is a private university jointly owned by the five member nations with the objective to promote regional co-operation in the maritime industry focusing on trainings to ensure the sustained growth and development of the industry.

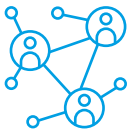
The Department of Fisheries and Aquatic Sciences at the University of Cape Coast set up a Centre for Coastal Management in 2013, which in 2018 became an African Centre for Excellence in Coastal Resilience (ACECoR). The Centre provides masters courses on coastal engineering, disaster risk management and migration, Blue Economy Governance and Social Resilience and marine meteorology. It currently has 120 postgraduate, 30 PhD and 19 masters' students. A proposal to transform the Centre of Excellence into an Africa Oceans Institute has also been submitted to the World Bank. If approved, the African Oceans Institute would include the Centre for Coastal Management, the Department of Fisheries, as well as a Centre for Marine Governance, which is yet to be established.

Academia can play a leading role in the sustainable training of government policymakers and technical staff in regulatory agencies. For instance, the University of Ghana organized a training program for public sector officials in 2022, which included 35 participants from MDAs such as the GNPC, Petroleum Commission, GMA, and the Ghana Borders Commission. The two-day program covered topics such as delineation, fisheries, and marine ecology. A follow-up training session scheduled for Q4 2023 will encompass a larger group of participants and address issues related to maritime security and piracy. Similarly, the ACECoR has developed professional five-day short courses for government agencies on Integrated Coastal Zone Management (ICZM), fisheries management, multiple stressors in marine management, GIS in MSP, and climate change adaptation, with 400 professionals trained across West Africa. The ACECoR has also received request from the West African Coastal Areas Management (WACA) and the United Kingdom Oceans Country Partnership for development of other short courses, with a course on marine litter currently under discussion. The ACECoR has established the Fisheries and Coastal Management database of Ghana (FishCoM Ghana) as a data hub that seeks to acquire and archive data on Ghana's coastal resources and their management. It enables data access for researchers, fisheries managers, and policy makers, as well as promotes exchange of information between universities, government agencies and local and international non-governmental organisations.

Ghana has also benefited from collaborative marine scientific research efforts conducted aboard the research vessel *Dr Fridtjof Nansen*, owned by the Government of Norway, and presently engaged in the FAO EAF-Nansen Project. This initiative has provided substantial capacity development in fishery research and management for personnel from various institutions, including the Fisheries Commission, the Environmental Protection Agency, and academic institutions like the University of Cape Coast and the University of Ghana. Moreover, from 2009 to 2012, this collaborative effort collected essential baseline fishery and environmental data within Ghana's waters, preceding the commencement of commercial oil production.

The Centre for Maritime Law and Security Africa, an independent non-profit entity situated in Accra, works on effective national and regional policy responses to ocean governance and maritime security issues in close cooperation with relevant ministries, departments, and agencies in Ghana but also across the sub-region.[30]

[30] The Centre for Maritime Law and Security Africa was founded in 2014 to foster effective national and regional policy responses to ocean governance and maritime security issues in Africa.



Enhancing collaboration between academic institutions, government agencies, and international organizations is essential to ensure a comprehensive approach to marine research and governance.

The key regulators such as the EPA, LUSPA, GMA and the Petroleum Commission consider the courses available in Ghana through its universities as adequate, covering topics related to marine science, biodiversity conservation, marine and coastal environmental protection and governance, and fisheries management.[31] Nevertheless, the short courses developed by academic institutions are not necessarily tailored to the specific training needs of relevant government agencies; instead, they are developed as per the priorities of the academic institution and are driven by donor funding. This poses a challenge to academia's capacity to address the expressed training needs of such MDAs. Furthermore, despite the collaborative marine research efforts, government stakeholders emphasize the need for more dedicated marine research facilities focusing on sustainable oceans and marine ecosystems research that are not reliant on external or donor funding support.[32]

Enhancing collaboration between academic institutions, government agencies, and international organizations is essential to ensure a comprehensive approach to marine research and governance. By fostering stronger partnerships, these entities can pool their resources, expertise, and knowledge, leading to more effective and coordinated efforts in addressing marine and coastal issues. Such collaboration can facilitate data sharing, joint research projects, and the development of integrated management strategies.

C. Interlinkages with traditional structures

The implementation of legal, policy, and institutional measures for strengthened governance must actively include strategies to support the meaningful participation of all stakeholders, particularly the most marginalized. The CNA examined the engagement of non-government stakeholders in coastal and oceans management and governance, particularly the role of civil society, community management structures and community-based representatives, including women's associations, in decision making processes.

Ghana has robust traditional structures that govern issues related to fisheries and conservation such as the chief fishermen, fish market queen, fish mummy or chairman or headman in the case of inland fisheries, and river priest or others with traditional jurisdiction over mangroves or wetland areas.

Associations such as the Ghana National Canoe Fishermen's Council, the National Inshore Fishermen's Association, and the National Fish Processors and Traders Association (a group largely made up of women) are integral to the Fisheries Commission's community-based management approach under the 2020 Co-Management Policy for the Fisheries Sector. The Landing Beach Committees are responsible for managing pre-mix fuel sales and distribution.

The recently passed Wildlife Resources Management Act 2023 is another example of community-led management being formalised into law. The Act amends and streamlines all legislation associated with wildlife and protected areas and establishes a legal framework to empower local communities in wildlife management by introducing Community Resource Management Areas (CREMAs), including in wetland areas. Furthermore, any arrest made by the Wildlife Division-Forestry Commission requires prior permission of the traditional leaders. The CREMA has been seen as a successful approach in enforcement of conservation measures in the coastal areas.[33]

[31] **Annex 8** to the report includes a non-exhaustive list of the available relevant courses in the Ghanaian institutions.

[32] Responses provided by EPA, LUSPA, PC and GMA to detailed capacity needs assessment checklist. For more details refer to Annex 3.

[33] Between 2021 and 2022, the Coastal Marine Conservation Drive Project (COMADRIP) aimed to formulate an MPA implementation strategy for the broader Cape Three Points region, intending it to serve as a model for Ghana's national coastal conservation areas initiative. Notably, the project utilized the Community Resource Management Areas (CREMAs), traditionally associated with forestry management, to facilitate its implementation, garnering positive reception. The project was coordinated by the Centre for Coastal Management (the Africa Centre of Excellence in Coastal Resilience) at the University of Cape Coast, Ghana, in collaboration with EPA, the Forestry Commission, and Hen Mpoano. (University of Cape Coast 2021)

The Fisheries Management Plan 2022-2026 formalises the role traditional structures can play in the sustainable management of resources. It envisages a Technical Advisory Committee, comprised of the Fisheries Commission, EPA, LUSPA, Ghana National Canoe Fishermen Council, University of Ghana's Department of Marine and Fisheries Sciences, and Hen Mpoano (an NGO), to develop and implement MPAs in Ghana, particularly in the context of small pelagic fisheries. The Committee will also engage with policymakers and regulators to advocate for political commitment towards the establishment of MPAs; provide support during stakeholder consultations and validation processes to inform decision-making on the establishment and operation of MPAs; and support capacity-building activities for the planning, establishment, and implementation of MPAs.

The existing policies and institutional measures in place encourage and require the participation of traditional and local communities, and civil society in consultative processes. This, as evidenced above, also extends to consultations/decision-making processes related to environmental issues in the coastal and marine space. However, despite the access to formal grievance redressal mechanisms, there remains a need to strengthen consultative engagements between local communities and district authorities. Fishing communities have raised the issue of poor coordination with local government/district assemblies. For instance, local communities cited how beachside areas were being licensed to businesses without due consideration by the district assembly for environmental coastal protection.[34]

Awareness campaigns for fishing communities to encourage community-based management have been undertaken by the Fisheries Commission in collaboration with the EPA and Petroleum Commission on exclusion zones around oil platforms. Such awareness campaigns, however, have thus far focused on the western districts alone and have not taken into consideration the seasonal fisheries migration from Central regions into Western regions. These campaigns should be expanded to include seasonal migration and utilize media, digital channels, and social media to engage a wider audience.

The formalized roles of traditional structures and community associations in the Fisheries Management Plan and the Wildlife Resources Management Act helps contribute towards the enhancement of community-based management and conservation efforts.

Field visit to the Ghanaian coastal region 2018.
© UNEP/Marisol Estrella

[34] Stakeholder inputs received from local fishing communities during the fact-finding mission undertaken in August 2023.

IV Capacity Assessment in Thematic Focus Areas

To provide more context to the seven capacity areas outlined in the CNA methodology, UNEP also examined three related thematic areas that better understand the in-depth capacity challenges faced by stakeholders when addressing sustainable oceans governance in Ghana.

A. Ecosystem and biodiversity data management to support coastal and ocean governance.

The continental shelf of Ghana is relatively narrow, 24 – 85 km, and most of the EEZ (Exclusive Economic Zone) is in deep waters. The Guinea Current Large Marine Ecosystem (GCLME), one of the largest marine upwelling systems on the planet, characterizes the coastal and marine ecosystems from Angola in the south to Guinea Bissau in the north, illustrating the need for a transboundary approach in coastal and marine planning and management (Figure 10).

Figure 10: Coastal and Equatorial currents off the Ghanaian Coast.

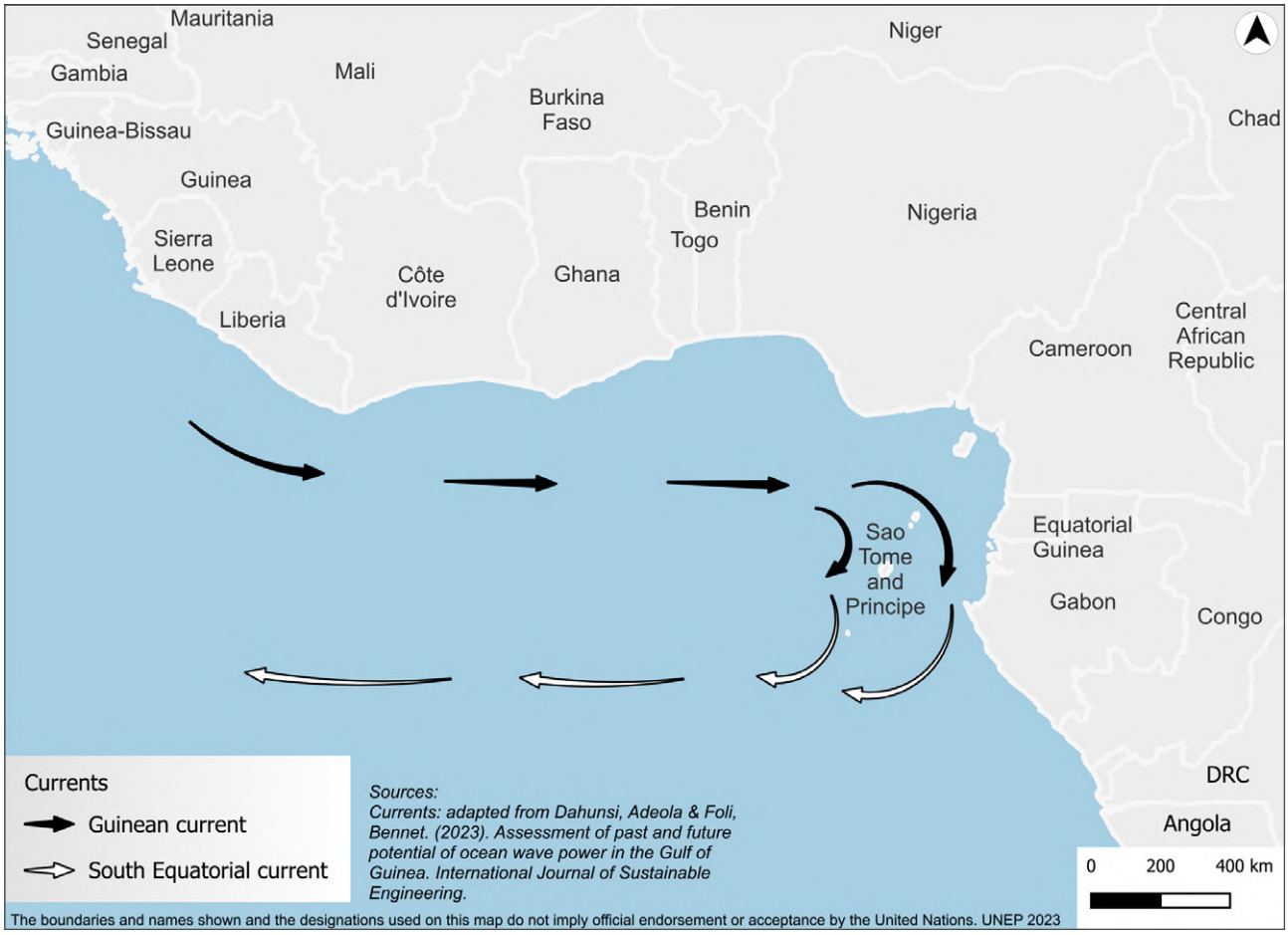
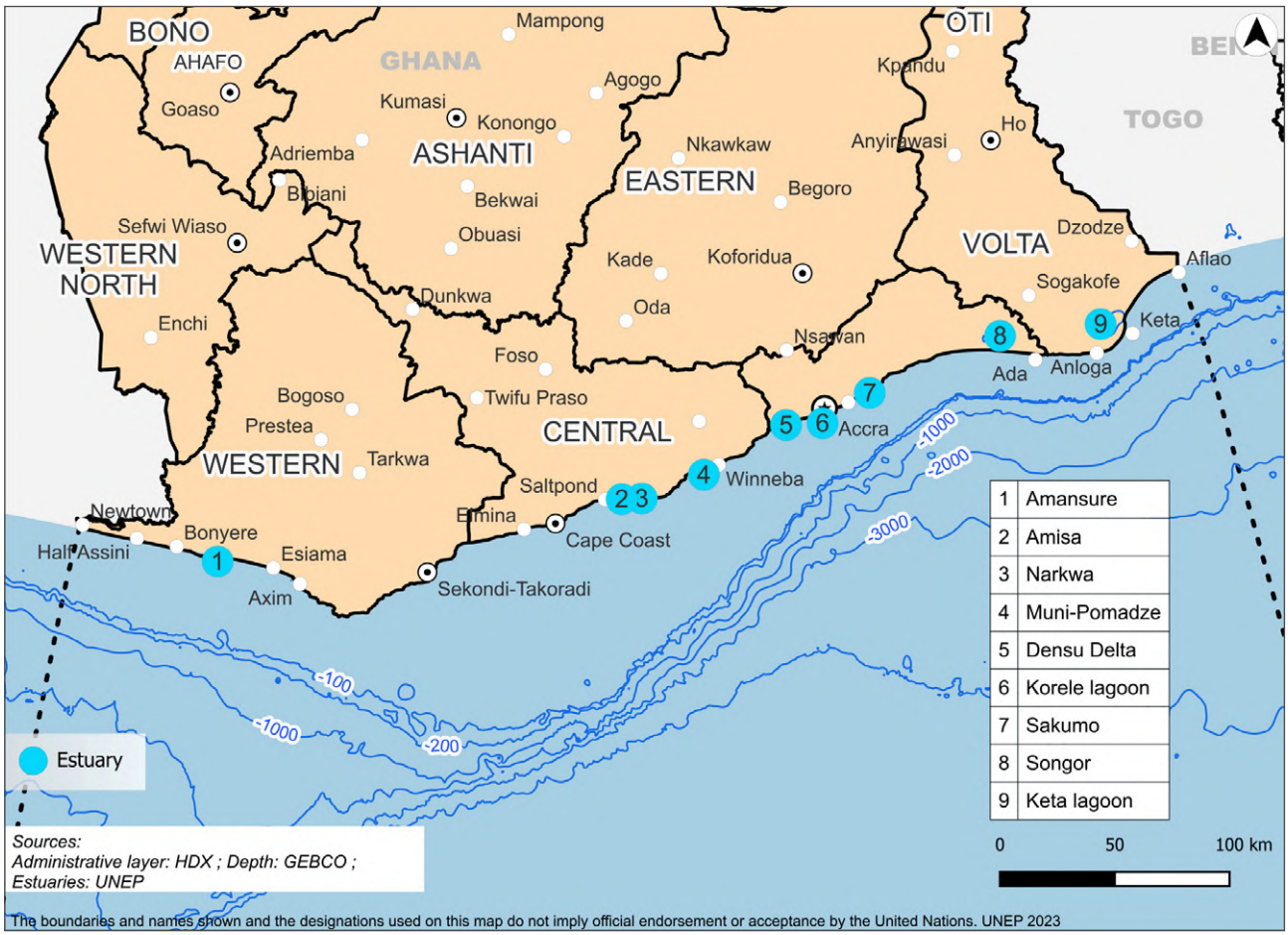


Figure 11: Coastal estuaries, lagoons, and river deltas in Ghana.[35]



Two periods of upwelling typically occur each year along the coast of Ghana. These upwellings brings nutrients from deep waters to the surface and thereby trigger primary production upon which the higher trophic levels (such as fish) depend. The extent of these upwellings, i.e., the volume of water and the concentrations of nutrients, depends on ocean currents which are influenced by climatic and weather conditions and may vary significantly from year to year. To be able to forecast aspects such as stocks of pelagic fish, data on nutrient levels and hydrographic parameters such as temperatures must be known (McGlade 2002).

Due to the upwelling, Ghana's coastal waters supports large stocks of mainly pelagic species, and fish has traditionally been the most important source of animal protein for the population in the country.

The ecosystems of Ghana's coastal and offshore areas are rich in biodiversity and are relatively productive. Examples of such ecosystems in coastal areas are wetlands including estuaries, lagoons, river deltas and shallow coastal waters. Many of the fish and shellfish species that are of importance for the artisanal and commercial fisheries depend on the coastal ecosystems as spawning grounds and as nurseries for younger stages. The coastal wetlands of Ghana include Amansure, Amisa, Densu delta, Keta lagoon, Korele, Muni-Pomadze, Narkwa, Sakumo, and Songor (Figure 11).

[35] The coastal wetlands of significance in Ghana are indicated as 1 - Amansure, 2- Amisa, 3- Narkwa, 4 - Muni-Pomadze, 5- Densu delta, 6- Korele, 7 - Sakumo, 8 - Songor, and 9 - Keta lagoon.

To be able to successfully manage human activities along coasts and offshore, the status and changes in key environmental parameters should be known. Without sufficient data, environmental management will be challenged and more likely be ineffective. Ocean data on key physical and chemical parameters also allow countries to better understand the state of the marine ecosystem and its productivity. Such information is necessary to be able to determine the fishing effort and forecast the state of the environment.

Long-term ocean data gathering plays a crucial role in enhancing the understanding of weather and climate variability. In addition, it contributes to forecasting the state of the environment, assessing productivity potential, and identifying environmental hazards affecting coastal areas.

A1. Environmental data availability, infrastructure and access

In Ghana, the data relevant to coastal and marine environmental management and governance is held by various governmental and non-governmental institutions.

The EPA holds environmental data on ecosystems, environmental quality, air emissions, and water quality. An Environmental Information Network (EIN) is being developed at the EPA in partnership with the Norwegian Environmental Agency and UNEP–World Conservation Monitoring Centre (UNEP-WCMC), under the cooperation framework between Ghana and Norway's OfD Programme. The EIN seeks to promote the collection and sharing of spatial data between relevant institutions that generate and use spatial data. This would support the broader community of spatial data users, including university students, and would enable the EPA to generate the State of the Environment report for the country as well as contribute to the Africa Environment Outlook. The EPA serves as the Secretariat of the EIN, which includes the Ghana National Petroleum Corporation (GNPC), the Council for Scientific and Industrial Research (CSIR), Ghana Geological Survey Authority (GGSA), GHA, Ghana Grid Company, National Disaster Management Organisation (NADMO), Volta River Authority (VRA), Ghana Statistical Services (GSS), Ghana Water Limited (GWL), and Lands Commission.

The EPA also holds the national baseline data on overall methane emissions in the country, including a national GHG inventory for the oil and gas sector. Furthermore, MESTI and the EPA have developed a multi-sector monitoring, reporting and verification (MRV) system, known as the Ghana Climate Ambitious Reporting Programme, that can be used for NDC reporting on the GHG emissions data held by public institutions and private entities (International Partnership on Mitigation and MRV 2015). Emissions from Ghana's oil and gas sector are recorded onto this MRV system.

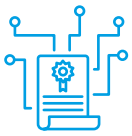
The EPA also has an environmental sensitivity atlas for its coastal zones and released the State of Marine Environment report for four communities in the Western Coast of Ghana in 2022. The environmental sensitivity atlas, developed in collaboration with the NEA and the UNEP-WCMC starting in 2020, incorporates both ecological and socio-economic assets and provides information on sensitivity to oil spill within the coastal area. It will support the Ghana National Oil Spill Contingency Plan, but it will also need to be further tailored for application for oil spill preparedness and response. The environmental sensitivity atlas also included significant contributions from the Ghana Oil and Gas for Inclusive Growth (GOGIG) programme.

LUSPA has its own spatial data and also has access to other data necessary for exercising and implementing its mandate on land use spatial planning. Data on eco-sensitive areas used by the LUSPA is sourced from the EPA and Universities.

Biodiversity data is primarily held by the Forestry Commission as well as by the University of Ghana. In order to consolidate all the available biodiversity data, the University of Ghana conducted stakeholder consultations through the CONNECT project under the Building Stronger Universities in Developing Countries (BSU) initiative.

For data on marine plastic pollution, the Ghana Statistical Service (GSS) in collaboration with the EPA and CSOs, used existing citizen science data through a three-phased data validation process to integrate them into Ghana's official statistics on marine plastics. This data was then used by Ghana in its 2022 Voluntary National Review for the SDGs and was also added to the UN SDG Global Database as data validated by the country (Fraisl *et al*. 2023).

Furthermore, the ACECoR at the University of Cape Coast is developing a One Ocean Hub for all ocean-related data in Ghana. Discussions are ongoing on whether the EPA can host this data hub.[36] As previously mentioned in Chapter 3.B, ACECoR has already developed FishCoM Ghana as a data hub for Ghana's coastal resources and their management, and essential fishery and environmental data within Ghana's waters were collected by the Norwegian Research Vessel *Dr Fridtjof Nansen*.



The multiple data generation platforms managed by different institutions are not well connected, and the roles and responsibilities are therefore fragmented.

Other available sources of ocean data include the Ocean Data and Information Network for Africa (ODINAFRICA) and the ODINAFRICA Marine Atlas which bring together marine related institutions from 25 Member States (including Ghana) of the Intergovernmental Oceanographic Commission of UNESCO from Africa. They can provide historical oceanographic data and may be considered for inclusion in the EIN or the One Ocean Hub (Intergovernmental Oceanographic Commission 2007a; Intergovernmental Oceanographic Commission 2007b). There are also ongoing efforts to collect environmental baseline data on traditional and indigenous knowledge, including know-how from artisanal fishers.[37]

The multiple data generation platforms managed by different institutions are not well connected, and the roles and responsibilities are therefore fragmented. Lack of interoperability and standardization of data collection and curation processes compromises data quality (NEA and UNEP-WCMC 2024). Given the multiplicity of databases and data management systems in existence in Ghana, there is a clear need for improved flow of information between MDAs.

Data sharing is also challenged due to the proprietary nature of the data. Privately held data is not often made publicly accessible, as the sale of such data is used to generate revenue for institutional functioning.[38]The lack of sufficient funding and sustained financing poses an additional challenge to ensuring a functional national data monitoring, reporting and verification system (World Bank Group 2022).

Better flows of information into policy processes can be achieved by developing data platforms and refining data analysis methods and systems (NEA and UNEP-WCMC 2024). Enhanced connectivity and coordination among multiple data generation platforms managed by different institutions can help streamline the fragmentation of roles and responsibilities. To address some of these challenges, UNEP-WCMC has an ongoing collaboration with NEA to better understand the process of data sharing in the public sector in Ghana. Developing and adhering to best practices in data sharing contributes to a more efficient and widespread use of relevant information (NEA and UNEP-WCMC 2024).

[36] Information received during consultations with the African Centre for Excellence in Coastal Resilience (ACECoR) during the fact-finding visit in August 2023.

[37] Responses provided by EPA, LUSPA, and GMA to detailed capacity needs assessment checklist. For more details refer to Annex 3.

[38] Additionally, control of biodiversity data has often been seen as something that confers power, translating into actionable insights for an organization. Sharing data freely and in a centralized way still happens rarely in Ghana. This perpetuates the selling and buying cycle between data users and providers. Collaboration rather than competition between organisations should be encouraged to promote sustainable financing and reduce uncoordinated efforts (NEA and UNEP-WCMC 2024).

A2. Data management to support oceans governance and environmental monitoring.

Data collection structures and mechanisms to inform evidence-based policy making is a national priority that has come up in the UNSDCF agreed between the UN in Ghana and the Government of Ghana. This is also an issue identified in Ghana's 2022 Voluntary National Review report on SDG progress of implementation. In addition to data availability and accessibility to end users, strong environmental data management is also dependent on the capacity of end users to work with the datasets, utilize and benefit from the information, and the means and mechanisms to update it as new data become available.

The functions relevant to environmental data management sit primarily with the EPA under MESTI. In addition to EPA staff at the Accra offices, the EPA has a large number of technical staff across its 18 regional offices who manage specific sectors. Capacity building training are provided to these regional officers on a needs basis. However, due to the limited funding available, specialised trainings on environmental data management are primarily aimed at the EPA staff at the central offices, and less so at sub-national and district levels.

Under the OfD programme, trainings have been provided to the EPA headquarter staff by the NEA and UNEP-WCMC on environmental data management, EIN administration, use of drones in field operations for data collection, analysis of drone imagery, using GIS tools for analysis, working with sensitivity atlases, and informational technology infrastructure.

LUSPA has full-time staff and in-house Government capacity for undertaking environmental data collection and management, and data infrastructure maintenance and software upgrades. The staff undergoes training on data collection, analysis, interpretation, storing, recording, and privacy methods and processes; such trainings are, however, considered infrequent by staff. Given the high-level of staff vacancies at LUSPA, the adequacy of existing capacities for environmental data management is questionable.[39]

Although available data from occasional academic research projects and surveys in Ghana are valuable and may be used in management decisions, their frequency and coverage are irregular. They are also often externally funded and do not always provide information that is relevant or needed for establishing a national database on the status of the marine environment, stocks of fish, etc.

In this context, Ghana may consider establishing its own national marine monitoring program, regularly collecting data on key parameters of importance for determining the state of the marine environment, which includes a capacity building component for the institutions involved. Given the nature of the GCMLE off the Ghanaian coast, a transboundary approach in management of coastal and marine data will also be necessary. Data sharing capacity in biodiversity information handling is also crucial.

The techniques for collecting ocean data have developed dramatically in the last few decades. It is today possible to gather more oceanographic data at much lower cost, for example using information from satellites and drones. Parameters that can be measured from satellites and drones include, for example bathymetry, circulation and current patterns, temperature, ocean colour which can be used to assess chlorophyll-a and thereby productivity, suspended matter, pH, and concentration of CO_2 etc. (Ryabinin *et al*. 2019). Direct sampling in the sea, for example, for the monitoring of pollution levels in biota and bottom sediment, however, still requires vessels, sampling equipment and trained personnel.

[39] See Chapter 2. B2.

B. Environmental management in coastal and marine areas

In Ghana, the key development sectors such as fisheries, oil and gas, tourism, and maritime shipping, occupy the Ghanaian coastal and marine environment, which are dependent over the long-term on healthy, well-managed coastal and marine biodiversity and ecosystems to sustain socio-economic activities (Figure 12). Invariably, there are multi-sectoral interactions in this shared resource as evidenced below.

Ghana's **fisheries resources** have been heavily overharvested in the last decades, due to over intensive fishing by industrial trawlers, both by national and foreign fleets, as well as by national commercial and artisanal fishers (Figure 13). Catches of important species such as sardinella, anchovy and mackerel have decreased or showed drastic variations. Women engaged in fishing-related activities such as fish mongering, processing, and trading have been affected by the general decrease in fish catch.

Ghana's fisheries resources have been heavily overharvested in the last decades, due to over intensive fishing by industrial trawlers, both by national and foreign fleets, as well as by national commercial and artisanal fishers.

Various illegal and destructive fishing methods still appear to be used. In the western coast of Ghana, the capture of dolphins and sharks is proliferating. Fishers have a ready market for the dolphins and sharks, thus motivating their capture (Afoakwah *et al*. 2018). Additionally, *saiko* is another practice contributing to overfishing, where industrial trawlers transfer frozen unwanted fish caught by large ships – usually small species such as anchovies and sardinella – to specially adapted canoes out at sea, which are then taken to shore and sold to local communities. While such transhipment at sea is illegal under the 2010 Fisheries Regulations (LI 1968), the practice is not fully curbed and requires better enforcement (Environmental Justice Foundation 2020).

In order to decrease the fishing pressure, several measures have been taken based on the Fisheries Act 625 and Fisheries Regulations 2010. These regulations include licensing of vessels, closed seasons, no fishing areas, and gear restrictions. However, fishing trends in Ghana still appear to be in a critical stage with very high fishing pressure on several stocks (Asiedu *et al*. 2021).

Field visit to the Ghanaian coastal region 2018.
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The GMA in Ghana has adopted the global industry practice of setting a 500 m radius safety zone around oil and gas installations that act as no-go zones. The fishing community is therefore restricted from accessing these areas for fishing. Through awareness measures taken by Fisheries Commission on fishing around oil installations, there has been significant reduction in the number of fishermen who venture into the 'no go' zones (Dowokport 2015).

At the same time, women in the coastal communities of Ghana have reportedly encountered a disruption in their pre-existing traditional livelihoods of fishing and farming from oil and gas activities. Support for alternative options to sustaining or improving livelihoods have not adequately reached women in coastal communities, who were primarily reliant on subsistence activities.[40]

[40] This information was gathered through first-hand interactions with local women, during the field-visits undertaken in 2023.

Figure 12: **Development sectors in Ghana's coastal and marine space.**

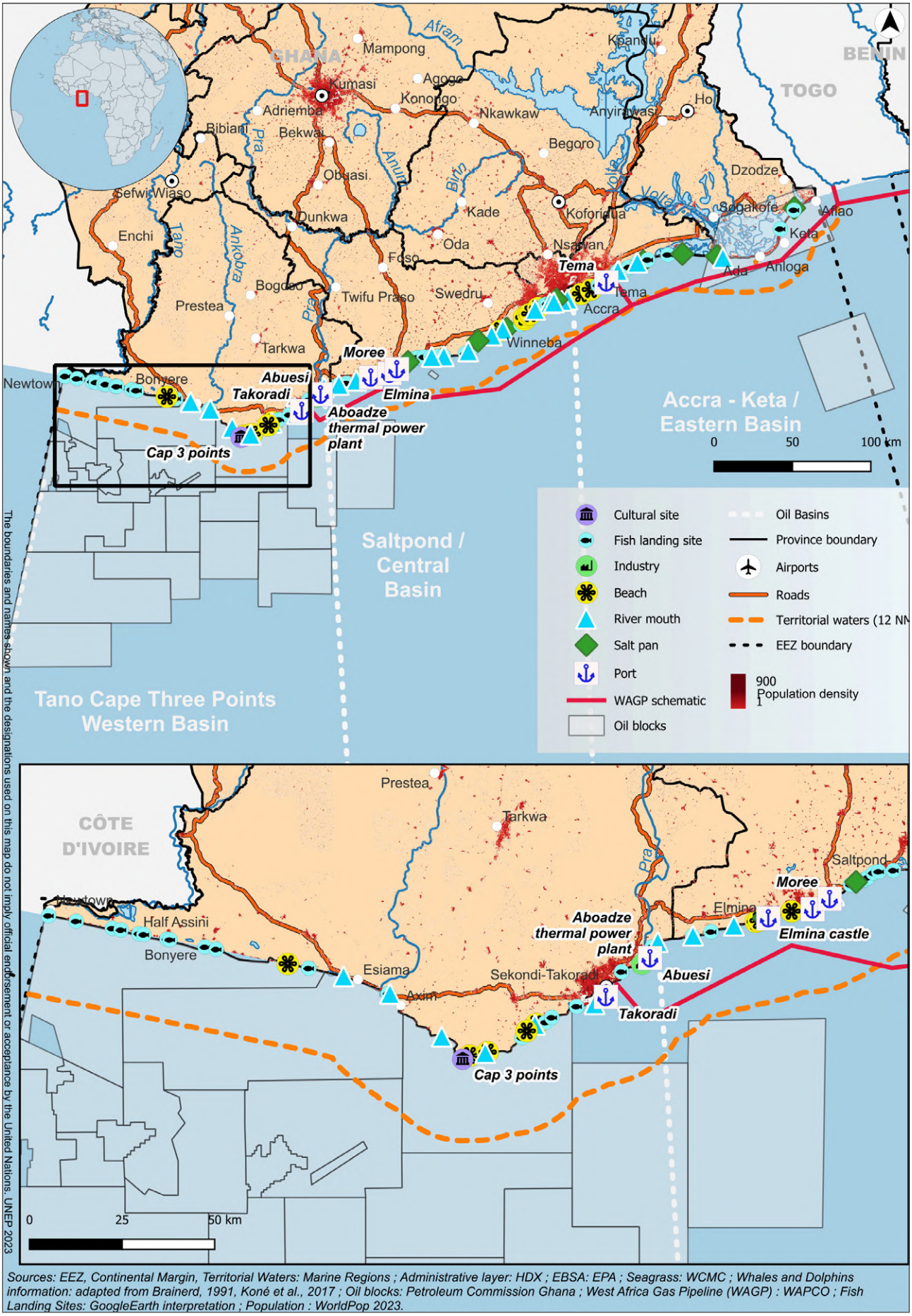
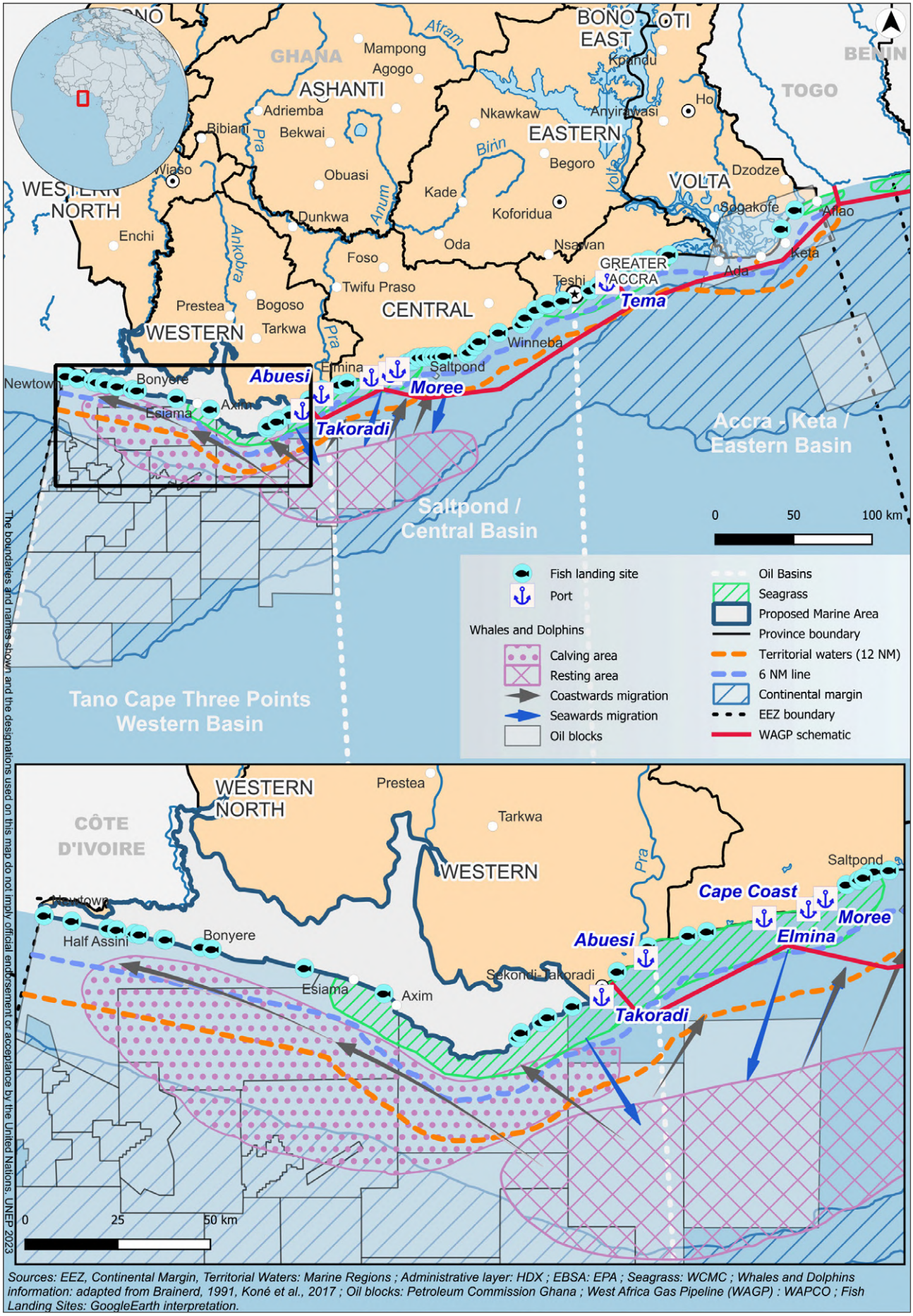
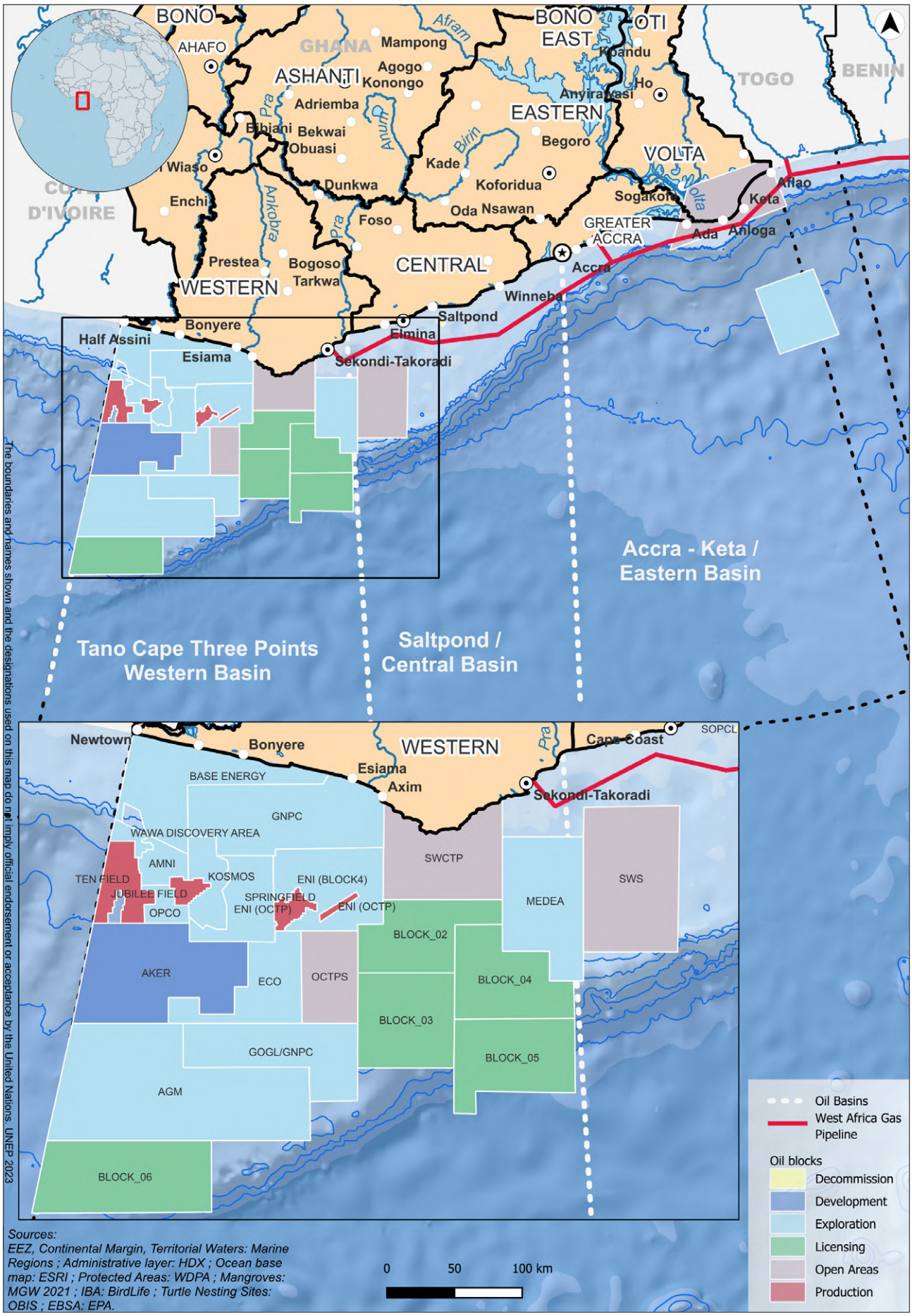


Figure 13: Key marine fisheries and landing sites, and oil blocks in Ghana. The map also indicates the areas where seagrass is found and the main calving and migration routes for whales and dolphins.



Sources: EEZ, Continental Margin, Territorial Waters: Marine Regions ; Administrative layer: HDX ; EBSA: EPA ; Seagrass: WCMC ; Whales and Dolphins information: adapted from Brainerd, 1991, Koné et al., 2017 ; Oil blocks: Petroleum Commission Ghana ; West Africa Gas Pipeline (WAGP) : WAPCO ; Fish Landing Sites: GoogleEarth interpretation.

Figure 14: Offshore oil and gas sector in Ghana.



Ghana's **offshore oil and gas sector** is primarily concentrated in its western coast (Figure 14). While Ghana has not faced any major oil spills thus far, its coastal and maritime neighbours have had spill incidents. Offshore oil production and transport in the Gulf of Guinea has resulted in several large spills that have caused severe destruction to coastal environments and shallow water ecosystems. Neighbouring Nigeria and Cote d'Ivoire have both experienced several major oil spills and numerous small spills in connection with drilling, pumping, and loading of oil (ITOPF 2010; ITOPF 2015).[41]

The benefit of rapid development as a result of oil and gas activities have not necessarily translated into opportunities for female entrepreneurs in port cities such as Takoradi. The capital and technology-intensive nature of offshore oil operations means that local women are excluded from participating in the industry, further constraining their economic prospects. New job opportunities created by the oil sector are typically targeted at men, assuming them to be the primary breadwinners, thereby exacerbating existing gender disparities (Andrews *et al*. 2021; Darkwah 2013).

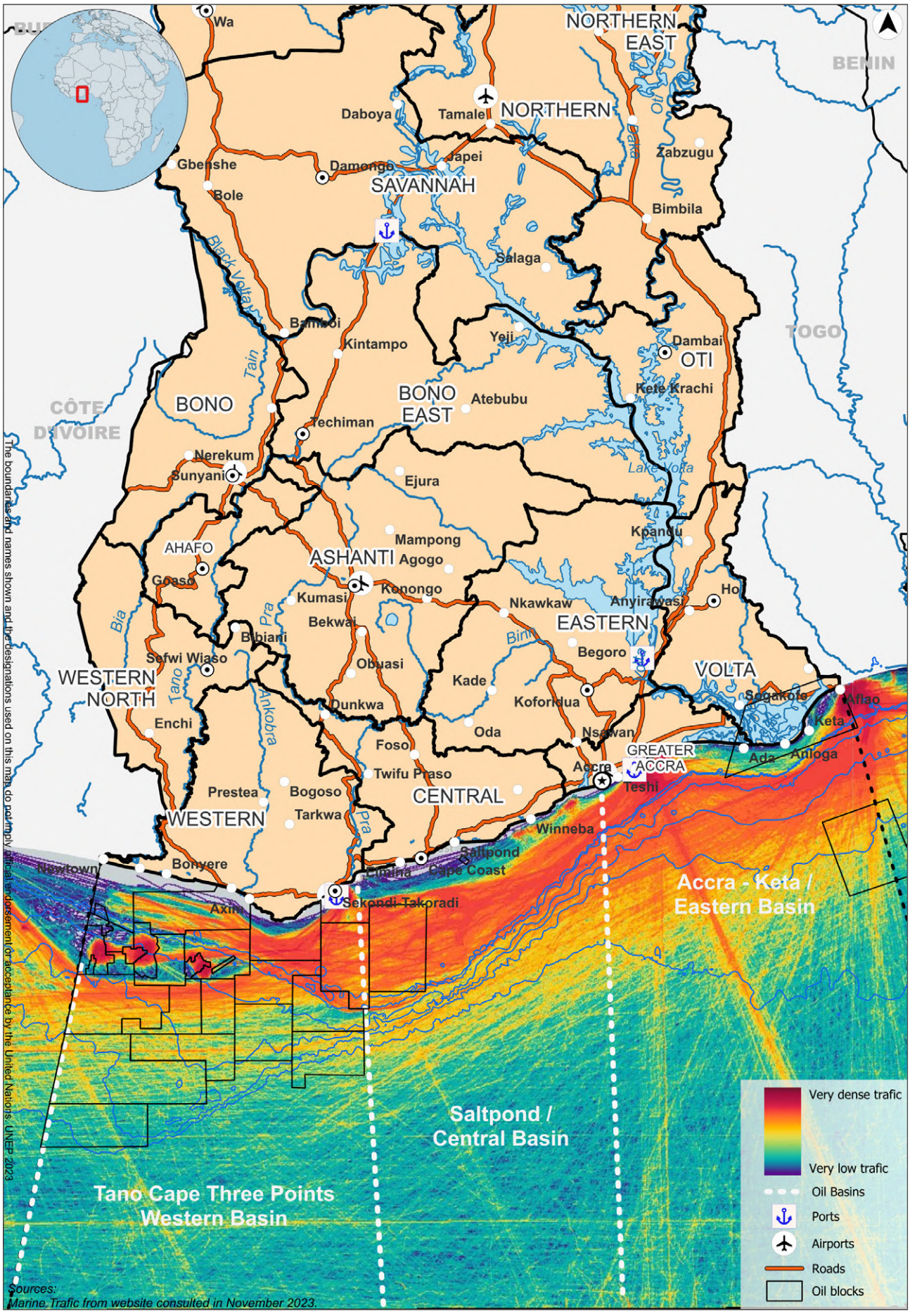
Maritime operations such as **shipping** may also have several unwanted impacts on the coastal and marine environment (Figure 15). Various factors like oil spills, greenhouse gas emissions, sewage, and ballast water discharge containing invasive species and pollutants can harm fishing, tourism, and biodiversity. Most of the negative impacts that may originate from shipping are regulated in various international conventions and treaties. It is the port- and flag state's responsibility to ensure ships are following the regulations. Ghana is a signatory to several of these regulatory instruments, but a number of important regulations still need to be signed.[42]

Any future plans to establish **offshore wind power** in Ghana will mean construction of pylons on land to be piled into the seabed. Commonly monopile foundations or jacket on piles are used if the water depth allows. In deeper waters, floating wind turbine systems are used. Independent of which techniques will be used in Ghana, there will be, during the construction phase, impacts on the environment both at the sites where the wind turbines will be located and in connection with the various forms of transport during the construction. Other aspects that must be taken into consideration are the possible impacts of the presence of wind turbines on wildlife both directly (collisions), as well as indirectly due to noise and vibrations. In addition, there will be cables laid on the seabed connecting the wind turbines with land. It is important that any establishment of wind power is preceded by impact assessments considering both environmental and social aspects and that these investigations are carried out following the highest international standards.

[41] See Chapter 4.C for further discussion on marine pollution from offshore oil and gas sector.

[42] See Section I.B on International commitments and domestication procedure.

Figure 15: **Shipping lanes and maritime traffic in Ghana.**



B1. Planning tools for environmental management and governance

Planning tools can enable the management of activities of multiple users of ocean space to be coordinated so as to maintain species, habitats and ecosystem structure while monitoring the individual and cumulative impacts from users, all the while taking into account any environmental change over that timescale and seascape (UNEP 2010). Marine Spatial Planning (MSP) and Strategic Environmental Assessments (SEA) are examples of tools which may be used for multi-sectoral development planning that take into account environmental parameters and constraints, potential risks/threats, and development opportunities.

Spatial planning tools such as MSP and SEA are recommended to be iterative and consultative to address competing stakeholder interests, as above, in the shared marine and coastal space and to encourage co-existence between the development sectors (Intergovernmental Oceanographic Commission 2021). The iterative and consultative nature of these tools help anticipate environmental impacts and resource demands of emerging sectoral developments while preserving the sustainable functioning of marine ecosystems. The ongoing SOP in Ghana is another process with several similarities with the MSP process (see Chapter 2. B)

The Ghana MSP experience

In Ghana, even though the GMA retain the legal regulatory mandate over maritime activities, LUSPA has the legal mandate as the coordinating body on MSP under the LUSPA Act 2016.[43] LUSPA has noted a critical lack of technical capacity and skills when it comes to fulfilling its coordinating role for the marine space. LUSPA requires additional capacity support in developing baselines to track cross-sectoral development, as well as guidelines for planning standards in the marine space, similar to the ones used for land-based works.

Nonetheless, there have been previous initiatives focused on developing national MSP capacities. Led by the EPA and LUSPA through an inclusive participatory process at regional and district levels, the Mami Wata initiative under the Abidjan Convention advanced Ghana's first MSP, outlining a draft plan from 50m above sea level to 200nm offshore. This initiative has produced a Draft Marine Spatial Plan (Volume I), and Marine Spatial Development Framework (Volume II) for the Ahanta West, Ellembelle, Jomoro, and Nzema East districts in the western region of Ghana, which is now awaiting publication (EPA 2022).

The targeted district authorities have been encouraged to utilize this draft MSP in their local development planning. LUSPA has flagged the need for further follow-up support towards implementation of this draft MSP. This was echoed by Ellembelle, one of the beneficiary districts, during the consultations for this assessment.

The recently initiated International Union for Conservation of Nature (IUCN) GEF 7 project on the use of MSP in the Gulf of Guinea for the implementation of payment for ecosystem services and coastal nature-based solutions is a capacity building project expected to run from 2024 to 2027 (Global Environment Facility 2023).

LUSPA and EPA may draw from these MSP initiatives to develop long term institutional capacity. This also underscores further the importance of coordinating and linking MSP efforts in the country.

[43] These functions are relatively new to the LUSPA whose primary capacities relate to land use spatial planning.

The Ghana SEA experience

SEAs can enhance the process of creating MSPs by analysing potential environmental impacts at a strategic level e.g., within a specific sector or geographic area, developing multiple development scenarios, and evaluating alternative plans, based on an environmental assessment of risks and opportunities.[44] SEAs can also play a key role in biodiversity conservation and supporting implementation of ecosystem-based approaches in spatial and land-use planning. By establishing an umbrella framework for assessing potential environmental impacts, including cumulative impacts, SEAs increase efficiency in undertaking project-level EIAs/ESIAs and permitting. In short, SEAs provide a way of incorporating consideration of the potential socio-ecological impacts of development activities into the MSP process (European Commission 2016); however, experience in Ghana linking SEAs with MSP processes have not yet been demonstrated.

The EPA is the lead authority for undertaking SEAs in Ghana, in collaboration with the other line ministries. The EPA previously had a separate Unit that undertook SEAs with support from the Regulatory Unit within the Agency. However, the EPA is currently undergoing an organizational restructuring that may see SEA being absorbed into the Environmental Assessment and Audit Unit. The EPA, in collaboration with the Environment Directorate, NDPC and the Ministry of Energy have carried out an SEA of the oil and gas sector for offshore basins in Ghana in 2013 and another SEA for the onshore Volta Basin and the Keta Delta Block for oil and gas exploration and production in 2021.

Though the EPA has sufficient in-house expertise to undertake new SEAs, several of the staff who were at the forefront of previous SEAs have retired within the period of 2021 to 2023. While there has been some amount of knowledge transfer, the existing staff can benefit from training on conducting SEAs. The majority of the SEAs conducted in the past have been externally funded, and donors mostly require that external consultants lead the process; hence, such assessments had been carried out with reliance on external support with reduced inputs from national experts.[45]

As evidenced above, Ghana has national capacities to carry out SEAs, and there are ongoing initiatives aimed at introducing MSPs in the country. Ghana may consider enhancing linkages between SEAs and MSPs, where the SEAs provide the environmental assessment baselining which could feed into the preparation of plans and programmes under MSP processes. Therefore, any new MSPs being developed in the country would benefit from an SEA process that addresses the environmental (and social) considerations of multiple development sectors at play within a focus geographic area.

[44] Strategic Environment Assessments (SEA) serve as environmental impact assessment instruments which can inform the development of policies, plans, and programmes, which differs from environmental impact assessments (EIAs) which focus on the project site level. It can also inform the MSP process. The Directive 2014/89/EU of the European Parliament and of the Council establishing a framework for MSP, for instance require an MSP to include reference to aspects of 'land-sea interactions; the ecosystem-based approach; coherence between MSP and other processes such as integrated coastal management; the involvement of stakeholders; the use of best available data; transboundary cooperation between Member States; and cooperation with third countries' (Ehler and Douvere 2014).

[45] Response provided by EPA on follow-up survey questionnaires.

Sustainable ocean governance calls for an ecosystem-based management approach in coastal and marine areas.

B2. Management approaches in coastal and marine areas

Sustainable ocean governance calls for an ecosystem-based management approach in coastal and marine areas. Integrated ecosystem-based management aims to harmonize the utilization of ocean, coastal, and freshwater resources with conservation efforts, recognizing the importance of biodiversity and ecosystem services. It entails coordinating management activities on both land and sea to mitigate the collective adverse effects on marine and coastal ecosystems. Area-based and transboundary approaches are central to ecosystem-based management since these provide more opportunities to effectively address environmental threats such as transboundary pollution (UNEP 2011). Integrated Coastal Zone Management (ICZM) and Marine Protected Areas (MPAs) are examples of such ecosystem-based and area-based approaches.[46]

Ghana, as a Party to the Abidjan Convention, has been involved in discussions around the Additional Protocol on Integrated Mangrove and Coastal Zone Management (World Bank 2019). Similarly, there has also been ongoing capacity building initiatives aimed at introducing and establishing MPAs in the country. However, ICZM and MPAs are yet to be systematically adopted in Ghana.[47]

Ghana experience in Integrated Coastal Zone Management

ICZM is a science-based, integrated, and participatory approach adopted to manage the coastal environment, analyse the impacts of various human activities on this environment, and plan how the environmental effects of these human activities can be managed to achieve ecological, economic, and social objectives which have been determined through an open political process. It is not a one-time event but should be an ongoing process which balances the demands for socio-economic development and the need for environmental protection to deliver social and economic outcomes in the future (EEA 2024).

There is no single legally mandated institution in Ghana that leads on issues related to ICZM. While Ghana has yet to formally adopt an ICZM approach for addressing coastal degradation and the high risks of coastal flooding and erosion, there is adequate technical capacity and experience within relevant mandated institutions such as the EPA to undertake such a management approach.[48]

The 2022 World Bank Country Climate and Development Report for Ghana recommends adoption of an ICZM approach to support adaptation of coastal communities to climate vulnerabilities and address problems with overfishing. The recommended approach includes developing a blue economy framework with improved spatial planning and enforcement capacities for protecting and managing coastal ecosystems. The Volta Delta is identified as a potential hotspot for adoption of such an ecosystem-based ICZM approach (World Bank 2022).[49]

[46] Other approaches to area-based management include planning tools such as integrated water resources management (IWRM), ridge-to-reef, and source-to-sea.

[47] Response provided by EPA, and LUSPA to detailed capacity needs assessment checklist. GMA notes that area-based management tools are utilized to some extent for spatially organizing the marine environment. For more details refer to Annex 3.

[48] Responses provided by EPA to detailed capacity needs assessment checklist. For more details refer to Annex 3.

[49] Blue carbon ecosystems like mangroves, wetlands, lagoons, and seagrasses enhance coastal community resilience by mitigating flooding, erosion, and storm surges. Protecting and restoring these areas, combined with improved urban planning and enforcement, provides substantial development benefits, and supports climate mitigation and adaptation. An ecosystem based ICZM approach is a cost-effective method to enhance fish spawning and breeding areas, expand habitats, boost biodiversity, and strengthen the resilience of vulnerable coastal communities (World Bank 2022).

Ghana experience in Marine Protected Areas

MPA is another area-based management approach which may be considered for the protection and conservation critical marine and coastal habitats. MPAs are areas of the coastal or offshore ocean that have been set aside either for biodiversity protection, and/or for fish spawning/reproduction areas. There are also designated MPAs for reasons such as tourism or as cultural sites.[50] MPAs are often within national boundaries but several large MPAs have also been established covering regional seas or extensive offshore areas.[51]

While Ghana currently does not have any formally gazetted MPAs,[52] it has committed to international marine conservation goals which requires formal gazettement of MPAs or their equivalent. Ghana does have five coastal lagoons/river mouths, with a total area of 176,134 hectares, that have been designated as Ramsar wetland sites: Keta Lagoon, Songor, Densu delta, Sakumo and Muni-Pomadze. Some of these sites are relatively small in area coverage.

Despite the higher degree of protection envisaged by law, these Ramsar wetlands continue to be faced with issues related to pollution, overharvesting of mangroves, sand mining and fishing.[53] Coastal development has encroached into them and decreased the size of the natural ecosystem very significantly during the last decades (Ghana, Environment Protection Agency 2017; Ngnenbe 2022). The enforcement and protection of Ramsar wetland sites are challenged by low staffing, logistical challenges, financial constraints, and weak institutional collaboration.[54] Given that these highly threatened Ramsar wetland sites are also Key Biodiversity Areas (KBAs), their designation as MPAs (Figure 16) would afford them a stronger level of oversight (Nunoo 2018b).

There are several ongoing and planned initiatives in Ghana aimed at increasing national capacities to identify and manage MPAs (United Kingdom, Ocean Country Partnership Programme 2023). The Ghana Fisheries Recovery Activity (GFRA) funded by USAID is supporting sensitization and consultation on a potential MPA named Cape Three Points in the Western Region of Ghana, overseen by a cross-stakeholder Technical Advisory Committee. The GFRA aims to submit an MPA proposal, including a management plan, to the District Assembly through the Fisheries Commission by March 2025, collaborating on ecological and socio-economic baselining and legal framework review.

The IUCN project running from 2024 to 2027 focuses on the enhancement of coastal and marine habitats in Ghana, Togo and Cote d'Ivoire through coordinated spatial planning, economic incentives, and nature-based solutions. This includes the management of mangrove ecosystems and mangrove restoration, as well as reviewing and strengthening Ramsar site management and implementation.

[50] MPAs such as the Great Barrier Reef in Australia are renowned for their biodiversity, protecting numerous unique species and complex habitats (National Geographic, 2024). Similarly, the Belize Barrier Reef Reserve System has been designated for its ecological importance, providing critical habitats for fish spawning and other marine life (UNESCO 2024). MPAs also serve cultural and historical purposes. The USS Monitor National Marine Sanctuary in the United States, for example, protects the remains of a Civil War-era warship, highlighting the cultural significance of these protected areas (National Geographic 2024). Additionally, MPAs can promote sustainable tourism. Laughing Bird Caye National Park in Belize is a no-take MPA that supports recreational activities like snorkelling while ensuring the conservation of its marine environment (National Geographic 2024).

[51] Established by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), this MPA covers 600,000 square miles (1.55 million square kilometers) in the Southern Ocean, making it one of the largest MPAs that extends beyond national boundaries and into international waters. The is composed of 26 member countries along with the European Union (ASOC 2024).

[52] Under the Kunming-Montreal Global Biodiversity Framework 2022, Ghana has committed to ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, and at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed. Ghana is also party to the High Seas Treaty that commits to the global 30x30 target that aims to effectively conserve and manage at least 30 per cent of the world's terrestrial and inland water area by 2030.(The High Seas Biodiversity Treat, UNCLOS 2023)

[53] Stakeholder inputs received from civil society and district authorities during fact finding mission held in August 2023.

[54] Participants inputs during National Multi-Stakeholder Validation Meeting held in Accra on 19 March 2024.

Figure 16: **Key Biodiversity Areas and Proposed Marine Protected Areas.**

In the absence of a national policy or strategy on MPAs, there is a lack of consensus amongst the EPA, Fisheries Commission, Forestry Commission, and LUSPA on the lead institution for the implementation of MPAs in Ghana. The management of the Ramsar sites currently falls under the mandate of the Wildlife Division of the Forestry Commission. The potential MPA being considered under the GFRA is aimed at fisheries management and would therefore fall under the existing mandate of the Fisheries Commission.

Despite the lack of formally recognized MPAs, Ghana has seen effective implementation of community-based resource management initiatives. Conservation efforts such as replanting of mangroves have already been undertaken by CSOs such as the Friends of the Nations, Women in Conservation, and Hen Mpoano.[55] The COMADRIP Project 2021-2022, built on the good practices of community-based forestry management seen in Ghana, developed an MPA implementation strategy for the greater Cape Three Points area, utilizing the Community Resource Management Areas (CREMAs) process, potentially serving as a blueprint for Ghana's coastal conservation areas (University of Cape Coast 2021).

CREMA has been effective in aiding area-based conservation initiatives undertaken by the Wildlife Division of the Forestry Commission. Involving communities in decision-making and management has contributed to increased enforcement and compliance, and general knowledge and concern for coastal and marine environments (UNEP 2021). These community-managed areas, however, require a lot of government and non-government support and funding, particularly during the initial phase, until communities can be more independent and manage areas with less support (McCrea-Strub *et al*. 2011).

While not strictly an area-based management approach, the co-management approach adopted for fisheries management in Ghana is yet another example of a successful community-led management approach that enhances conservation, development, and management of marine and coastal resources by devolving powers to the resource users. Under this approach, fishing communities sharing a common fishing ground, designate a common fisheries management area with a dedicated management plan for that area. As discussed in Section III.C, both the CREMA approach and co-management of fisheries have now been formalized in law.

The World Bank's West Africa Coastal Areas Resilience Investment Project (WACA ResIP 2) seeks to address the immediate risk to the coastal areas in The Gambia, Ghana, and Guinea-Bissau from coastal erosion, flooding and pollution, and people depending on agroindustry and tourism along the coastlines.[56] The project focuses on physical coastal infrastructure and nature-based solutions to protect communities and livelihoods from coastal erosion and flooding, while also supporting expansion of livelihood opportunities for coastal communities. Regional integration activities under this project include collaboration with the Abidjan Convention which supports regional coastal and environmental policy harmonization across countries, including through the inclusion of Abidjan Protocols into national laws (World Bank 2023).

Transboundary phenomena and processes that affect the coastal and marine ecosystems must also be considered during the establishment and management of MPAs. Coastal and marine management tools should necessarily address the pertinent transboundary aspects, similar to the approach proposed by the IUCN project. The ongoing cooperation for conservation between Côte d'Ivoire and Ghana to create a transboundary MPA between Assinie (Côte d'Ivoire) and Half Assini (Ghana) to support integrated ocean management along the Atlantic coast of West Africa is a positive step towards this (University of Cape Coast 2023).

[55] Inputs provided by District Authorities at Ellembelle during the factfinding mission in August 2023.

[56] The World Bank's West Africa Coastal Areas Resilience Investment Project (WACA ResIP 2), was approved for a total amount of $246 million in International Development Association (IDA) financing, including a $5 million PROBLUE grant. The PROBLUE grant supports a pilot mangrove blue carbon deal financed by the Danish energy company Ørsted, marine spatial planning, and marine plastics pollution management. The ongoing SOP process under the Office of the President is being supported by World Bank under this project.

B3. Environmental regulatory oversight and compliance monitoring.

Strengthened compliance monitoring is another national priority identified in the UNSDCF agreed between the United Nations in Ghana and the Government of Ghana. EIAs/ESIAs are undertaken in Ghana under the Environmental Assessment Regulations 1999. Compliance monitoring is conducted after the permits have been issued. Where all permit conditions have been complied with, 24 months after the issuance of the provisional environmental permit, it is replaced by an environmental certificate. Public hearings as part of stakeholder consultations processes are mandatory during the screening, scoping, assessment, and review stages (Steinhauer 2019). ESIAs reports of planned development projects are made publicly accessible.

The private sector self-monitors their pollution-generating activities as is required by their relevant permits.[57] The EPA's GIS unit extracts the relevant datasets from the documents submitted by these private institutions during compliance monitoring. The EPA collaborates with research institutions, such as the University of Ghana, who have satellite monitoring centres and occasionally provide monitoring information to the EPA for necessary action to be taken. The public is also encouraged to report any pollution incidents to the EPA, and such incidents are occasionally reported by artisanal fishermen. When a pollution incident has been reported to the EPA, the relevant permitting department/unit of the EPA initiates its own investigation process (if need be), assesses the incident and monitors the situation.

Monitoring of marine and coastal pollutants and of parameters such as the concentrations of persistent pollutants, pathogens, and microplastics are necessary for management decisions related to human health and the state of the ecosystem.

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Monitoring of marine and coastal pollutants and of parameters such as the concentrations of persistent pollutants, pathogens, and microplastics are necessary for management decisions related to human health and the state of the ecosystem. The monitoring of nutrient levels and primary and secondary productivity is also necessary to enable the effective management of marine fisheries including on decisions related to allowable quotas for different species. For monitoring the levels of pollution in fish and seafood, traditional sampling and analyses are necessary.Nevertheless, some of these key parameters can be monitored using remote sensing technology. Satellite and drone technology can provide new tools for monitoring compliance with environmental laws and regulations, while social media and citizen science platforms create mechanisms for increasing public engagement in enforcement (UNEP 2023a).

For the offshore oil and gas sector in particular, the EPA receives monthly monitoring reports on emissions, discharges, and waste handling on the operator's Environment Management Plans, with a more comprehensive annual report submitted on a yearly basis by developers/operators. On the basis of the monthly reports received, site inspections are planned. These reports are stored in a mix of hard copy and soft copy files. There is no central repository at the EPA for all monitoring reports.

The EPA does not have a fixed frequency for compliance monitoring inspections; they are planned annually at beginning of each year. Environmental auditing is, however, conducted every three years. Even though the inspections of oil and gas installations are the primary responsibility of the EPA central office, the respective regional staff are also part of such inspections.

[57] The EPA is structured based on key sectors, such as petroleum, mining, manufacturing industries, natural resources, human settlement, etc, to accommodate its regulatory functions. These departments or units issue permits to these sectors with permitting conditions attached to their environmental permits. As such, depending on the sector, the permit condition will normally provide for how pollution incidents should be reported, monitored, and assessed.

An Inspections and Audits Manual on environmental compliance monitoring was developed for the EPA under Norway's OfD programme in 2018. The EPA has also developed draft national offshore environmental monitoring guidelines, which is in the process of being updated through consultations with government and industry stakeholders.

The EPA does not undertake joint inspections with other regulators such as the GMA, Fisheries Commission, Petroleum Commission or Ghana Tourism Authority. However, in the event of non-compliance requiring enforcement action, the EPA is required to liaise with the GMA, Petroleum Commission and other relevant government appointed regulators for harmonised enforcement of procedures.[58]

Training needs

Based on in-person consultations and survey responses received, the existing staff of the EPA to some extent possess the educational and technical qualifications to carry out their mandated regulatory responsibilities. Nonetheless, insufficient technical skills can pose additional challenges to compliance monitoring in the coastal and marine environment (Global Centre on Adaptation *et al*. 2022). As stated before, a more in-depth and detailed internal staff capacity assessment of all EPA employees would be necessary to determine their current capacities to adequately fulfil the roles that will be assigned to the agency under the SOP.

Regulatory institutions, including the EPA, LUSPA, GMA and the Petroleum Commission, reported that they do not receive periodic basic training nor adequate specialised training on exercising regulatory oversight and compliance monitoring. For the upstream oil and gas sector, staff at the EPA's central offices and regional offices have received a few trainings on environmental inspections and auditing. Trainings are provided to the regional EPA staff on needs basis. The staffing vacancies and limited resources at the LUSPA also hampers its ability to effectively enforce all land use permits and prevent encroachment into protected areas. There is a clearly identified need for further training at the LUSPA to enable the effective exercise of its mandates in the coastal and marine environment. The regulatory institutions also noted the need for improved allocation of budgetary resources to effectively undertake sectoral regulation of the environment and compliance monitoring.

National Training for Civil Society and Local Governments on Reducing Environmental and Pollution Risks in Oil and Gas Exploration and Production, Keta region, 2018.
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[58] Enforcement procedures, listed under the EPA's Enforcement Policy Guidelines for Petroleum Sector Operations, may arise from inspections, investigations, or other regulatory activities where in the opinion of EPA there is or is likely to be contravention of the law. Methods for enforcement include issuance of Letter, Enforcement Notice, Cessation or Prohibition Note, followed by Revocation of a Permit, and/or Prosecution.

C. Marine pollution and other stress factors

C1. Key development sectors contributing to marine and coastal pollution and environmental stress.

A number of development sectors in Ghana contribute to marine and coastal pollution and degradation of the marine environment.

Sand mining. Despite being banned, beach sand mining activities in Ghana continue to weaken the coastline resilience and capacity to adapt to accelerated sea level rise, and the eroding forces of tides and currents (Mensah and Mattah 2023). The practice of *galamsey*, which refers to unregulated sand mining in rivers, such as the Pra river, has resulted in land degradation, deterioration of the water quality, and habitat destruction (Ghana: 'Galamsey' activities stalling sustainable fishery efforts (2018) The increased turbidity in the water affects coastal and marine life and habitats.

Fisheries sector. During consultations with fishing communities in Cape Coast, the stakeholders reported the use of poisons in certain areas and in certain types of fishing. However, it could not be determined what type of poison was being used for such illegal fishing practices. There is need for stronger enforcement against such illegal fishing practices that use cyanide poisons, DDT and carbide, dynamite, or other explosives (Afoakwah *et al*. 2018).

The fishing sector is also responsible for a part of the plastic pollution problem, although a significant portion of the different plastic wastes on Ghana's shores originate from landfills upstream.[59] The fisheries sector should make every effort to deal with its part in this problem and ensure that any type of waste including ropes, lines, nets, floats, etc. as well as food wrappings, bottles, cans, etc. are brought to collection points. The new National Plastics Management Policy describes how such systems for collections and recycling will be designed.

Marine transportation sector/ports. Shipping today is much safer from an environmental and social perspective compared to some decades ago.[60] Nevertheless, port operations may have a significant environmental footprint when it comes to air pollution and spills of liquid and solid materials.[61] At the moment, the commercial ports of Tema and Takoradi are not providing shore power to vessels, and similarly with the Secondi fishing harbour. However, the ports are making plans to provide shore power to vessels. An LNG Terminal has been built at the Tema port by a private entity to bunker vessels when operations begin. However, zero carbon fuels such as e-ammonium, e-hydrogen, and e-methanol are not yet being provided.[62] Ghana may draw from several good examples of ports globally, such as the Ports of Rotterdam, Shanghai and Gothenburg, that have minimized, for example, air pollution by offering vessel and equipment electrification to meet the carbon reduction targets (Neduzha *et al*. 2021).

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[59] Stakeholder inputs received during consultations with district authorities in Ellembelle during the fact-finding mission conducted in August 2023, supplemented by inputs from UNDP Ghana Environment and Climate Change cluster.

[60] Since the last half century there has been a significant development in terms of higher standards of ships and more competent crews. This development can be expected to continue. However, it is up to port- and flag-states to control and enforce the regulations in the various conventions, treaties, and protocols. In the case of Ghana, it has yet to ratify a few conventions and treaties, namely: STCW-F 1995, 2021 amendments to the IMO Convention, AFS 2001, Bunkers 2001, OPRC/HNS 2000, and London Protocol Amendments 2009 and 2013. Though Ghana has ratified and domesticated the London Convention (LC 1972 and the 1996 London Protocol), the London Protocol Amendments of 2009 and 2013 have not yet been ratified. Considerations for ratification of the rest of the other conventions listed are still at initial stages.

[61] As per information received from the Environment and Safety Standards Unit of the GMA, there have been no major port related environmental pollution incidents in Ghana. There have only been occasional minor discharges of wastes by vessels at the ports including oil, sewage, garbage and recently, exhaust gas cleaning residues. The vessels are usually made to pay penalties when identified, and clean-ups are undertaken. However, there were two incidents that could have resulted in pollution at the Tema port anchorage. One was in May 2018 when a vessel called MT Alice was split due to poor maintenance, which in turn led to structural failure. The other incident was in July 2020 when there was a collision involving a vessel called MT Sweet Miri. In both cases, a combined task force from GMA and other relevant stakeholders worked to ensure that the spills were contained and did not result in environmental pollution.

[62] Response received from Ghana Maritime Authority to follow-up survey questions.

Field visit along Ramsar wetland sites in Ghana 2018.
© UNEP/Marisol Estrella

Oil and gas sector. Ghana's offshore oil and gas sector, primarily located along its western coast, poses a potential risk of marine pollution. Offshore oil production and transport in the Gulf of Guinea have resulted in numerous spills, causing extensive harm to coastal ecosystems. While Ghana itself has had no major spill incidents, neighbouring countries like Nigeria and Côte d'Ivoire have already experienced major oil spills, highlighting the risk for severe environmental damage.[63]

Tourism sector. Coastal tourism also causes pollution just as any other human activity along the coast. However, visitors to hotels and resorts will remain keen to be surrounded by an environment free from pollution in any form; this should be in the interest of the operators and hoteliers as well. Resorts and hotels must have sewage treatment installed. The EPA, the Ministry of Sanitation and Water Resources and local authorities regulate such occurrences as well as pollution at resorts along the beach through their policies and by-laws, respectively. Tourist operations should be required to recycle plastics as well as metals, batteries etc.[64] Ecotourism has also been encouraged through the National Tourism Development Plan (2013-2027), the Tourism Sector Medium Term Development Plan (2022-2025), and the Northern and Southern Tourism Master Plans. Through the Tourism Regulation and Licensing of Tourist Accommodation Enterprise 2006, the Ghana Tourism Authority sanctions operators along the coastal ecosystem when they flout their permitting conditions.

[63] In 2011, a well blowout at the Shell Nigeria Petroleum Company Bonga Oilfield spilled about 40,000 barrels of oil into the Atlantic Ocean, which impacted coastal settlements, ground and surface water, fishing grounds and farmlands (Ogbuka 2022).

[64] Under the National Plastics Management Policy 2021, the Ministry of Tourism, Arts and Culture is required through the pursuit of its mandate to ensure that plastic wastes are effectively managed as part of environmentally friendly tourism especially located in communities.

C2. Types of marine pollution in Ghana

Today all coastal waters around the world are affected by pollution in one form or another, originating from sources on land or in the sea. Addressing pollution is an important element for achieving the 2030 Agenda and the Sustainable Development Goals through, among other measures, the prevention and significant reduction of marine pollution of all kinds.[65] Plastic pollution, acute oil pollution and chemical pollution are described below.

a. Plastics

An estimated 86 percent of Ghana's waste plastic load is improperly disposed, resulting in plastics clogging up stormwater drains, rivers, and streams and ending up in the oceans.

In the waters along Ghana's coastline and on the beaches, a very striking type of pollution is plastics in its various forms.[66] Food wrappings, drink bottles, plastics originating from the fishing sector, as well as many other types are found drifting in the sea or piled up on the beaches. Plastic waste is also washed out from landfills and downstream run off. Depending on the type of plastics, it will eventually be broken down into microplastics, although this process may take several years. UV-radiation and the physical action from waves and other stress will contribute to this process. Large pieces of plastics may cause a range of problems related to clogging of drains, cooling systems etc. Plastics also cause several biological effects in fish, turtles, and whales. In addition, investigations show that microplastics are taken up in the food chain and may end up in fish and seafood. An estimated 86 percent of Ghana's waste plastic load is improperly disposed, resulting in plastics clogging up stormwater drains, rivers, and streams and ending up in the oceans. It is estimated that 250,000 metric tons of plastic waste are dumped from Ghana into the Atlantic Ocean (World Bank 2020).

b. Acute oil spills

Acute oil spills refer to sudden and large-scale release of oil into the environment, often due to accidents such as tanker spills, offshore platform blowouts, or pipeline ruptures. This type of pollution may cause immediate and significant harm to marine and coastal ecosystems, wildlife and human health.

Given Ghana's established offshore oil and gas sector, there is potential for oil spills in the marine and coastal environment and other potential acute pollution incidents related to the sector. It is fortunate that, thus far, Ghana has been spared from major oil spills. Small spills have also been reported at Tema oil refinery and at the ports of Tema and Takoradi (ITOPF 2018).

c. Other types of pollution and stress factors

Persistent pollutants. Such pollutants are often "man-made", for example pesticides or chemicals developed for various industrial processes. Some of the most toxic or otherwise harmful substances are listed under the Basel, Rotterdam, and Stockholm Conventions. A few studies have been carried out in Ghana to assess the levels of some of these substances in the country. The results indicate elevated and increasing concentrations of some of the listed substances in water, fish, fruits, and vegetables (Bruce-Vanderpuije *et al*. 2018). In order to know the actual levels of harmful persistent pollutants in fish and other seafood, regular sampling and analyses of such substances should be carried out. That would be part of the suggested National Marine Monitoring Program. In addition to organic persistent substances, such monitoring should also cover elements such as organic mercury, cadmium, and lead.

[65] United Nations Environment Programme (2024). Resolution 6/15. Strengthening ocean efforts to tackle climate change, marine biodiversity loss and pollution [*UNEP/EA.6/Res.15*]. Available at https://resolutions.unep.org/resolutions/uploads/2403945e.pdf (Accessed: 3 May 2024)

[66] During consultations, the EPA noted that in a collaborative research work undertaken by FC and EPA, 8.2 tons of plastic was collected in just 58 minutes of trawling near the Togo-Ghana international boundary.

Organic pollutants from various sources on land. Organic pollutants include sewage, pesticides like dichlorodiphenyltrichloroethane (DDT), industrial chemicals like polychlorinated biphenyls (PCBs), fertilizers, and by-products like dioxins, which persist in the environment and pose risks to human health and ecosystems. Organic pollutants and sewage leading to nutrient enrichment, toxicity amplification, and ecosystem disturbance pose significant challenges to marine ecosystems, particularly in their contribution to the proliferation of Harmful Algal Blooms (HABs).[67]

The release of insufficiently treated wastewater into the environment because of dysfunctional or temporarily disconnected treatment plants are not uncommon in Ghana.

The release of insufficiently treated wastewater into the environment because of dysfunctional or temporarily disconnected treatment plants are not uncommon in Ghana. The majority of the industries located along the coast discharge untreated wastewater directly into the ocean, while those located further inland discharge their wastewater into major streams and urban storm drains. Available data indicate that there has been little to no progress in achieving the SDG 6 on access to basic services in sanitation in the country. Ghana is also amongst the lowest performing countries in Africa in terms of percentage of urban population using improved sanitation (UNEP 2023b).

Studies indicate probable risks of Harmful Algal Blooms (HAB) in the Ghanaian waters (Lamptey *et al*. 2021; Palm *et al*. 2022). In Ghana, the Water Research Institute has the capacity to analyse and monitor HABs.[68] There should be consideration for establishing a National Marine Monitoring Program, under which regular sampling could be carried out in order to keep track of the levels of pollutants of various forms, including from organic pollution in the form of sewage. Additionally, there is an urgent need for developing sewage treatment systems that will be able to treat most of the wastewater from urban areas along the coast.

Sargassum is a brown seaweed that originates from the Sargasso Sea and has spread over most of the central tropical Atlantic during the last 10+ years. The reason for this spread is shifts in current patterns in the central Atlantic (Almela and Jayson-Quashigah 2023). Addressing this issue will be a matter of adaptation. Numerous ways of utilizing sargassum have been tried, and the Government together with local authorities and communities may consider how other countries have dealt with the problem. Examples that are being tried in other countries include using sargassum for biogas production and/or as an organic fertilizer (UNEP – CEP 2021).

[67] Sewage originating from urban areas and released untreated into the coastal waters contribute to nutrient enrichment as well as the spreading of virus and bacteria which may contaminate seafood. A related problem is defecation in shallow waters or on the shores. Organic pollution in the form of runoff water from farms containing nitrogen, phosphorus, potassium will also contribute to enrichment of the coastal water. This enrichment of the water in turn leads to eutrophication, including algal blooms which may consist of species of microbes that are toxic to fish and shellfish. Another common effect is decreasing levels of oxygen, and in extreme cases, anoxic conditions. The combined impacts of nutrient enrichment, toxicity amplification, and ecosystem disturbance underscore the urgent need for effective management strategies to address water pollution and mitigate the occurrence and consequences of HABs on both marine ecosystems and human well-being.

[68] Response provided by EPA to follow-up questionnaire. The Water Research Institute (WRI) is one of the 13 research institutes of the Council for Scientific and Industrial Research (CSIR), which falls under MESTI.

C3. Management of plastic pollution and oil spills

While a general discussion on marine pollution has been provided (above), the CNA focuses primarily on assessing institutional capacities for managing plastic pollution and potential acute oil pollution incidents by establishing preparedness and response systems.[69]

a. Managing plastics pollution.

Ghana considers itself well underway in establishing substantive institutional capacities to address and tackle the issue of plastic pollution. Ghana is a member of the Global Plastic Action Partnership on transitioning towards a circular plastics economy, reducing the country's plastic waste and pollution. MESTI launched the National Plastics Management Policy (NPMP) in 2021 which prescribes extended producer responsibility. The NPMP, adopted in 2021, identifies MESTI as the focal institution on plastic wastes in Ghana. It coordinates with other MDAs, in line with their respective mandates, to plan, coordinate and facilitate the mainstreaming of plastic waste management in the country. However, the National Roadmap for the adoption of the NPMP and the regulatory framework to oversee the implementation of the NPMP are yet to be developed. Similarly, the local and regional governments, industry and institutions will be given a year from the development of the National Action Plan to localize it, while the Certificate Scheme and Database, Extended Producer Responsibility (EPR) Scheme and Environmental Tax Regime are being operationalized.

Coastal village visited during the mission in 2023.
© UNEP/Devashree Pillai

[69] Acute pollution refers to the sudden and severe introduction of pollutants into the environment, causing immediate and often intense damage to ecosystems, wildlife, and human health. This type of pollution typically results from events such as industrial accidents, chemical spills, or major releases of hazardous substances, leading to rapid and substantial contamination. The effects of acute pollution are usually dramatic and noticeable, requiring prompt response and remediation efforts to mitigate the impact.

There is, however, need to develop a regulatory framework to implement the NPMP. Considering the large quantities of plastics in the coastal waters in the country, an investigation of the presence of microplastics in seafood in Ghana is recommended. It may also be interesting for Ghana to study how other African countries are dealing with the plastic pollution problem, such as Kenya and Rwanda. Another avenue worth exploring is utilising the existing Incident Command System, that is equipped to deal with oil spill pollution, be used to respond to acute plastic pollution incidents, along with assistance of GMA and EPA.

An interesting new initiative that has been recently introduced in Ghana is the World Bank's Plastic Waste Reduction-Linked Bond, which is based on the concept of carbon credits, called plastic credits. Each plastic credit represents one ton of plastic that has either been collected or recycled. In Ghana, funds from this Bond will support a community-based project to expand the number of waste collection and recycling sites in Accra (World Bank 2024).[70] As previously mentioned, there are also several examples of financing plastic recycling systems, including from several African countries such as Rwanda, Kenya, and Senegal.

The private sector has a key role in to play in terms of finance, technology, and circular business models in tackling plastics pollution. Private businesses in the form of recyclers and collection centres are part of the solution, by collecting, sorting, and aggregating waste found on the beaches, in streets and landfills, or sourced directly from households. Such recyclable wastes, including plastic items, can be taken to buy-back centres or formal recyclers. Financing these small and medium size enterprises should form part of the implementation of the NPMP.

UNEP is in the process of developing a 'Global Statistical Guideline on Measuring Flows of Plastic along the Lifecycle' which is expected to be ready by the end of 2024. The target users of this statistical guideline would be the national statistical offices and other relevant organizations responsible for production of statistics on plastics, as well as other interested organisations at the national, regional, and global level. The guideline, once finalised, can be a useful tool that Ghana can reference in complementing its work on plastics and ensuring that it is done through evidence-based policymaking and enforcement approaches.

While each country is best positioned to understand its own national circumstances related to addressing plastic pollution, in marine and riverine environments, such pollution can also pose a transboundary threat that needs to be tackled, together with its impacts, through a full-life-cycle approach. There is ongoing international action in developing an internationally binding instrument on plastic pollution, including in the marine environment which acknowledges that some legal obligations arising out of such an instrument will require capacity-building and technical and financial assistance in order to be effectively implemented by developing countries and countries with economies in transition.[71] Given the extent of the plastic pollution problem in Ghana, it would be critical to continue its strong engagement in the new global plastics treaty negotiation process. The regional seas programmes, such as the Abidjan Convention for Western African region, can play a key role in developing and implementing a regional approach to tackling the transboundary aspects of plastic pollution in the region.

[70] The World Bank's seven-year $100 million Plastic Waste Reduction-Linked Bond provides investors with a financial return linked to Plastic Waste Collection Credits, Plastic Waste Recycling Credits (collectively, plastic credits), and Verified Carbon Units (carbon credits) expected to be generated by two projects. The selected projects in Ghana and Indonesia aim to reduce and recycle plastic waste in vulnerable communities, cutting plastics leaking into nature and oceans. The plastic collection and recycling projects in Ghana and Indonesia are, however, not themselves World Bank projects. (World Bank 2024).

[71] United Nations Environment Programme (2022). Resolution 5/14. End plastic pollution: Towards an international legally binding instrument [*UNEP/EA.5/Res.14*]. Available at https://digitallibrary.un.org/record/3999257/files/UNEP_EA.5_RES.14-EN.pdf (Accessed: 3 May 2024)

Box 2. Working Groups under the Ghana National Oil Spill Contingency Plan.

Five working groups established under the NOSCP are:

1. Administration Working Group
This working group handles matters relating to: legal, finance, documentation, claims, and press

2. Operations Working Group
This working group handles matters relating to: surveillance, mechanical recovery at sea, dispersant application at sea, logistics, and shoreline clean-up

3. Environment Working Group
This working group handles matters relating to oil pollution at sea and on the shoreline (fine sand, coarse sand and rocky, mangroves and lagoons and waterbodies). The group is also responsible for issues relating to disposal sites, public health, wildlife, and sensitivity mapping

4. Chemicals Working Group
This working group handles matters relating to dispersants and other chemicals

and

5. Waste Management Group
This working group handles matters relating to: storage sites, recovery, treatment, final disposal sites

b. National oil spill preparedness and response

Overview on the National Oil Spill Contingency Plan

The Environmental Protection Act 1994 (Act 490) and the Maritime Pollution Act 2016 (Act 932) are the key legal instruments that govern acute oil pollution in Ghana. The EPA, as the designated National Authority under the National Oil Spill Contingency Plan (NOSCP) 2021, is responsible for response at sea and for shoreline response in Ghana. A NOSCP Steering Committee and five Working Groups have been established under the NOSCP (see Box 2).

The NOSCP includes a shoreline evaluation and response plan, an in situ burning policy and an oiled waste management plan. The NOSCP was last updated in 2021 with support from the Global Initiative for West, Central and Southern Africa (GI WACAF), which has been implemented by IMO in collaboration with IPIECA since 2006. Spill contingency plans for western and eastern regions of Ghana (at regional/district levels) are, however, yet to be developed.

The NOSCP's 3-tier response is based on the following spill scenarios: Tier 1 – a small spill up to 10 tonnes requiring a local response; Tier 2 – a medium spill between 10 and 1000 tonnes requiring regional and/or national assistance; and Tier 3 – a large spill above 1000 tonnes requiring national assistance. While there are Tier 1 plans (at operator level) in place in Ghana, there are, as yet, no Tier 2 plans, especially at district levels, including for oil contaminated shoreline response.[72] Furthermore, the NOSCP also does not cover inland waters, e.g. originating from the Volta River basin, nor road accidents.

[72] Meeting minutes from technical segment at the National Validation Meeting held in Accra on 19 March 2024.

The EPA is responsible for the update of the NOSCP and is the Agency through which Ghana can ask for international assistance whenever there is a spill incident in Ghana. During incidents categorized at Tiers 1 and 2, the EPA serves as a vehicle to provide national support to industry as required. The EPA holds overall responsibility for Tier 3 oil spill response. Most of the exploration and production companies in Ghana are members of the Oil Spill Response Limited (OSRL) who has leased some of its equipment stock to these companies. Other MDAs such as the Ghana Navy, GMA and GPHA support the EPA through, respectively: coordinating rescue and saving of life; advice on ship safety, structural integrity and stability of maritime casualties; and matters relating to sea dumping.

An updated Sensitivity Atlas for Ghana's coastal environmentally sensitive areas was completed in 2023. It identifies sensitive assets, including hotels, landing beaches, towns, mangroves, salt production centres, harbours, estuaries, and emissions impact on such assets. This will, however, need to be further tailored for application for oil spill contingency planning, which follow best practice guidelines established by International Petroleum Industry Environmental Conservation Association (IPIECA), IMO and International Association of Oil and Gas Producers (IOGP) (International Association of Oil and Gas Producers *et al*. 2016).

Spill response exercises, plus desk-top and field deployments are a primary method to acquaint national and local Government and industry stakeholders with the NOSCP and the roles of each entity within the plan. Joint training and exercises are conducted at the national level once a year. However, since most of the companies operate from Sekondi-Takoradi (in the Western Region), these companies also conduct some trainings and exercises at the regional level at Takoradi for their staff located there, as elaborated below. In such cases, the relevant MDAs at that level are most often invited to such trainings and exercises.

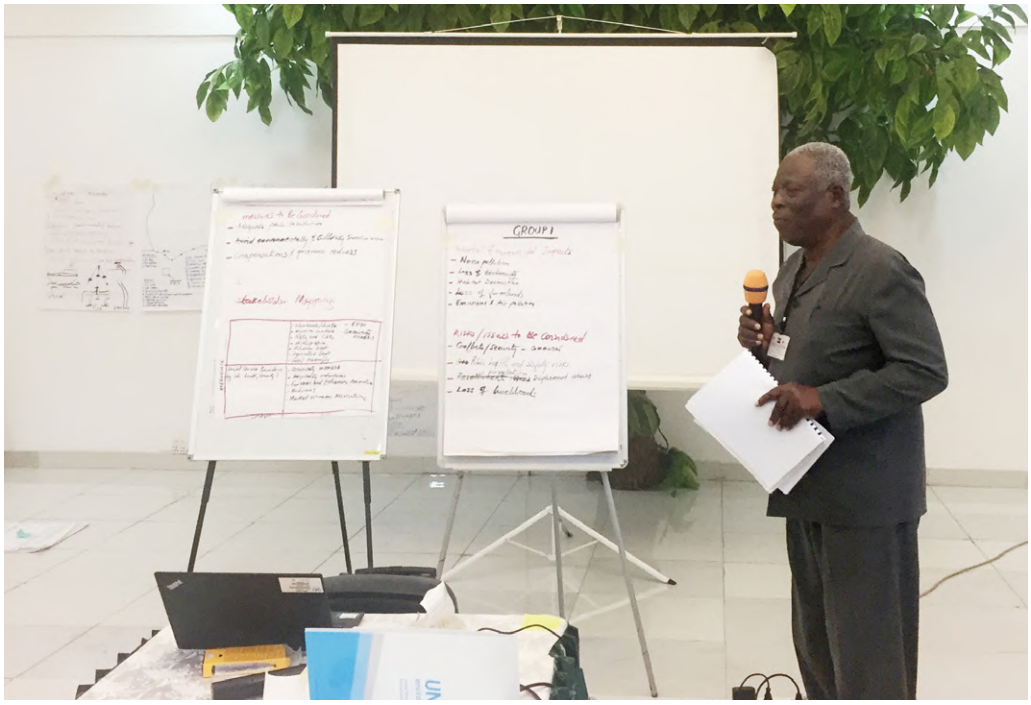
Implementation of IMO Conventions
The GMA is the authority responsible for implementation of IMO Conventions and coordinates the activities of the various competent authorities in the implementation of IMO Conventions in Ghana. Under the Maritime Pollution Act 2016 which domesticates the OPRC Convention, oil spill incidents are required to be reported to the GMA, which would then be transmitted to the EPA; together, the two institutions assess the scale of the spill and decide upon the necessary action to be taken. Furthermore, as part of its daily operations, the GMA issues permits to vessels operating in Ghanaian waters, which includes a condition mandating prompt reporting of spills to the GMA.

The GMA has also undertaken several monitoring measures in anticipation of environmental concerns related to shipping activities. It has procured an oil spill response vessel which will be deployed offshore to deal promptly with oil spill incidents resulting from oil production, storage and offloading, and oily wastes from other vessel activities. It has also procured patrol boats to undertake regular patrols to check activities such as illegal bunkering, fuel smuggling and other activities that may result in pollution. Furthermore, it has established branch offices along the western coast and inland sector (Volta Lake) to monitor/control oil pollution as well as plastic litter incidents.

Training and equipment

Over the years, Ghana has benefitted from a joint industry and IMO regional initiative known as GI-WACAF, which has supported biannual national exercises on national oil spill contingency planning as well as regional and sub-regional trainings on a range of issues, including shoreline clean-up and assessments, waste management, the incident management system and net environmental benefit analysis (NEBA) in oil spill response. A national dispersant use policy has been developed; however, there is still ongoing work on the pre-approval process for dispersants to guide industry use.[73] A contingency plan for the safety of oiled wildlife is also under development (Ghana-Country Profile 2019).

Ghana has also been part of a progressive series of regional trainings organized by UNEP and the Norwegian Coastal Administration (NCA) under the UNEP-Norway Oil for Development partnership, which has focused on strengthening national oil spill preparedness and response. The NCA also conducts bilateral training exercises directly with relevant authorities under the OfD country programme in Ghana. From the operators' side, Tullow Oil Ghana routinely engages in first responder training with coastal and fishing communities. Participants for such trainings are selected by the communities themselves.



National Training Course for Civil Society and Local Government on Oil and Gas Exploration and Production held in Ghana 2018.
© UNEP/Chidinma Zik-Ikeorha

[73] The use of dispersants is considered as a second option, with a public list of approved dispersants made available by the EPA.

During consultations, the EPA indicated the need for additional dedicated trainings for:

- each of the working groups established under the NOSCP on their respective roles and responsibilities in exercising the NOSCP (see also Box 2),
- monitoring offshore oil spills, and
- trainings on keeping of records for compensation in the context of claims processing.

While regional offices of the relevant authorities have also been part of some of the national trainings, Tier 2 response capacities at regional and districts level needs to be further strengthened. Capacity building needs at the GMA relate to upskilling for its staff in the Technical Services Division in safety, security, and environment issues.

As per the equipment inventory conducted by the NCA in August 2023, the different facilities in Ghana have sufficient equipment of good quality and in good condition to respond to the type of spills they would most likely have to handle. The assessment found that Tullow Oil Ghana conducts monthly training with their spill equipment. OSRL representatives at Tullow also run IMO level 1-2-3 training regularly. Tullow Oil Ghana maintains a staff of approximately 100 trained responders available. There are ongoing discussions between Tullow Oil Ghana and ENI Ghana to collaborate on oil spill response. ENI also runs IMO level 1 training of responders on a regular basis for both onshore and offshore personnel. NCA found the capacities at Tullow Oil Ghana and ENI Ghana to be sufficient.

The assessment, nevertheless, put forward recommendations for improvements such as:

- For Volta Lake Transport Company (VLTC) in Akosombo – finalise and put into place the oil spill contingency plan, including equipping the facility with necessary new and upgraded equipment for potential response to spills in the Volta Lake. OSCP with action-cards for most likely incidents should be prioritized. Maintenance plans for equipment and training and exercise plans for the crews need to be put in place.
- For Ghana Petroleum Mooring System (GPMS) in Tema port, capacity for offshore response can be improved through drills and response exercises.
- For Ghana Port and Harbours Authority (GPHA) in Tema port, NCA recommends air filled booms on tugboats, with trainings for crew and captain operating in formation with towing vessels.
- For Ghana Oil (GOIL) in Takoradi, the existing stockpile of sorbents need to be exchanged to meet the requisite capacity.

Overall, the NCA assessment emphasises the need for operationalizing further the NOSCP by testing the response time needed for tugboat offshore to support standby vessel in collection or booming operations. NCA recommends regular training on booming operations collecting oil and requests Tullow Oil Ghana and ENI Ghana to consider improving the oil spill response by including high speed systems on their standby vessels (NCA 2023).

Human resources and equipment are shared between industry and government during exercises and/or training. While this arrangement is provided for under the framework of the NOSCP, no formal agreement exists between industry and government for the sharing of equipment. The lack of a formal agreement has been attributed to legal requirements associated with paying for use of equipment owned by industry operators, which is limiting for Government authorities such as the EPA.

In Ghana, there is a good level of integration between the NOSCP and national disaster management institutions. Both the NOSCP and a national emergency response plan which recognize multiple hazards and multiple risk scenarios are necessary to bring the full capabilities of Government to the required response effort (UNEP 2024). The National Disaster Management Organisation (NADMO) is the primary authority responsible for national disaster management, preparedness, and response and is actively involved in developing district and community-level response and contingency plans. NADMO's district and zonal offices establishes early warning systems and structures for first line of response.[74] NADMO is part of the NOSCP Steering Committee and is engaged in developing contingency plans for shoreline communities. It is also part of the Operations and Waste Management working groups under the NOSCP.

Nonetheless, there is need for better coordination between NADMO and the EPA especially at the district and local community levels. Neither the EPA nor NADMO involve the other while undertaking awareness-raising campaigns at the community level for oil spill and disaster preparedness and response, respectively. This lack of coordination can result in duplication of efforts and inefficient use of limited resources.

Transboundary considerations in spill preparedness and response
Ghana's Action Plan 2022 presented at the GI-WACAF Regional Conference included transboundary cooperation as one of its priorities. A regional oil spill contingency plan has been put in place, with Nigeria selected as the oil spill equipment hub under the Abidjan Convention. Nevertheless, there is no transboundary cooperation agreement between Ghana and its neighbours. Ghana is presently exploring bilateral negotiations with its neighbours; however, due to the maritime boundary/demarcation disputes and the multilingual nature of these negotiations, these may take more time to come to fruition. Both Cote d'Ivoire and Togo have also raised concerns relating to the potential impact of Ghana's oil and gas sector in the marine environment through transboundary pollution.

Given that the maritime delimitation dispute with Cote d'Ivoire has now been resolved, discussions on transboundary cooperation may be again revisited. In 2015, negotiations on dispersants use and equipment sharing had been initiated. Joint/transboundary trainings/ dialogues on notification systems, early warning systems and monitoring of offshore spills are some areas of potential cooperation.

[74] The mandate of NADMO comes into effect when a hazard or event disrupts the functioning and livelihood of a community and where an emergency arising from mismanagement can impact social cohesion, housing, and lead to health hazards triggering environmental degradation.

V Key Findings and Recommendations

This chapter distils the key information and conclusions drawn from the research and consultations undertaken during the CNA process. It aims to highlight the main priorities and next steps that will be conducive to strengthening ocean governance in Ghana.

FINDING 1:

Ghana has several laws, regulations, and policies in place that address aspects of environmental governance and management of the coastal and marine space, with a few notable exceptions.

Strong environmental laws and institutions are essential to achieving environmental goals and developing effective responses to pressing environmental crises. Consistent, fair, and effective implementation of environmental law strengthens the perceived legitimacy of government action and builds public confidence in institutions (UNEP 2023a). The law can also play a significant role in signposting Ghana's international commitments and signal true intent to action. Based on CNA findings, several important environmental policy and legal gaps remain, which warrant further analysis. The 2023 UNDOALOS Oceans Governance Study also echoes this finding and highlighted gaps in the current relevant national legal framework in Ghana.

A few keys areas that are essential to mainstreaming environmental goals and would benefit from dedicated framework laws have been identified below:

- Climate issues are not yet fully addressed across policy and legal frameworks, including in requirements for conducting ESIAs for new projects. A national framework law on climate change can provide legislative strength and ensure policy coherence across environmental and sustainable centred policies going forward.
- A new regulatory framework is also needed to operationalize the National Plastics Management Policy (NPMP).
- To address marine pollution, environmental regulations are needed in the offshore oil and gas sector, specifically related to decommissioning
- A comprehensive national framework policy that integrates aspects of sustainable oceans governance relating to the protection of marine and coastal environments, fisheries, shipping, energy and tourism sectors, and marine and coastal pollution should be developed
- Drafts that have been initiated like the draft Integrated Coastal and Marine Policy by MESTI should be finalised and passed.
- The absence of an overarching policy framework for MPAs in Ghana needs special attention. Although the fisheries laws are consistent with international conventions and agreements, they do not adequately address all conventions and obligations, including the provisions of the Agreement on Port State Measures ratified in 2016 and many recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT).

Ghana has already made important progress in enacting several legal instruments that address issues related to ocean governance.

Ghana has already made important progress in enacting several legal instruments that address issues related to ocean governance. Annex 5 of this report provides the current status of the enactment of key primary and secondary legal instruments that govern the coastal and marine space in Ghana.

Recommendations:

5.1.1 Prioritise finalising legal instruments currently in their draft form and enact them into law. Primary and secondary legal instruments like the Wildlife Resources Management Bill 2022, National Biodiversity Policy 2017, Ghana Hydrological Authority Bill 2022, National Policy for the Management of Marine Fisheries from 2022-2026, are still in their draft forms into law and should be finalised and enacted into law and reflect Ghana's relevant international commitments, including on climate change and protecting biodiversity and ecosystems from marine pollution.

5.1.2 Finalize the draft Integrated Coastal and Marine Policy which will address all governance aspects of the marine and coastal space. There is a draft currently being developed by MESTI which will help put in place a national framework instrument that addresses all governance aspects of the marine and coastal space. The ongoing sustainable oceans planning (SOP) provides an opportunity to maximize stakeholder inputs into this draft, as well as to ensure policy coherence between the Integrated Coastal and Marine Policy and the SOP. Once finalised, it will reflect Ghana's international commitments.

5.1.3 Improve alignment and policy coherence across sectors such as climate, energy, and environment. While the oil and gas sector continue to contribute towards Ghana's GDP, greater alignment between Ghana's climate, energy and environmental/biodiversity policies and commitments is recommended to support diversification of Ghana's offshore energy sector, working towards net zero emissions and consideration of potential renewable energy sources. Greater public dialogue on this policy alignment is strongly encouraged which could be undertaken within the ongoing SOP process.

National Validation Meeting for the Capacity Needs Assessment Report held in Ghana in 2024.
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FINDING 2:

Ghana is a Signatory and Party to several key international agreements, treaties, and conventions. However, incorporating these international instruments into domestic law is still pending.

A State which is party to an international treaty, convention or agreement must ensure that its own domestic law and practice are consistent with relevant international instrument. As Ghana is a dualist country, this is not automatic but done through a process of incorporation, laid out in the Ghanaian constitution. Annex 5 of this report lists the relevant key international agreements, treaties and conventions to which Ghana is signatory, and identifies the implementing agencies and the ratification status of these instruments.

The country has made significant commitments under international instruments, including pledges to establish protected areas for rare ecosystems and endangered species, with a target of 30% restoration of degraded terrestrial and marine ecosystems by 2030. Ghana has also committed to sustainably managing 100% of its ocean areas by 2025, demonstrating proactive engagement in ocean conservation efforts. On climate change mitigation, Ghana aims to reduce global methane emissions by 30% and lower its greenhouse gas emissions by 15% relative to a business-as-usual scenario by 2030.

The OGS study (UNDOALOS 2023) notes that Ghana has yet to enact domestic legislation to implement important international instruments and commitments (see also Annex 5). Domesticating these conventions through national legislative instruments will empower and enable the relevant mandated institutions to implement Ghana's international commitments on protecting the marine environment and preventing marine pollution. For some conventions, alignment may require regional collaboration, for example where one nation lacks the facilities to manage certain drilling waste, a better-equipped neighbouring country may provide this support, necessitating transboundary transportation. In the absence of formal domestication, MDAs attempt to incorporate the wider principles or approaches espoused by such international agreements through mainstreaming them into existing secondary legislative instruments and processes, such as policies and development plans.

Recommendations:

5.2.1 Prioritise incorporating international instruments into domestic law and join other relevant international treaties, agreements, and conventions. Ghana should consider completing the ratification process, contextualised domestically as appropriate, for the Additional Protocols to the Abidjan Convention on Pollution from Land-Based Sources and Activities (LBSA), on Integrated Coastal Zone Management, on Sustainable Mangrove Management, and on Environmental Norms and Standards for Offshore Oil and Gas Exploration and Exploitation Activities; the Hong Kong Convention; the Basel Convention; the 1988 SOLAS Protocol; the International Convention on Load Lines 1966 and its 1988 Protocol; the Convention on the International Hydrographic Organization as amended by the 2005 Protocol; the 1996 London Protocol and the International Tribunal for the Law of the Seas 1982. Ghana should consider joining additional relevant international treaties, agreements and conventions such as the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, 1991; the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention), 1996; International Convention on Civil Liability for Bunker Oil Pollution Damages, 2001; and the Nairobi International Convention on the Removal of Wrecks, 2007.

FINDING 3:

Government institutional mandates relevant to oceans governance are highly fragmented and spread across multiple Ministries, Departments and Agencies.

Clear mandates and cross-sectoral coordination, across and within institutions, are essential for effective governance.

In Ghana, the responsibility for oceans governance is distributed among various Ministries, Departments, and Agencies (MDAs) with specific mandates. LUSPA, under the Ministry of Local Government, Decentralisation, and Rural Development, leads marine spatial planning, while the Wildlife Division of the Forestry Commission manages sensitive coastal areas. The Energy Commission regulates offshore energy operations, while the GMA enforces maritime conventions and safety regulations. The EPA is the national environmental regulatory body in Ghana and is also the designated national authority in charge of oil spill preparedness and response in the country. The GMA advises the EPA on matters relating to sea dumping (of waste), including the permitting and reporting of emergency dumping of material at sea and during an oil spill. Additionally, the Fisheries Commission oversees and regulates the fisheries sector, with support from the FEU and Ghana Navy.

There is a need for better clarification on the active role of the GMA, vis-à-vis the role of the EPA, in operationalizing the National Oil Spill Contingency Plan. The GMA anticipates this mandate overlap as potentially posing challenges when coordinating with other agencies in actual spill situations. Similarly, there is a lack of consensus among MDAs on the suitable lead implementing authority for planned conservation efforts such as the establishment of MPAs. While the institutions are broadly clear about their mandates, the range of multiple actors involved in the governance of coastal and marine space poses the challenge of duplication of efforts and resource inefficiency. Clear mandates and cross-sectoral coordination, across and within institutions, are essential for effective governance (UNEP 2023a).

Recommendations:

5.3.1 Clarify the scope of institutional mandates to ensure MDA's have defined functions and responsibilities. Further dialogue between MDAs regarding their respective functions and responsibilities is necessary to ensure precise limits and scope under each institutional mandate. The current SOP process may consider facilitating such dialogue between the MDAs as it defines roles and responsibilities in ocean governance.

5.3.2 Appoint an institutional lead on Marine Protected Areas (MPAs) to avoid duplication of efforts. Ongoing efforts relating to the establishment of MPAs will require better clarification of mandates (and coordination) between MDAs to avoid the emergence of multiple initiatives or platforms on this, especially in the absence of a legally mandated authority gazetting such areas.

5.3.3 Delegate authority to institutions with technical expertise and capacity to streamline mandates. Where possible, delegating authority to the institution possessing greater technical expertise and capacity should be considered, to streamline implementation of institutional mandates where there are potential overlaps or lack of clarity. However, such decisions will require a higher-level authority to delegate institutional roles when institutional mandates remain unclear.

FINDING 4:

Ongoing initiatives on strengthening ocean governance in the country lack the required level of institutional coordination to maximise impact.

The issue of ocean governance in Ghana is tackled in a piece-meal manner, with institutions operating in silos and struggling with compliance monitoring, resource efficiency and policy incoherence. A formal institutional coordination mechanism that addresses the fragmentation of ocean governance mandates is required. Disjointed stakeholder efforts and inconsistent coordination can stymie the effectiveness of conservation efforts. Stakeholders perceive this lack of institutional coordination and its effects on policy coherence as interfering with the operationalisation of existing legal and policy instruments.

The issue of ocean governance in Ghana is tackled in a piece-meal manner, with institutions operating in silos and struggling with compliance monitoring, resource efficiency and policy incoherence.

A robust institutional mechanism is needed to strengthen collaborative and coordinated management of the shared oceans space, harmonize implementation of mandates, and negotiate inevitable trade-offs in the use and access of oceans space. Such an institutional mechanism would also be best placed to oversee the implementation of Ghana's SOP when developed.

The need for greater stakeholder engagement, including from traditional and community-based structures as well as civil society organizations, was also highlighted, especially in the context of enhancing public communications between government authorities, development operators and affected communities, as the case with washed up sargassum, but also related to fisheries and oil and gas activities.

Recommendations:

5.4.1 Formalize a national coordination mechanism to ensure smooth coordination between key governmental and non-governmental institutions involved in ocean governance. The mechanism should be formalized with a clear mandate, terms of reference, standard operating procedures, and must necessarily be provided with an ear-marked budget to enable and ensure its functioning. A distinct assessment on sustainable financing options for such a mechanism is also recommended. Based on the results of recommendation 5.3.1, the MDAs can identify the most appropriate institution to help lead the establishment of this coordination mechanism.

This national coordination mechanism should be composed to best reflect the Ghanaian context, existing technical capacities, and expertise of the relevant institutions operating in the country. Below are a few options that may be considered, drawn from experiences from other countries:

Option A: The existing SOP Technical Working Group may be updated and formalised into a permanent coordinating structure. The Environment Directorate in MESTI, which is currently undertaking the drafting of an Integrated Coastal and Marine Policy for Ghana, may assume a secretariat role to help steer the sustainable oceans plans once approved.[75] There will, however, be a need for enhanced capacity development at the Environment Directorate to ensure that it is equipped to carry out the additional responsibilities that will be involved in undertaking a secretariat role, especially given its already limited human resources and budgetary capacities.

Option B: The government may consider the empowerment of one of the existing regulatory institutions with the coordinating mandate to serve as the lead ocean governance institution.[76]

[75] The rapid readiness assessment for transition to sustainable blue economy undertaken in 2023 for Antigua and Barbados presents a similar structure as a recommended way forward. Here, the Department for Blue Economy under the Ministry of Social Transformation and the Blue Economy was recommended to undertake the secretariat role while the National Oceans Governance Committee (NOGC) took on the lead role in implementing the National Oceans Policy that the NOGC was then developing. (Commonwealth Secretariat 2023a)

[76] The rapid readiness assessment for transition to sustainable blue economy undertaken in 2023 for Trinidad and Tobago recommends the appointment of a ministry or department to lead the sustainable blue economy (SBE) agenda, in addition to the reappointment of the inter-ministerial ICZM committee with representation from all key government ministries/departments that intersect with SBE to coordinate and deliver the SBE agenda. (Commonwealth Secretariat 2023b)

Option C: A new inter-ministerial multistakeholder coordinating institution may be established which is staffed by personnel seconded from the relevant mandate-holding MDAs who will bring their respective institutional expertise, thereby strengthening its overall domain knowledge to identify and address cross-sectoral issues and gaps. Such seconded placements could also help foster inter-institutional relationships, build technical knowledge, and develop a better understanding of the existing activity across MDAs. However, the mandate of this new institution as a coordinating entity must be clearly defined and distinct from the regulatory mandates of the existing institutions to avoid confusion in an already crowded space.

5.4.2 Under this national mechanism, establish distinct levels of coordination to ensure cross-cutting representation across different tiers of government. Following inputs received from stakeholders during the capacity assessment process, if a new national institutional coordination mechanism is set up for the implementation of the SOP, this mechanism can be composed of three tiers of coordination:

1. *High-Level Steering Committee* – This Committee will be comprised of the chief executive officers of the MDAs for establishing national strategic priorities, and for decision-making on international and domestic resource mobilization for achieving SOP objectives. This Committee should be able to channel resources to areas where they are most needed, building capacities and facilitating coordinated actions by supporting collaborative action.
2. *Technical Working Committee* – This Committee will be comprised of the technical officers nominated from the MDAs with relevant regulatory and permitting mandates, including the regional and district governments. This would be the core working committee for enhancing policy coherence and institutional coordination in the implementation of the SOP.
3. *Multi-stakeholder Monitoring Committee* – In addition to the MDAs, this Committee will be composed of representatives from civil society organizations, academia, and the private sector. The key responsibilities of this committee would be to (i) monitor the implementation of the SOP by the technical working committee, (ii) facilitate stock-taking on ongoing initiatives to evaluate the effectiveness of the current SOP, (iii) coordinate with the government on ongoing non-governmental initiatives relevant to the coastal and marine space, and (iv) function as a stakeholder grievance platform.

5.4.3 Engage with traditional and community-based governance structures to strengthen local engagement in ocean governance. District assemblies and local representatives, as well as community-based and traditional structures must also have clearly defined roles and responsibilities as part of an established national coordination mechanism for ocean governance. Existing local government engagement with the community and public needs to be strengthened.

5.4.4 Support public outreach and feedback campaigns between agencies and affected communities to ensure transparency and address grievances. Implementing agencies such as the EPA, Petroleum Commission and Fisheries Commission should engage in regular public relations and feedback campaigns with the affected communities to address their grievances and to combat misperceptions brought about by poor communication. Where necessary, gender specialists should be on hand to address gender-differentiated stakeholder grievances.

5.4.5 Build synergistic collaborations between government and academia, research, and industry to aid evidence-based policymaking and encourage public dialogue. This report mentions multiple ongoing current collaborations that can be used as guiding examples.

FINDING 5:

Insufficient institutional capacity such as severe staff shortage impedes effective regulatory implementation and environmental oversight and compliance monitoring.

Periodic specialist training will help staff with regulatory responsibilities keep abreast with the latest developments in the field.

Institutions are the primary mechanisms for implementation, monitoring, and enforcement of law. Effective and well-implemented laws coupled with empowered and capacitated institutions provide the critical enabling environment necessary to deliver on international commitments (UNEP 2023a).

While the existing staff of the Environment Directorate, EPA and LUSPA possess the educational and technical qualifications to carry out their core mandated responsibilities, continuous upskilling and periodic training on environmental management in oceans governance should be prioritised. Periodic specialist training will help staff with regulatory responsibilities keep abreast with the latest developments in the field. Such trainings are also necessary to sustain institutional knowledge despite significant staffing changes. **Annex 8** of this report includes a training/capacity building plan for MDAs on some of the key technical knowledge and skills necessary to strengthen institutional capacities in oceans governance.

There is limited budgetary and human resources capacity at the Environment Directorate with 50% staff vacancies resulting in an increased work burden on existing staff. At the EPA, while the staff numbers have increased overall, it receives no separate, regular governmental funding. The management of oceans and marine issues is heavily reliant on donor funding and donor priorities, including training and capacity-building activities. At LUSPA, only 11.5% of all staff positions are filled, i.e., there is an 88.5% shortfall of available positions filled.

As stated before, LUSPA, while highly skilled and capacitated on spatial planning on land, indicates a critical need for technical skills related to marine spatial planning which was mandated to it in 2016. LUSPA remains unable to effectively implement its coordination mandate for marine space due to its staffing challenges, which is compounded by limited technical capacity.

Recommendations:

5.5.1 Fill vacant staff positions to ensure effective implementation of institutional mandates, with due consideration given to gender responsive recruitment. Critical staff vacancies at the Environment Directorate and LUSPA must be filled as a matter of priority to enable the effective implementation of its existing mandates. Care should be given to ensure a gender responsive recruitment process that facilitates better gender balance within the workforce.

5.5.2 Establish periodic institutional training programmes to remain up to date with legal and technological advancements. Gender mainstreaming and responsiveness should also be addressed in these trainings. The Environment Directorate, EPA and LUSPA should develop institutional policies for gender responsive capacity building which considers and enhances the contributions of both men and women in the workforce. Designating an education focal point will help facilitate regular trainings on new advancements and technologies pertinent to environmental management in oceans governance, including through collaborations with academic institutions already providing similar training courses. Stakeholders also recommended requiring trained personnel to train other staff upon completion of a capacity building activity. Establishing a baseline of the existing staff's knowledge and technical know-how is important to accurately plan future trainings.

5.5.3 Extend training outreach to district and local government so they can benefit from capacity-building initiatives. Capacity-building initiatives should necessarily involve the mandated sub-national authorities and district assemblies who interface regularly with the local communities. A Training of Trainers/Instructors programme may be developed to support scaled-up delivery of multiple training courses and expand training outreach to District Government officials. Gender mainstreaming and gender-based targets should be established as part of the training programme.

5.5.4 Provide periodic specialized training on EIAs, site inspection and data analysis to strengthen compliance monitoring capacities. Providing the national and sub-national staff of the regulatory agencies with regular specialized training on EIAs, site inspections, audits, environmental compliance monitoring, and data collection, analysis, and interpretation will strengthen compliance monitoring capacities.

5.5.5 Strengthen formal collaborations with academic institutions that could offer regular professional courses and certifications to government staff. To facilitate sustained capacity-building efforts, MESTI may consider establishing formal collaboration with National Universities and public training institutions such as the University of Ghana, University of Cape Coast (Africa Centre of Excellence) and Regional Maritime University. These collaborations can benefit staff in numerous ways – from short executive professional courses and certifications to updated trainings on EIA and knowledge sharing on emerging topics like energy transition and ocean literacy.

FINDING 6:

Data management related to the marine environment is fragmented and requires further streamlining and strengthening.

Regular and systematic data monitoring of key environmental parameters is crucial for evidence-based policymaking and for the sustainable management of Ghana's coastal and offshore ecosystems. For instance, depending on current data on fish stocks, the regulatory measures relating to closed fishing areas and seasons, mesh size, number of fishing licenses etc. may need to be modified.

Several types of environmental data, ranging from biodiversity to GHG emissions to fisheries resources, are currently held across various governmental and non-governmental institutions, with each holding distinct and/or multiple datasets. Multiple data management systems and databases makes it difficult to identify clear data gaps. There is also no central repository at the EPA for all monitoring reports.

The fragmentation of data management systems and inadequate data collaboration between institutions, suggests a gap in efficient data sharing and coordination among different agencies. There is no requirement or guarantee that private and publicly held data will be publicly accessible, and some information may be withheld if considered to be sensitive and/or a potential revenue source. This poses a challenge to comprehensive data access and sharing, further limiting data transparency and public access to information.

The lack of sufficient funding and sustained financing for data generation and management is yet another challenge to ensuring a common or shared national environmental data management system, with high dependence on external funding to collect the necessary data. Training on data collection, analysis and maintenance has been primarily donor-driven and infrequent.

Recommendations:

5.6.1 Establish a national marine monitoring programme to ensure data collection on key parameters of the marine ecosystem. To reduce dependency on external funding sources and parties for national environmental data collection and management, this report recommends setting up a National Marine Monitoring Programme to regularly collect data on key parameters crucial for understanding the state of the marine ecosystem including nutrient levels, and fish stock conditions. New and very cost-effective methods based on remote sensing are available to monitor and streamline variables important for ocean management. This program will allow and encourage regular sampling, monitoring fish stocks, tracking primary productivity, ascertaining maximum allowable catches and tracing transboundary pollution issues.

5.6.2 Facilitate data-sharing and management to encourage harmonization across data formats. Coordination amongst database managers across MDAs is critical to avoid duplication of ongoing and planned efforts and for cost savings. A dialogue between MDAs on the importance of data sharing, management and its cumulative benefits should be facilitated. This dialogue should emphasise the importance of harmonization across data formats and increasing public accessibility. A centralised platform such as the EIN or the One Ocean Hub, or through agreed "data sharing contracts" between MDAs can be good practice examples. FishCoM Ghana, being established by ACECoR, is a good practice example of establishing data sharing processes amongst researchers, fisheries managers, and policymakers.

5.6.3 Ensure sustainable data management protocols. Where a centralised data platform is being established, ensuring its sustainability should be considered a high priority from the design stage. Ensuring collective institutional buy-in from the relevant MDAs will be instrumental. Data management systems will require dedicated budgetary provisions for long-term human resource support and physical maintenance necessary to maintain full functionality. Capacity building efforts should include end-to-end training on data from collection, analysis, maintenance, management, and storage. Additionally, training should highlight the data gaps created because of sex-disaggregated data and emphasise the importance of collecting gender-specific information, UNEP has helpful guidance material on this topic.[77]

Local villages visited in the Keta region, 2018.
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[77] https://www.unepfi.org/themes/ecosystems/gender-responsive-strategies-in-nature-risk-management/

FINDING 7:

National development planning does not adequately address environmental sustainability concerns nor the co-existence of multiple sectors and resource users.

A well-managed and healthy coastal biodiversity and ecosystem are vital to the socio-economic status of the country which depends significantly on these activities.

As discussed in Chapter 4. B.1, multiple development sectors and stakeholders occupy the Ghanaian coastal and marine environment, including offshore oil and gas, fisheries, tourism, and maritime shipping. A well-managed and healthy coastal biodiversity and ecosystem are vital to the socio-economic status of the country which depends significantly on these activities. Gender-differentiated impacts of development activities are another important factor that should inform policy and decision-making in the coastal and marine space.

There are several spatial tools which can be used to inform development planning especially when engaging with and balancing priorities between multiple sectors and stakeholders, including women in coastal communities, artisanal fishers, and other community groups. Such tools include MSP, as well as SEAs, which consider potential environmental and social impacts to guide policymaking, development planning and programming. SEAs have the potential to inform and feed into the MSP processes.

Ghana already has experience and technical capacities to undertake both MSPs and SEAs. However, given the relatively recent inclusion of the MSP mandate in its functions, LUSPA does not yet have the adequate technical capacity to fulfil its coordinating role for the marine space. LUSPA highlighted needing support in generating a development baseline map as well as guidelines for planning standards in the marine space.

As the lead agency mandated to carry out SEAs, the EPA has carried out several SEAs in the past in collaboration with the other line ministries and agencies. As such, it has adequate capacity to carry out such assessments. However, due to recent staff changes, there has been a marked decrease in the in-house technical capacity to conduct SEAs. Additionally, previously undertaken SEAs have mainly focused on the oil and gas sector. Previous SEAs were also reliant on external consultants as they were donor-driven and project-funded. Given the increased attention on ocean governance in Ghana, and with new emerging development sectors such as offshore wind energy, this may be a good opportunity to undertake a new SEA for this emerging sector as an institutional capacity-building exercise, which could also be used to inform ongoing marine spatial planning efforts, as well as the broader SOP national process.

In the case of both MSP and SEA initiatives in the country, the stakeholders consulted emphasised the need for nationally led capacity-building processes, as this would help support follow-up implementation and replication of such initiatives.

Recommendations:

5.7.1 Integrate a cross-sectoral approach to marine spatial development to comprehensively address social and environmental impacts and sensitivities across development sectors. Given the existing national capacity in conducting SEAs and the ongoing capacity-building initiatives on developing MSPs in Ghana, adopting an *integrated approach* to SEAs and MSPs should be considered in moving forward. Adopting such an integrated approach helps ensure that the MSP process (i) defines different development scenarios, (ii) recognizes environmental sensitivities (e.g., biodiversity hotspots, fish spawning areas etc), and (iii) takes into consideration potential social and environmental impacts of different development scenarios, thus placing a premium on environmental

sustainability objectives in the planning process. This approach may be beneficial when considering development planning in emerging sectors, e.g., offshore wind energy, or expanding development sectors, e.g., shipping or tourism, which will increase pressures on the coastal and marine environment.

In this regard, the relatively new staff at the EPA and other relevant MDAs would benefit from a comprehensive training program on integrated SEA and MSP implementation, paying close attention on how to enhance engagement of sub-national/local stakeholders, including affected communities (and women) and traditional governance structures. However, to carry out future development projections, other approaches may be needed e.g. using Strategic Foresight approaches, or National State of Environment and Outlook processes.

FINDING 8:

Existing conservation measures for the protection of coastal and marine environments lack robust implementation and enforcement.

Chapter 4 discusses the multiple pressures and threats to the coastal and marine environment. Environmental management approaches such as ICZM and MPAs can be critical to lending greater protection to key biodiversity areas and ecologically sensitive habitats.

Financial constraints, staff shortage, weak institutional collaboration and regulatory oversight have led to widespread encroachment on protected land, non-compliance, and loss of protected and environmentally sensitive areas.

However, environmental management approaches like ICZM and MPAs are yet to be systematically utilised to manage development activities in the Ghanaian marine environment. As such, there is no single legally mandated institution that leads on issues related to ICZM, although technical capacity and experience exists within mandated institutions such as the EPA.

While Ghana does not have any formally gazetted MPAs, there are at least five designated Ramsar sites. However, even Ramsar sites despite being given a higher degree of protection face enormous pressures, including from pollution, overharvesting of mangroves, sand mining and overfishing. Financial constraints, staff shortage, weak institutional collaboration and regulatory oversight have led to widespread encroachment on protected land, non-compliance, and loss of protected and environmentally sensitive areas.

Transboundary processes that affect the coastal and marine ecosystems must be considered as part of MPAs. Ghana's coastal ecosystems are particularly influenced by the transboundary implications of the GCMLE, one of the largest marine upwelling systems on the planet. However, the absence of a national policy or strategy on MPAs has led to a lack of consensus among key institutions (i.e., EPA, Fisheries Commission, Forestry Commission, and LUSPA) on the lead implementing institution for MPAs in Ghana.

Ghana has rich experience with community-led natural resource management approaches, which should serve as a strong basis for establishing coastal and ocean management approaches at national and sub-national levels. The current model of Community Resource Management Areas (CREMA) has seen great success in forestry management in Ghana, which may be used as a foundation for coastal and marine conservation.

Field visit to wetland areas in Keta region, 2018.
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Recommendations:

5.8.1 Provide an enabling national policy on MPAs to consolidate the effective management of protected areas. MPAs must be established in sites critical to biodiversity, like spawning and nursery habitats. Such MPAs should be supported by an enabling national policy and corresponding institutional coordination structure to facilitate the enforcement of protection measures by the mandated entities. The existing regulations are scattered and will need consolidation for effective management of protected areas. Further follow-up support should be provided towards implementation of the draft MSPs which were developed under the Mami Wata initiative.

5.8.2 Strengthen conservation efforts in existing Ramsar sites to strengthen protection and compliance monitoring. The existing Ramsar sites along the coast need stronger protection and compliance monitoring. The minimal monitoring equipment and vehicles needed to enforce measures to combat encroachments must be prioritized to prevent further loss of critical wetland ecosystems.

5.8.3 Use good practice examples on community-based management. An assessment on the lessons learned from the CREMA experience may be undertaken to evaluate the feasibility of scaling up these approaches in the Ghana context to support efforts in ICZM or MPAs, by involving the local stakeholders directly in the enforcement of conservation measures and management of natural resources.

5.8.4 Strengthen regional cooperation to build trust between countries and ensure effective transboundary conservation and management. Coastal and marine management approaches should address transboundary aspects and engage in regional cooperation to ensure effective conservation and management of coastal and marine ecosystems. Ghana should consider utilizing regional seas mechanisms, such as the Abidjan Convention, to facilitate transboundary cooperation arrangements with its neighbouring countries. The development of marine and coastal planning and management tools within national jurisdiction, in particular MPAs, ICZM and MSP, would also benefit from a regional seas approach. Region-focused development programmes in West Africa supported by international partners, such as the World Bank's WACA project, may also consider supporting transboundary cooperation initiatives, e.g., in data collection and monitoring, which work towards building trust between countries.

FINDING 9:

Marine pollution remains a major threat to Ghana's coastal and marine environment despite the ongoing efforts.

A robust plastic prevention, reduction and containment strategy, that includes transboundary implications must be prioritised.

Plastics, in its various forms pose a significant pollution risk to Ghana's coastal waters, leading to environmental and biological impacts. The threat to marine ecosystems from acute oil spill incidents, especially linked to Ghana's offshore oil and gas sector, is a constant concern. Furthermore, organic pollutants from sewage, and agricultural runoff, are contributing to nutrient enrichment, algal blooms, and contamination of seafood, while persistent organic pollutants from agriculture, industry and urban areas spread into the coastal waters and contaminate seafood. A robust plastic prevention, reduction and containment strategy, that includes transboundary implications must be prioritised.

Recommendations:

5.9.1 Finalize the national policy and regulatory framework on marine plastic pollution to address this growing problem. Ghana should finalize the National Roadmap and regulatory framework for NPMP implementation. The National Action Plan may be localized across local and regional governments and industries. Awareness campaigns and financial mechanisms that support SMEs involved in waste collection and recycling will help bring attention to this pressing issue and encourage lasting behavioural changes. To further enhance these efforts, Ghana should continue its strong engagement in international negotiations for a binding instrument on plastic pollution, with a particular focus on addressing capacity-building and technical and financial assistance needs.

5.9.2 Conduct baseline surveys to assess microplastic presence in seafood, to inform future policy decisions. A survey should be carried out to assess the presence of microplastics in various seafood to address the problem of plastic pollution in Ghana. The results from such a survey will inform policy and management decisions, and progress can be measured against this baseline in moving forward.

5.9.3 Regularly update and exercise the National Oil Spill Contingency Plan (NOSCP) for different emergency scenarios and for strengthening institutional cooperation. National spill contingency plans must be regularly updated as well as exercised for different scenarios, including for spill incidents originating inland and through inland waters. This will help create stronger cooperation between the national government institutions and local institutions. This will also help clarify the roles of the EPA vis-à-vis the GMA in actual spill situations.

Tier 2 contingency plans as well as surveillance and notification systems should be developed and put in place. Spill contingency plans for western and eastern regions of Ghana (at regional/district levels) should be developed. The scope of the NOSCP may be expanded beyond marine pollution, to also look at potential spill incidents originating from inland water bodies such as the Volta basin. Capacity building efforts on management of oil spills should be aimed at all levels of government and involve industry and civil society organizations such as NGOs and fisheries associations.

The recently updated environmental sensitivity maps will need to be further tailored for specific application for oil spill preparedness and response planning, which follow international best practice guidelines established by IMO/IPIECA/IOGP. Port reception facilities too need to be capacitated to handle and manage ships that come into port with oily wastes.

5.9.4 Strengthen oil-monitoring systems by engaging with local community leaders who can assist in cost-effective early-detection and emergency response. Local stakeholders are best placed to immediately detect and report emergencies, oil spill monitoring systems should consider engaging with local fishing communities, women's organisations, district governments, NGOs, and traditional leaders to make early detection cost-effective and efficient. The NADMO and the EPA should further strengthen their coordination when undertaking awareness-raising campaigns at district and local community levels.

5.9.5 Ensure proper decommissioning of existing oil and gas structures to prevent marine pollution risks. The offshore structures that are or will be abandoned or decommissioned should be inventoried and regularly monitored to ensure the safety and prevention of marine pollution.

Ghana could consider enhancing its bilateral negotiations and cooperation on oil spill response with neighbouring countries such as Cote d'Ivoire and Togo.

5.9.6 Encourage regional and transboundary cooperation on spill preparedness and response. Ghana could consider enhancing its bilateral negotiations and cooperation on oil spill response with neighbouring countries such as Cote d'Ivoire and Togo. This includes revisiting discussions on dispersant use, equipment sharing, data monitoring, and conducting joint/transboundary training and dialogues on notification systems, early warning systems, and monitoring offshore spills. Transboundary mechanisms for oil spill contingency planning may also be used to address acute plastic pollution incidents.

5.9.7 Create an inventory of hazardous substances which tracks the presence of persistent organic pollutants, pathogens and other harmful elements present in fish and shellfish along the coast and in offshore areas. This inventory will help indicate and measure any existing acute problems, such as, mercury, PCBs or human pathogens. The survey will function as a baseline for future monitoring and will inform decision-making which considers the risk of transboundary contamination.

5.9.8 Monitor sewage and waste-water treatment plans regularly to identify heavy pollution zones and prioritise action. This mapping process will help identify which sewage and wastewater treatment facilities need to be upgraded. It will also help prioritise the areas that require increased development and implementation to reduce and contain major pollution. Further investments are needed to expand the capacity for wastewater collection and treatment that includes the recovery of resources for reuse (UNEP 2023b).

5.9.9 Address source-to-sea pollution by conducting a dedicated capacity assessment that will identify key contaminants and make timely course-correction easier. A dedicated institutional capacity needs assessment for addressing the source-to-sea pollution management is recommended for the relevant authorities, including the Ministry of Sanitation and Water Resources. Greater attention needs to be paid to identify and course-correct contaminants, e.g. pharmaceutical compounds, chemicals, and synthetic compounds, microplastics or nanoparticles, which enter into wastewater flow. Identifying the key contaminants will make it easier, faster and cheaper to treat

5.9.10 Support increased electrification and shore-to ship power to reduce emissions from shipping, limit marine pollution and meet carbon reduction targets. Marine pollution may be reduced by offering shore-to-ship power (vessel electrification), as well as electrification of cranes, vehicles, and other port equipment in order to meet carbon reduction targets. Also, with better planning, ships may stay berthing at shorter times which helps to shorten the waiting time for the next ship at anchorage outside the port. In addition, ports can offer low/no carbon fuels such as LNG, e-ammonia, and e-methanol.

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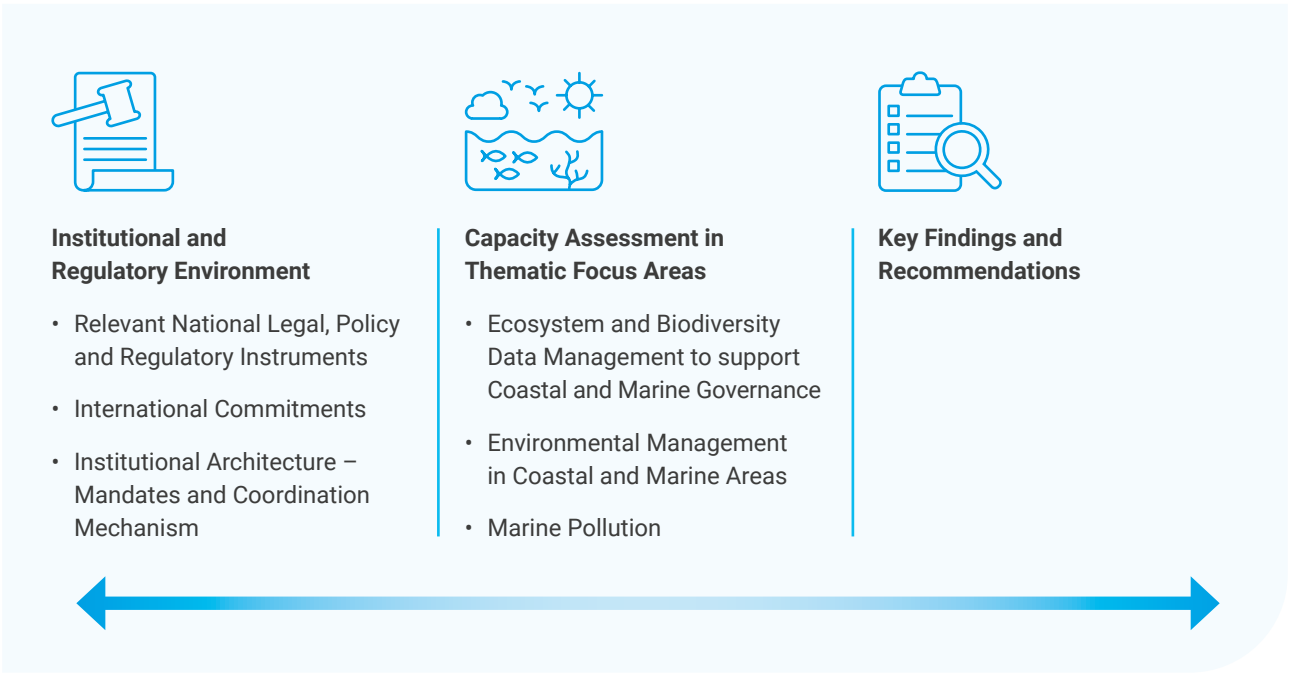
Annex Figure 1: Analytical Framework.



The assessment also uses a checklist to score institutional capacities across seven core areas:

Annex Figure 2: Key parameters for the Institutional Capacity Needs Assessment.

A. National Policies, Legal and Regulatory Framework, Strategies and Guidelines

B. Environmental Institutional Architecture and Coordination Mechanisms

C. Environmental Data Management

D. Ocean Planning Tools and Management

E. Environmental Regulatory Capacities and Compliance Monitoring

F. Acute Marine Pollution and Emergency Preparedness and Response

G. Stakeholder Engagement

Annex 2: Scope and Methodology

The United Nations Environment Programme (UNEP) under its global collaboration with the Government of Norway, under the Norwegian Oil for Development (OfD) Knowledge Programme, works on enhancing national capacities for improved environmental governance and management and reducing pollution risks associated with the oil and gas sector. Under this collaboration, UNEP provides capacity building/training and technical assistance to OfD-supported countries including Ghana. UNEP's technical assistance support has previously included undertaking institutional capacity needs assessments (CNA), which are tailored to country priorities and Government requests for assistance through the OfD country programme. The OfD country programme in Ghana will conclude in 2024 and transition into other knowledge programmes under Norway, including Energy for Development.

On the basis of Ghana's commitment to sustainably manage 100% of the ocean area under their national jurisdiction and to develop Sustainable Ocean Plans (SOP) to achieve this target by 2025, the Environment Directorate (ED) and the Environment Protection Agency (EPA) at Ministry of Environment, Science, Technology, and Innovation (MESTI) requested technical assistance support from UNEP under its current OfD country programme cooperation framework between Ghana and Norway for the period 2022-2024. One of the identified priorities by the Government is strengthening MESTI's and EPA's capacities to deliver effective environmental governance, and specifically in developing a framework for marine management planning which contributes towards the SOP national process.

In this context, UNEP has undertaken an Institutional Capacity Needs Assessment (CNA) on environment governance and management under the UNEP-Norway OfD Partnership for the Ministries, Departments and Agencies (MDAs) with core environmental mandates, i.e., Environment Directorate-MESTI, EPA and Land Use and Spatial Planning Authority (LUSPA), designed to contribute towards strengthening environmental management in oceans governance and towards the ongoing SOP process led by the Office of the President.

The main objective of the CNA is to identify the key capacity needs of these institutions in carrying out their relevant mandates. In doing so, the assessment also identifies overall environmental governance capacity gaps in the country and provides a template to conduct similar institutional assessments for other institutions that hold other mandates relating to oceans governance.

UNEP commenced the assessment with a scoping mission to Accra, Ghana in February 2023 during which draft terms of reference to define the scope of the assessment were established with MESTI and other relevant Ministries/Agencies.

Subsequently a follow-up fact-finding mission was held from 07 – 17 August 2023 to conduct extended consultation with relevant national, sub-national and local stakeholders, in Greater Accra, Central and Western regions. The mission was undertaken by a joint UNEP-Norwegian Environmental Agency (NEA) team, who was accompanied by focal points from Environment Directorate, EPA, Ghana Petroleum Commission, and Fisheries Commission during the field visit. Following the in-country missions, further consultations were held virtually through bilateral meetings and follow-up surveys. An initial draft report was submitted for verification and comments to Environment Directorate and EPA in December 2023. Following further review, a full draft report was shared with all stakeholders in March 2024 ahead of the validation meeting held on 19 March 2024 in Accra. The final draft report has been prepared upon incorporation of inputs received at this meeting.

In summary, UNEP conducted the CNA update process in the following phases:

- In-country scoping mission for finalizing the scope of the CNA (February 2023)
- Multistakeholder consultations during extended fact-finding mission with on-site consultations and field visits (August 2023)
- Follow-up virtual bilateral meetings. (April – September 2023)
- Preparation of initial draft report (October - December 2023)
- Submission to Environment Directorate and EPA for first comments (December 2023 – February 2024)
- Administration of survey questionnaires for additional information (December 2023 – February 2024)
- Revised draft shared with all stakeholders consulted for comments (March 2024)
- Validation and finalization of the report (March – April 2024)

Limitations

This report does not assess the institutional capacity needs of all key government institutions (ministries, agencies, and departments) that play a role in oceans governance and management in Ghana. Instead, it only focuses on selected institutions with core environmental governance and management mandates such as the Environment Directorate, EPA and LUSPA, to identify their needs to enable them to better engage in issues related to oceans governance. Given Ghana's commitment to sustainably manage 100% of its oceans area under its national jurisdiction and develop a Sustainable Oceans Plan by 2025, this limitation of the assessment is intentional, bearing in mind the limited time and human resources required to further expand the scope of the assessment. The report also does not assess strategies and sources of financing for the sustainable ocean plan, for which a distinct assessment process will be necessary. Nevertheless, the recommendations in the report on strengthening environmental governance structures seeks to contribute towards making Ghana more attractive for private investments.

The main objective of the report is to identify and provide recommendations on institutional capacity needs aimed at strengthening national environmental governance and management relating to coastal and oceans governance. Therefore, even though the report identifies various challenges and issues relating to the coastal and marine environment in Ghana, it is does not undertake an in-depth environmental analysis and assessment of such identified issues.

Furthermore, this assessment builds on the recent National Oceans Governance Study for Ghana (OGS) that was commissioned by the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the Office of Legal Affairs of the United Nations in 2022-2023 and does not duplicate a similar assessment of the legal instruments. Where relevant, reference is made directly to the corresponding sections of the OGS Report 2023.

Annex 3: Capacity Needs Assessment Checklist

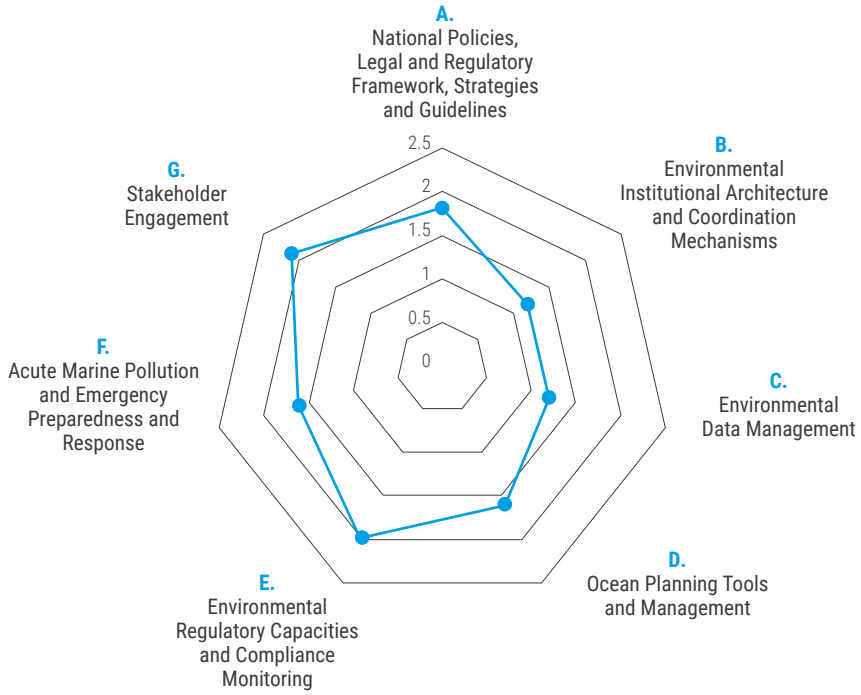
While there is no internationally recognised definition of "international oceans governance", it can be considered to include rules, institutions, processes, agreements, arrangements, and activities carried out to manage the use of oceans and seas and coastal zones in an international and regional context.[78]

UNEP has developed an assessment tool for this CNA that looks at a non-exhaustive list of capacity areas that identify the overall national institutional capacity needs for strengthening environmental management related to oceans governance in Ghana. The checklist helps measure this by looking at seven different heads of assessment:

1. National Policies, Legal and Regulatory Framework, Strategies, and Guidelines
2. Institutional Architecture and Coordination Mechanisms
3. Environmental Data Management
4. Ocean Planning Tools and Management
5. Environmental Regulatory Capacities and Compliance Monitoring
6. Acute Marine Pollution and Emergency Preparedness and Response and
7. Stakeholder engagement: traditional structures and local communities; civil society organizations/NGOs; private sector/industry; academia.

This checklist has been illustrated as a spider chart below. This diagram charts performance across seven factors which provide a general and qualitative assessment of key components, essential for strengthening environmental management related to oceans governance.

Annex Figure 3: Government responses to the Capacity Needs Assessment Checklist towards Strengthening Sustainable Ocean Governance in Ghana 2024.



[78] United Nations Environment Programme (2015) *Input from UNEP to the EU international ocean governance consultation*. Available at: https://wedocs.unep.org/20.500.11822/11146 (Accessed: 15 February 2024)

CNA Checklist Results

The checklist was carried out in consultation with core government focal points and other national non-governmental stakeholders; and is further refined through the in-country assessment process conducted by the UNEP team. The checklist was shared with all stakeholders for their self-assessment. Responses were received from the assessment focal points from the Environment Directorate at MESTI, EPA, GMA, LUSPA, the Petroleum Commission and the University of Ghana. Below are the results of the CNA checklist, based on the scoring template for the assessment, from responses received.

Based on the responses received to the checklist, the most critical gaps in capacity pertain to the need for strengthening capacities in the institutional architecture and coordination mechanisms and the data management infrastructure in place for oceans governance in Ghana. Additionally, this spider chart can be used as a benchmark for tracking progress and capacity improvements over time.

CNA Questionnaire Template

Instructions for use of checklist:

- The questions are, primarily, Yes or No questions for self-assessment.
- Where multiple responses are required on individual points raised in a question, provide more information to the best of your knowledge.
- Final scores for each section will be calculated as the average score for that specific section.
- Responses will generally fall under these categories with corresponding scores as follows:

Yes, for most of the time.	3	Yes	3
Yes, to a large extent.			
Yes, for most of them.			
Yes, for some of the time.	2	No	0
Yes, to some extent.			
Yes, for some of them.			
Yes, but infrequently.	1	–	–
Yes, to a small extent.			
Yes, but not many.			
No, none at all.	0	Not sure	No score

1. National Environmental Policies, Legal and Regulatory Framework, Strategies, and Guidelines

This section assesses a country's readiness and commitment towards effective oceans governance by examining its policies, legal frameworks, national standards, and international engagements. Key considerations include the existence and clarity of policies, adequacy of legal frameworks, adherence to national standards and guidelines, and active participation in international agreements related to oceans governance. The overall goal is to gauge the country's preparedness to address environmental challenges and fulfil global and national commitments on sustainable oceans management.

1. Do you believe that the existing national environmental policies, laws, and regulations are sufficient to promote sustainable oceans governance?
2. Has your ministry developed plans/programmes/strategies to strengthen environmental management related to ocean governance?
3. Do existing legal instruments define clear institutional mandates for relevant government entities?
4. Do existing laws require mechanisms for periodic environmental compliance/monitoring by the responsible authority?
5. Are there any environment (marine) related offences codified within the framework laws? If yes, please specify which issue they relate to.
6. Have Ghana's international/regional commitments related to oceans governance been effectively translated into national level policy and legal frameworks?

2. Environmental Institutional Architecture and Coordination Mechanisms

This section evaluates the institutional framework and coordination mechanisms in place for oceans governance. The assessment covers the existence and adequacy of institutions with dedicated mandates, and the presence of specific departments or units for oceans governance. It looks at the human resources capacity, including the sufficiency of qualified staff and regularity of training programs. The evaluation extends to the coordination mechanisms, including inter-ministerial and inter-agency collaboration at national and district levels. The overarching goal is to gauge the effectiveness and readiness of the institutional setup for comprehensive oceans governance.

1. Is there any specific institution with a distinct mandate on oceans governance?
2. In your ministry, is there a stand-alone unit responsible for carrying out/overseeing mandates related to ocean governance and management?
3. Are all staff positions filled for undertaking mandated responsibilities in the ministry/department/agency?
4. Do existing staff have capacities to fulfil anticipated roles under the Sustainable Ocean Plan (SOP)?
5. Is basic training on environmental management and ocean governance available periodically (e.g., annually) to all staff members?
6. Do responsible staff with environmental regulatory functions regularly receive specialised training (e.g., on EIAs/ESIAs, site inspections, audits, environmental monitoring and compliance etc)?
7. Is there an inter-ministerial coordination mechanism for oceans governance, and is it functional?

8. Is there adequate funding to support inter-ministerial/inter-agency coordination and collaboration on ocean governance (e.g., meeting regularly, undertaking EIA reviews, conducting environmental audits, data sharing, pooling of human/technical/financial resources, etc.)?
9. Are budgetary resources allocated to Government institutions sufficient to support their mandated roles and responsibilities?
10. Is there a multi-stakeholder coordination mechanism which includes non-government actors (e.g., civil society) related to oceans governance, and is it functional?
11. Is there a coordination mechanism for oceans governance at the sub-national and local levels and is it functional?

3. Environmental Data Management

This section assesses the readiness and effectiveness of a country's data infrastructure and capacities for oceans governance. It covers the availability and quality of relevant baseline data and maintenance capacity. Additionally, it considers the accessibility of data, inter-agency collaboration, and regional participation in data collaborations. The overarching goal is to determine the country's capability in collecting, managing, and sharing data crucial for informed decision-making in the context of oceans governance and environmental management.

1. Is there periodic monitoring and publishing of environmental baseline data for coastal and marine habitats?
2. Is there an Environmental Sensitivity Atlas and is it regularly updated?
3. Is there sufficient in-house Government capacity for undertaking environmental data collection, management, storage, data infrastructure maintenance and software upgrades?
4. Do relevant Government staff undergo adequate training on data collection, analysis, interpretation, storing, recording, and privacy methods and processes?
5. Are mechanisms in place to facilitate inter-agency data sharing across national and sub-national levels?
6. Is environmental baseline data accessible to the private sector and the public?
7. Have monitoring, reporting, and verification (MRV) systems for fragile ecosystems (mangroves, wetlands) been put in place?
8. Is the government investing in modern digital technologies, such as drones, unmanned aerial vehicles (UAVs), and voluntary vessel monitoring systems (VMS), to support data collection and monitoring?
9. Are there efforts to collect environmental baseline data on traditional and indigenous knowledge, including know-how from artisanal fishers?

4. Ocean Planning Tools and Management

This section provides an overview of actions that will inform sustainable ocean governance planning processes. The overarching goal is to gauge the existence of a holistic framework that considers diverse perspectives, integrates technological advancements, is future oriented and contributes to the coordinated and sustainable management of ocean resources.

1. Have any area-based management tools been utilised to spatially organise the Ghanaian marine environment and its economic activities? (e.g., establishing specific zones for fishing, etc.)
2. Is there sufficient Government capacity and experience to undertake Strategic Environmental Assessments in the country?
3. Is there sufficient Government capacity and experience to undertake Marine Spatial Planning?

4. Is there sufficient Government capacity and experience to undertake Integrated Coastal Zone Management?
5. Is there sufficient Government capacity and experience to undertake Marine Protected Area (MPA) management?
6. Are there mechanisms established to address resource use/access conflicts between sectors in the coastal and marine environment?
7. Are there transboundary cooperation agreements in place for managing and governing shared marine environment?
8. Does the country regularly engage in regional and international cooperation platforms dedicated to ensuring a coordinated approach to shared ocean resources and addressing emerging challenges?
9. Are climate and disaster risk assessments and scenarios taken into account in national strategies/plans/programmes that cover the coastal and marine space?

5. Environmental Regulatory Capacities and Compliance Monitoring

This section focuses on assessing **government regulatory and compliance monitoring capacities**, in the context of undertaking ESIAs/EIAs, permitting, site inspections, audits, and compliance monitoring activities including monitoring of project specific Environmental Management Plans (EMPs) and their implementation. This section also focuses on environmental regulation and monitoring in development sectors.

1. Are there adequate/sufficient Government capacities to effectively undertake environmental and social impact assessments (ESIAs) for planned development projects in marine and coastal areas?
2. Are ESIA reports of planned development projects publicly accessible?
3. Is there sufficient government capacity and experience to effectively regulate coastal and offshore sector activities (e.g., fisheries, petroleum, shipping, etc.) and ensure responsible environmental management (e.g., monitoring and reporting against Environmental Management Plans of operators, site inspections, audits)?
4. Are there sufficient budgetary resources allocated to Government regulatory institutions to effectively undertake sectoral regulation of the environment as well as monitoring compliance?
5. Are there Government regulatory systems in place to monitor/track environmental compliance, i.e., as per permitting conditions and Environmental Management Plans submitted by operators?
6. Are offences related to environmental non-compliance and associated punitive actions clearly defined?
7. Is the existing judicial system familiar with and can adequately deal with cases related to environmental non-compliance?
8. Are proceedings against and rulings on non-compliance effectively enforced?
9. Are trainings related to environmental regulation and compliance made regularly available/accessible to mandated Government institutions and staff?
10. Do such trainings reach sub-national/regional and district-level staff in-charge of environmental regulation and monitoring?

6. Acute Marine Pollution and Emergency Preparedness and Response

This section covers key aspects such as the **institutional setup for disaster preparedness, emergency response systems, early warning mechanisms, and related training programs**. The goal is to determine the effectiveness of national institutions, coordination mechanisms, and plans in addressing emergencies related to marine pollution, including those associated with the offshore oil and gas sector. Additionally, it looks at the frequency of testing and updating of contingency plans, linking notification systems, and fostering international cooperation to enhance the country's ability to manage and respond to maritime emergencies effectively.

1. Is there a national contingency plan for oil/chemical spills and other accidental/acute pollution events, and is it regularly tested/exercised, reviewed, and updated?
2. Do local/sub-national contingency plans exist for acute pollution incidents and are they regularly tested, reviewed, and updated?
3. Do industry operators have their own contingency plans (Tier1) and are they reviewed by the mandated Government institution?
4. Are acute pollution incidents monitored and evaluated?
5. Is environmental baseline information used and environmental sensitivity mapping undertaken to inform spill/acute pollution contingency preparedness and response plans?
6. Are national disaster management systems in place and effective, including being periodically tested and do they have the ability to reach local areas (i.e., at district or community level)?
7. Is the national notification system for acute pollution incidents linked with national disaster and emergency management systems, with two-way communications in place?
8. Are risk assessments for acute pollution incidents such as oil spills regularly undertaken?
9. Are trainings related to emergency preparedness and response for acute pollution incidents, e.g., oil spills and shipping related accidents, made regularly available/ accessible to mandated Government institutions and staff?
10. Are international/transboundary cooperation arrangements in place for emergency response relating to acute pollution, and are they periodically tested, reviewed, and updated?

7. Stakeholder Engagement

The section assesses the inclusivity of consultative processes in coastal and marine governance by evaluating the engagement of key stakeholders. It covers **traditional structures and local communities, civil society organizations, the private sector, and academia**. Key considerations include the existence of enabling policies or legislations, active participation in decision-making processes, the raising of environmental concerns, and access to formal grievance mechanisms for each stakeholder group. The overarching goal is to promote a comprehensive and participatory approach to coastal and marine governance that incorporates the perspectives and contributions of diverse stakeholders for sustainable and effective management.

Traditional Structure and Local Communities

1. Are there any policies that encourage and require the participation of the traditional and local communities in consultative processes?
2. Are the local and traditional communities involved in consultations/decision-making processes related to issues in the coastal and marine space?
3. Are the local and traditional communities active in raising environmental concerns related to the coastal and marine space?
4. Do local communities have access to formal grievance mechanisms?

Civil Society Organisation/Non-Governmental Organisation

1. Are there any policies that encourage and require the participation of the civil society in consultative processes?
2. Are civil society organizations/non-governmental organizations engaged in consultations/decision-making processes involving coastal and marine issues?
3. Are civil society organizations/non-governmental organizations active in raising environmental concerns related to the coastal and marine space?
4. Do civil society organizations/non-governmental organizations have access to formal grievance mechanisms?

Private Sector/Industry

1. Does the country have an adequate supply of private consultants and national consultancy companies who work on Environmental Impact Assessments (EIA) and compliance monitoring in relation to pollution issues, waste management, marine litter, and coastal and marine conservation?
2. Is there a sufficient availability/supply of national consultants with adequate knowledge of environmental issues related to coastal and offshore development sectors (e.g., offshore energy, fisheries, shipping, and tourism industries)?
3. Is there an association of private consultants/practitioners in the country specializing in environmental impact assessments and compliance monitoring?
4. Are there private sector-run training programmes related to environmental management which are accessible to the general public?

Academia

1. Are there sufficient university courses/programmes that cover topics related to marine science, biodiversity conservation, marine and coastal environmental protection and governance, fisheries management?
2. Are university faculty engaged in/provide expertise during stakeholder consultative exercises with Government institutions on issues related to the coastal and marine environment?
3. Do university faculty members work as environmental consultants for the private sector (e.g., offshore energy/fishing/shipping industry)?
4. Are there dedicated research facilities focusing on sustainable oceans, and marine ecosystems research?

Annex 4: Master List of Stakeholders

LEGEND

- Scoping Mission (SM) Feb 2023
- Fact-finding Mission (FM) August 2023
- Follow-up surveys (SQ) December 2023 – February 2024
- First draft review (DR) March 2024
- Kick-off Meeting (KM) August 2023
- Virtual Meeting (VM) March – September 2023
- National Validation Meeting (NV) March 2024

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
1	Isaac Okyere	Academia	Africa Centre of Excellence in Coastal Resilience, University of Cape Coast	M							
2	Joshua Adotey	Academia		M							
3	Dennis Akoto	Academia		M							
4	Richmond Korang	Academia		M							
5	Precious Agbeko D. Mattah	Academia		M							
6	Cindy Anweh Awuni	Academia		F							
7	Nafee Jackey	Govt	ASFAT	F							
8	Dr. Rebecca K Essamuah	CSO	CEMLAWS Africa Member, SDG Office	F							
9	Albert Derrick	CSO	Centre for International Maritime Affairs, Ghana	M							
10	Jerry Ahmed Shaib	Govt	Coastal Development Authority	M							
11	Gideon Nii Ampim Sackey	Govt		M							
12	Lesley Arthur	Industry	Cubica	F							
13	Ken Kinney	CSO	Development Institute	M							
14	Appeaning Addo Kwasi	Academia	Director, Institute for Environment and Sanitation Studies, University of Ghana	M							
15	Akanyidi A Portia	Govt	Ellembelle District Administration	F							
16	Ayisha Matuamo Mahama	Govt		F							
17	Adwoa S Boakye	Govt		F							
18	Enoch Cudje	Govt		M							
19	David Enu	Govt		M							
20	Charles Kwesi	Govt		M							
21	Macdonald Kwojie	Govt		M							
22	Eugene Kofi Ankomah	Govt		M							
23	Phillip Zutunu	Govt		M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
24	Bright Erzah	Govt	Ellembelle District Administration	M							
25	Kwasi Bonzoh	Govt		M							
26	Emil Atsu Tawiah	Govt		M							
27	James R	Govt		M							
28	Joshua J Otoo	Industry	Elmina Import	M							
29	Samuel P	Industry	Elmina Salt Producers Association	M							
30	Fredrick Ken Appiah	Govt	Energy Commission	M							
31	Jewel Kudjawu	Govt	Environment Protection Agency	F							
32	Peace Gbeckor-Kove	Govt		F							
33	Douglas Asmato Ferkah	Govt		M							
34	Kwesi Yeboah Achampong	Govt		M							
35	Kojo Efunam	Govt		M							
36	Victor Asante	Govt		M							
37	Nana Ya Appia	Govt		M							
38	Edith Acheampong	Govt		F							
39	James Akussah	Govt		M							
40	Baffour Dokyi	Govt		M							
41	Samuel Kofi Agbetsiafa	Govt		M							
42	Godwin Kwesi	Govt		M							
43	George KK Diawish	Govt		M							
44	Larry Kotoe	Govt		M							
45	Mawuli Abekor	Govt		M							
46	Jescitan Tetteh Sanakey	Govt	Fisheries Commission	M							
47	Lawrence Armah Ahiah	Govt		M							
48	Paul Bannerman	Govt		M							
49	Richner Odonkor	Govt		F							
50	Richard Yeboah	Govt		M							
51	Papajoe Maale-Adsei	Govt		M							
52	Emmanuel Dovlo	Govt		M							
53	Theodore Kwadjosse	Govt		M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
54	Grace Charway	Govt	Fisheries Commission	F							
55	Nadiya Nekoe		Ghana Association of Social Workers	F							
56	Yiadom Boakyle Akoto	Govt	Ghana Hydrological Authority	M							
57	Mathias Otong	Govt		M							
58	Esi Alwangi Sam	Govt	Ghana Maritime Authority	F							
59	Rahaina Abdul- Kadir	Govt		F							
60	Marilyn Egham	Govt		F							
61	Araba Owusu Ankomah	Govt		F							
62	Emmanuel Awimi	Govt		M							
63	Numbu Issahaque Sumabe	Govt		M							
64	Augustine Chongaterah	Govt		M							
65	Nana Akyer	CSO	Ghana National Canoe Fishermen Council	M							
66	Francis Etsey Edekar	CSO		M							
67	Kakraba Kwamena	CSO		M							
68	Ebusuapanyin Kobina Benya	CSO		M							
69	Kojo Badu	CSO		M							
70	Nana Kofi Krah	CSO		M							
71	Kobina Nyamekye	CSO		M							
72	Ekow Awotwe	CSO		M							
73	Kofi Akyeh	CSO		M							
74	Kwamena Andoh	CSO		M							
75	Kweku Appiah	CSO		M							
76	Kobina Kakareba	CSO		M							
77	Kofi Nyankoh	CSO		M							
78	Uncle Peter	CSO		M							
79	Robert Acquah (Secretary)	CSO		M							
80	Giffy Anomoah	CSO	Ghana National Fish Processors and Traders Association	F							
81	Captain Kwasi Kyeremkaien Donkor	Govt	Ghana Navy	M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
82	Helen Claudia Amangfu	Govt	Ghana Shippers Authority	F							
83	Kkiesi Saforo	Govt		M							
84	Rim Al Amir	Development	GI WACAF	F							
85	Anaïs Guillou	Development		F							
86	Memunatu Issah	Govt	Greater Accra Regional Coordinating Council	F							
87	Vider Kausa	Govt		M							
88	M. Euclid		HARF	F							
89	F. Sowal			M							
90	Josh Dotse	CSO	HATOF Foundation	M							
91	Samuel Dotse	CSO		M							
92	Kofi Agbogah	CSO	Hen Mpoana	M							
93	Esther Gladys Josiah	Industry	Import Dealers Federation	F							
94	Chris Gordon	Academia	Institute for Environment and Sanitation Studies, University of Ghana	M							
95	Sheila Abla Nyanyonu Humphrey-Ackurney	Govt	Land Use and Spatial Planning Authority	F							
96	Abena Apeaa Adu	Govt		F							
97	Amanda S Doagbadzie	Govt		F							
98	Ama A Boadu	Govt		F							
99	Stella Ama Agyamang	Govt		F							
100	Barbara Adomaa Kumi	Govt		F							
101	Abigail Amankoah	Govt		F							
102	Nada Tandoh	Govt		F							
103	Chapman Okpuri-Sekyere	Govt		M							
104	Patrick Apraku	Govt		M							
105	T Abdul Samad	Govt		M							
106	Feliz Offei	Govt		M							
107	Stephen Tash	Govt		M							
108	Enoch Anchebah	Govt		M							
109	Mohammed A Damba	Govt		M							
110	Benedict Arkhusrt	Govt		M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
111	Prosper Kwame Detornu	Govt	Land Use and Spatial Planning Authority	M							
112	Dr Kwadwo Yeboah	Govt		M							
113	Ebenezer Ntsiful	Govt		M							
114	Ama Akyire Akyinba Ferkah	Govt		F							
115	Elorm Ababio	Private	Merton & Everett LLP	M							
116	Karen Asiamah	Govt	Ministry of Environment, Science, Technology and Innovation	F							
117	Lily Sencherey	Govt		F							
118	Emelyne M.S Wright-Hanson	Govt		F							
119	Peter J Dery	Govt		M							
120	Salim Monsuru	Govt		M							
121	Daniel Nortey	Govt		M							
122	Mamuma M Mattah	Govt		M							
123	Animagyei-Kesse Bernard	Govt		M							
124	Patrick Nomo	Govt		M							
125	Ceulis Ngundi	Govt		M							
126	Raymond Ofori	Govt		M							
127	Henry Bortey	Govt		M							
128	Samuel Wireko Zumir	Govt		M							
129	Mathias Kusmah	Govt		M							
130	Emmanuel	Govt		M							
131	Karen Asiamah	Govt		F							
132	Gillian Addy	Govt		F							
133	Mohammed Gyimah	Govt		M							
134	Gloria Holm-Graves	Govt		F							
135	Michael Anozio	Govt		M							
136	Nana Osei Safo	Govt		M							
137	Emmanuel Mensah	Govt		M							
138	Joshua Tettah	Govt		M							
139	Isaac Dakurah	Govt		M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
140	Plomey Lindgwin	Govt	Ministry of Environment, Science, Technology and Innovation	F							
141	Patrick Konsi	Govt		M							
142	William Abbayh	Govt		M							
143	Michael AA	Govt		M							
144	Ruth Cann	Govt	Ministry of Fisheries and Aquaculture Development	F							
145	Jacqueline Aketo	Govt		F							
146	Gloria Adifu	Govt		F							
147	Ishmah A Browne	Govt		M							
148	Enock Boadv Amo	Govt		M							
149	Esther Amoah	Govt		F							
150	Kwasi Dawson	Govt		M							
151	Abubakasi Muniru	Govt	Ministry of Foreign Affairs	M							
152	Miriam Aba Arhim	Govt		F							
153	Dr Tawfiq Mohammed	Govt	Ministry of Sanitation & Water Resources	M							
154	Deborah Laryea	Govt		F							
155	Harrier Baodiwao	Govt		F							
156	Sandra Kesse	Govt	National Development Planning Commission	F							
157	Mercy Azoamah Isaah	Govt		F							
158	Jabe Anane	Govt		M							
159	Winfred A Nelson	Govt		M							
160	Barlow Ashraf	Govt		M							
161	Erlend Grimsrud	Development	NORAD	M							
162	Katherine Idas	Development	Norwegian Coastal Administration	F							
163	Helge Anderson	Development		M							
164	Kyrre Holm	Govt	Norwegian Embassy in Ghana	M							
165	Mia Kamarainen	Development	Norwegian Embassy, Ghana	F							
166	Anne-Minne Torkildsen	Development	Norwegian Offshore Directorate	F							
167	Abel Kobina Kombey	Industry	OSRL- Ghana	M							
168	Linda Ansu-Kyremeh	Govt	Petroleum Commission	F							
169	Isaac A Oppong	Govt		M							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
170	Patrick Akanpaaba	Govt	Petroleum Commission	M							
171	Isaac Eshun	Govt		M							
172	Baba Nylandor	Govt		M							
173	Jeffrey Kya-Baffour	Govt		M							
174	Jonathan Narch Dometey	Govt		M							
175	Ernest Ansong	Govt		M							
176	Nana Akua Agyei	Govt		M							
177	Felicity Ankama- Sey	Academia	Regional Maritime University	F							
178	Dr Felix Offei	Academia		M							
179	Felix Addo-Yobo	Govt	SDG Advisory Unit, Office of the President	M							
180	Dominic Asante Opoku-Manu	Govt		M							
181	Richard Asumadu	Govt		M							
182	Christiana Lokko	Govt		F							
183	Mohamed Banisa	Industry	Tullow Ghana	M							
184	Moses Mensah- Tebah	Industry		M							
185	Bryan Buxton Barnor	Industry	Tullow Oil Ghana	M							
186	Tolu Lacroix	Development	UN Global Compact Ghana	M							
187	Rhoda Boatend	Development		F							
188	Myra Togobo	Development	UN Resident Coordinator's Office Ghana	F							
189	Gifty Ayongo Tetteh	Development		F							
190	Gulana Huseynova	Development		F							
191	Angela Yayra Kwashie	Development	UNCDF Ghana	F							
192	Stephen Kansuk	Development	UNDP Ghana	M							
193	Catherine Adodoadji-Dogbe	Development		F							
194	Mohammed Atani	Development	UNEP Regional Office for Africa								
195	Laura Nery	Development	UNEP-WCMC	F							
196	Rita Trabulo	Development		F							
197	Hamza Butt	Development	UNEP-WCM	M							
198	Noble Asare	Academia	University of Cape Coast	M							
199	Bernice Wilmot Oppong	Academia	University of Ghana	F							

No.	Name	Stakeholder Group	Affiliation	Gender	SM	KM	FM	VM	SQ	NV	DR
200	Godwin Djokoto	Academia	University of Ghana	M							
201	Clement Addo	Academia		M							
202	Etem Mahu	Academia		F							
203	Winnie Sowah	Academia		F							
204	Andrew Agyekumhene	Academia		M							
205	Eunice K Asamoah	Academia		F							
206	Angela M Lamptey	Academia		F							
207	F K E Nunoo	Academia		M							
208	Benjamin Osei Botwe	Academia		M							
209	Dr Philip Neri Jayson Quashigah	Academia		M							
210	Gideon Owusu	Academia		M							
211	Nadia K Tossu	Academia	University of Ghana, Law School	F							
212	Emmeline Ziwu	Academia		F							
213	Dr Fatima Denton	Academia	UNU-INRA	F							
214	Kimberly Anne Rosen	Development	US AID	F							
215	Kristopher Rowell	Development		M							
216	Susan	Development		F							
217	Carina Barth	Development		F							
218	Dickson Agyeman	Govt	Wildlife Division – Forestry Commission	M							
219	Mary Balkono	Govt									
220	Morgan Graham	Development	World Bank	M							
221	Sajid Anwar	Development		M							
222	Peter Kristensen	Development		M							
223	Maged Mahmoud Hamed	Development		M							
224	Darshani De Silva	Development		F							
225	Justice Odoi	Development		M							
226	Olof Linden	Development	World Maritime University – International Maritime Organization	M							

Annex 5: Legal, Policy and Regulatory Instruments – National and International

The tables in this Annex summarize the findings of the OGS and adds to the key framework legislation (**Table 1**), enabling secondary legal instruments (**Table 2**) and guiding policy frameworks (**Table 3**) that addresses issues related to oceans governance in Ghana, provides the status of such instruments, and identifies the responsible implementing agency for each such instrument.

Table 1: Relevant Domestic Legislation.

LEGEND Yes Draft available No

Themes/Sectors	Framework Legislation	Status	Responsible Authority
Governance	Constitution 1992		Parliament
	Local Government Act 1993 (Act 462)		Ministry of Local Government, Decentralization & Rural Development (MLGDRD)
	Courts' Act 1993 (Act 459)		Ministry of Justice and Attorney General Department (MJAGD)
	Local Governance Act 2016 (Act 936)		MLGDRD
Environment	Environmental Protection Agency Act 1994 (Act 490)		EPA, MESTI
	Land Use and Spatial Planning Act 2016 (Act 925)		LUSPA
	Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917)		EPA
	Maritime Pollution Act 2016 (Act 932)		GMA
	Wildlife Resources Management Bill 2022		Ministry Of Lands and Natural Resources (MLNR)
	Ghana Hydrological Authority Bill 2022		Ministry of Works and Housing (MWH)
Climate Change	Environmental Protection Authority Bill		MESTI/EPA
Fisheries	Fisheries Act 2002 (Act 625)		Ministry of Fisheries and Aquaculture Development (MFAD) Fisheries Commission (FC)
	Fisheries (Amendment) Act 2014 (Act 880)		MFAD, FC
Energy	Mineral Act 1962 (Act 126)		Minerals Commission (MC)
	National Petroleum Corporation Law 1983 (P.N.D.C.L. 64)		Ghana National Petroleum Corporation
	Energy Commission Act 1997 (Act 541)		Ministry of Energy (MOE) Energy Commission (EC)
	National Petroleum Authority Act 2005 (Act 691)		PC/National Petroleum Authority
	Renewable Energy Law 2011 (Act 832)		EC
	Petroleum (Exploration and Production) Act 2016 (Act 919)		PC

Themes/Sectors	Framework Legislation	Status	Responsible Authority
Shipping	Ghana Shippers' Authority Act 1974 (NRCD 254)		Ghana Shippers Authority (GSA)
	Ghana Ports and Harbours Authority Act 1986 (PNDCL 160)		Ghana Ports and Harbours Authority (GPHA)
	Ghana Maritime Authority Act 2002 (Act 630)		GMA
	Ghana Shipping Act 2003 (Act 645)		GMA
	Ghana Maritime Authority (Amendment) Act 2011 (Act 825)		GMA
Maritime Security	Armed Forces Act 1962(Act 105)		MOD (Ministry of Defence)
	Police Service Act 1970 (Act 350)		MOD
	Maritime Zones (Delimitation) Act 1986 (PNDCL 159)		Provisional National Defence Council
	Ghana Maritime Security Act 2004 (Act 675)		GMA
	Ghana Maritime Security (Amendment) Act 2011 (Act 824)		GMA
	National Intelligence Agencies Act 2020 (Act 1030)		MNS (Ministry of National Security)
Maritime Delimitation	Territorial Waters and Continental Shelf Act 1963 (Act 175)		GMA
	Continental Shelf (Amendment) Decree 1968 (NLCD 309)		GMA
	Ghana Boundary Commission Act 2010 (Act 795)		Ghana Boundary Commission (GBC)

Table 2: **Relevant Secondary Legal Instruments.**

LEGEND Yes Draft available No

Themes/Sectors	Framework Legislation	Status	Responsible Authority
Governance	Civil Service (Ministries) Instrument 2021		Civil Service Council
	National Development Planning (System) Regulations, 2016 (L.I. 2232)		NDPC
Environment	Environmental Assessment Regulations 1999 (L.I. 1652)		EPA
	Hazardous, Electronic, and other Waste (classification), Control and Management Regulations 2016, LI 2250		EPA
	Land Use and Spatial Planning Regulations 2019 (L.I. 2384)		LUSPA
	Regulations on Marine Litter and Plastic Pollution		MESTI
	Tourism Regulation and Licensing of Tourist Accommodation Enterprise 2006 (L.I 2239)		Ghana Tourism Authority (GTA)
Climate Change	Management of Ozone Depleting Substances and Products Regulations, 2005 (L.I. 1812)		MESTI, EPA
Fisheries	Fisheries Regulation 2010 (L.I. 1968)		FC
	Fisheries (Amendment) Regulations 2015 (L.I. 2217)		FC
	National Premix Fuel Committee Regulations 2016 (L.I. 2233)		FC
Energy	Protection of Offshore Operations and Assets Regulations 2012		PC
	Regulations on Decommissioning and Abandonment of Offshore Oil and Gas Structures		PC
Shipping	Ghana Shipping (Protection of Offshore Operations and Assets) Regulations 2012 (L.I. 2010)		GMA
	Ghana Shippers' Authority Regulations 2012 (L.I. 2190)		GSA
	Ghana Shipping (Cabotage) Regulations, 2021 (L.I. 2438).		GMA
Maritime Security	Police Service Regulations 2012 (C.I. 76)		Ghana Marine Police
Maritime Delimitation	Marine Zone Notification. M.Z.N.138.2018.LOS of 29 June 2018.		GMA, GBC

Table 3: **Relevant Policies, Plans and Strategies.**

LEGEND Yes Draft available No

Themes/Sectors	Policies, Plans and Strategies	Status	Responsible Authority
Governance	National Medium-Term Development Policy Framework (NMTDPF) 2022 – 2024		NDPC
Environment	Coastal Zone Management Indicative Plan 1990		MESTI
	National Environment Action Plan 1994		MESTI
	Integrated Tourism Development Plan (ITDP) 1996 – 2010		Ministry of Tourism
	Draft Integrated Coastal Zone Plan 1998		MESTI
	National Environmental Policy 2014		MESTI
	Environmental Management Policy for the Oil and Gas Industry 2020		MESTI
	National Land Policy 1999		MLNR
	National Water Policy 2007		MSWR
	National Biodiversity Policy 2023 (draft)		MESTI
	National Biodiversity Strategy and Action Plan 2016		MESTI
	National Plastics Management Policy 2020		MESTI
	Ghana Shared Growth and Development Agenda (GSGDA) II, 2014 – 2017		NDPC
	Agenda for Jobs II: Creating Prosperity and Equal Opportunity for All, 2022 – 2025		NDPC
Climate Change	National Climate Change Policy 2013		MESTI
	Ghana's updated Intended Nationally Determined Contribution 2021		MESTI
	Low Carbon Development Strategy 2016		MESTI
	National Action Plan to Mitigate Short-lived Climate Pollutants 2018		MESTI
	National Climate Change Master Plan 2015–2020		MESTI
	Renewable Energy Master Plan 2019		EC
Fisheries	National Policy for the Management of Marine Fisheries from 2022 – 2026 (Draft)		FC/MOFAD
	National Fisheries and Aquaculture Policy 2021 (Draft)		FC/MOFAD
	Fisheries and Aquaculture Sector Development Plan (2011 – 2016)		FC
	National Aquaculture Code of Practices and Guidelines 2022		FC
	National Plan of Action to Prevent, Deter and Eliminate Illegal, Unregulated and Unreported Fishing 2014		FC
	Co-management Policy for the Fisheries Sector 2020		FC/MOFAD

Themes/Sectors	Policies, Plans and Strategies	Status	Responsible Authority
Energy	Fundamental Petroleum Policy of Ghana 2009		MOE
	National Energy Policy 2010		MOE
	Energy Sector Strategy and Development Plan 2010		MOE
	Strategic National Energy Plan 2006 – 2020		MOE
	National Oil Spill Contingency Plan 2002 (Revised 2020)		EPA, GMA
	Strategic Environment Assessment (SEA) of the Oil and Gas Sector for Offshore Basins in Ghana 2013		EPA, MESTI, NDPC, MOE
	SEA for the Onshore Volta Basin and the Keta Delta Block for oil and gas exploration and production 2021		EPA, MESTI, NDPC, MOE
Maritime Security	National Integrated Maritime Strategy (NIMS) 2020		GMA
	Harmonized Standard Operating Procedure (draft)		Ghana Navy

Ghana is a signatory and States Party to several international and regional agreements, conventions and treaties that govern the international obligations of states on issues relating to oceans governance (**Table 4**).

Table 4: Relevant Multilateral Conventions, Agreements, Treaties and Frameworks.[79]

Multilateral Conventions, Agreements, Treaties and Frameworks	Entry into Force	Signature	Ratification/ Accession	Responsible Implementing Authority
African Charter on Maritime Security and Safety and Development in Africa (Lomé Charter) 2016	15 October 2016	15 October 2016	Not ratified	GMA
African Convention on Conservation of Nature and Natural Resources 1968	15 September 1968	15 September 1968	17 May 1969	MLNR
Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas 1993	24 April 2003	12 May 2003	12 May 2003	FC, MFAD
Code of Conduct for the Repression of Piracy, Armed Robbery against Ships, and Illicit Maritime Activity in West and Central Africa (the Yaounde Code of Conduct) 2013	25 June 2013	25 June 2013	Not applicable	GMA, Ghana Navy
Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention) 1981	4 August 1984	23 March 1981	20 July 1989	MESTI, EPA
Convention for the Establishment of the Fishery Committee for the West Central Gulf of Guinea (FCWC)	07 November 2007	07 November 2007	07 November 2007	FC, MFAD

Multilateral Conventions, Agreements, Treaties and Frameworks	Entry into Force	Signature	Ratification/ Accession	Responsible Implementing Authority
Convention for the Suppression of Unlawful Acts against Safety of Maritime Navigation (SUA) and its Protocol for the Suppression of Unlawful Acts against Safety of fixed Platforms Located on the Continental Shelf (SUA Protocol) 1988	1 March 1992	01 November 2002	30 January 2003	GMA
Convention on Biological Diversity 1992 (CBD)	29 December 1993	12 June 1992	29 August 1994	MESTI
Convention on Facilitation of International Maritime Traffic (FAL) 1965	5 March 1967	05 November 1965	9 March 1967	GMA
Convention on Fisheries Cooperation among African States Bordering the Atlantic Ocean 1991	2 April 2014	5 July 1991	2 September 2014	FC
Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean (COMHAFAT) 1991	11 August 1995	5 July 1991	2 September 2014	MFAD
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973	01 July 1975	14 November 1975	12 February 1976	MESTI, EPA
Convention on the Conservation of Migratory Species of Wild Animals Convention 1988	8 October 1991	19 January 1988	01 April 1988	Wildlife Division, Ghana Forestry Commission
Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention) 1989	22 March 1989	28 August 2003	30 May 2003	MESTI
Convention on the International Regulation for Preventing Collisions at Sea (COLREG) 1972	15 July 1977	04 December 1973	07 December 1973	GMA
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (the London Dumping Convention), 1972	2006	2 June 2010	02 July 2010	GMA
FAO Agreement on Port State Measures to Prevent Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IUU) 2009	5 June 2016	28 October 2010	29 November 2016	FC, MFAD
FAO Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas 2003	24 April 2003	12 May 2003	12 May 2003	FC, MFAD
FAO Code of Conduct for Responsible Fisheries 1995	31 October 1995	31 October 1995	Not applicable	FC, MFAD
International Convention for the Conservation of Atlantic Tunas 1969	21 March 1969	4 May 1966	17 April 1968	FC, MFAD

Multilateral Conventions, Agreements, Treaties and Frameworks	Entry into Force	Signature	Ratification/ Accession	Responsible Implementing Authority
International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), 2004	8 September 2017	26 November 2015	08 September 2017	GMA
International Convention for the Prevention of Pollution from Ships (MARPOL) 1973/1978	2 October 1983	03 June 1991	3 September 1991	GMA
International Convention for the Regulation of Whaling	17 July 2009	17 July 2009	17 July 2009	MFAD
International Convention for the Safety of Life at Sea (SOLAS) 1974 and the SOLAS Protocol 1978	25 May 1980	19 May 1983	19 August 1983	GMA
International Convention on Load Lines 1966	21 July 1968	5 April 1966	25 September 1968	GMA
International Convention on Oil Pollution Preparedness, Response and Cooperation 1990	13 May 1995	30 November 1990	2 September 2010	EPA
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978	28 April 1984	26 April 1989	26 April 1989	GMA
International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW F) 1995	29 September 2012	27 April 1979	2011	GMA
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND) 1971	30 May 1996	20 April 1978	16 October 1978	EPA
International Convention on Tonnage Measurement of Ships (Tonnage) 1969	18 July 1982	13 December 1973	Not yet ratified	
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969	19 July 1978	29 Nov 1969	20 April 1978	GMA
International Plan of action against Illegal, Unreported and Unregulated Fishing (IPOA-IUU) 2001	23 June 2001	Not applicable	May 2021	FC, MFAD
IMO MARPOL Regulations on Limiting Sulphur Content in Ships' Fuel Oil 2020	2020	2020	2020	GMA
IMO Strategy on Reduction of GHG Emissions from Ships 2023	2023	2023	2023	GMA, EPA
International Seabed Authority Regulations on the Exploitation of Mineral Resources in the Area (Draft)	Member of ISA since 1983	Not signed	Not applicable	

Multilateral Conventions, Agreements, Treaties and Frameworks	Entry into Force	Signature	Ratification/ Accession	Responsible Implementing Authority
Kunming-Montreal Global Biodiversity Framework 2022	2022	2022	2022	MESTI
Kyoto Protocol 1997	11 December 1997	Not applicable	30 May 2003	MESTI
Memorandum of Understanding Concerning Conservation Measure for Marine Turtles of the Atlantic Coast of Africa 1999	1 July 1999	12 November 1999	Not applicable	MLNR
Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (Part XI Agreement)	28 July 1996	16 November 1994	23 September 2016	GMA
Protocol Concerning Cooperation in Combating Pollution in Cases of Emergency 1989	18 September 1989	23 March 1981	20 July 1989	National Disaster Management Authority
Protocol for the establishment and operation of a Regional Fisheries Monitoring, Control and Surveillance Centre to the Convention for the establishment of the Fishery Committee for the West Central Gulf of Guinea 2019	13 December 2019 No	13 December 2019	13 December 2019	FC, MFAD
Protocol of 1992 to amend the 1969 International Convention on Civil Liability for Oil Pollution Damage 1992	30 May 1996	27 November 1992	3 February 2003	EPA
Protocol on the Privileges and Immunities of the International Seabed Authority	31 May 2003	12 January 1999	23 September 2016	Ministry of Foreign Affairs and Regional Integration
Protocol to amend the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND PROTOCOL) 1992	30 May 1996	Not signed	Not applicable	
Protocol to the 1972 Convention on the Prevention of Marine Pollution by dumping of Wastes and other Matter (LC PROTOCOL) 1996	24 March 2006	2 June 2010	02 July 2010	MESTI, GMA
Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil 1973	30 Mar 1983	Not signed	Not applicable	MESTI, EPA, GMA
Additional Protocol to the Abidjan Convention on Pollution from Land-Based Sources and Activities (LBSA) 2012	22 June 2012	2017	Not ratified	MESTI, EPA
Additional Protocol to the Abidjan Convention on Integrated Coastal Zone Management	03 July 2019	03 July 2019	Not ratified	MESTI, EPA
Additional Protocol to the Abidjan Convention on Sustainable Mangrove Management	03 July 2019	03 July 2019	Not ratified	MESTI, EPA

Multilateral Conventions, Agreements, Treaties and Frameworks	Entry into Force	Signature	Ratification/ Accession	Responsible Implementing Authority
Additional Protocol to the Abidjan Convention on Environmental Norms and Standards for Offshore Oil and Gas Exploration and Exploitation Activities	03 July 2019	03 July 2019	Not ratified	MESTI, EPA
Ramsar Convention on Wetlands of International Importance 1971	22 February 1988	22 June 1988	22 June 1988	MLNR
Statute of the International Tribunal for the Law of the Seas 1982	30 December 2001	30 June 1999	Not applicable	GMA
Treaty Banning Nuclear Weapon tests in the Atmosphere, in Outer Space and Underwater 1963	05 August 1963	08 August 1963	27 November 1963	Ministry of Defence
United Nation Convention on the Law of the Sea (UNCLOS) 1982	16 November 1994	10 December 1982	07 June 1983	GMA
United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling and Highly Migratory Fish Stocks (United Nations Fish Stocks Agreement)	11 December 2001	27 January 2017	27 January 2017	FC
United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ Agreement or the High Seas Treaty) 2023	19 June 2023	20 September 2023	Not ratified	MESTI
United Nations Framework Convention on Climate Change (UNFCCC) 1994	09 May 1992	12 June 1992	6 September 1995	MESTI
West and Central Africa Region (WACAF) Action Plan 1981	23 March 1981	23 March 1981	Not applicable	EPA

Annex 6: Case Studies

The Case Studies section highlights innovative projects implemented by other Ocean Panel members that facilitate marine governance and ocean planning, and specifies the financial partners involved.

Innovation in Ocean Management and Governance – Case Studies

1. Ocean Panel Countries and their experience with Blue Bonds

Blue bonds present a timely solution to mobilize action and funds for addressing significant environmental challenges.

Blue bonds are a new form of sustainable financial mechanism, a debt instrument that is issued to support investments in healthy oceans and blue economies. Earnings and proceeds generated from the investment will support the expansion of marine protected areas, improve marine governance, and prioritize the development of blue economies. Additionally, these initiatives mobilize public and private investments and facilitate transformative ocean activities which combine marine conservation activities with economic opportunity. Governments can utilize bond issuance as a means of financing much needed ways forward towards a sustainable blue economy, creating new development paths that promote environmental justice and sustainability.

As one of the world's biodiversity hotspots, the **Seychelles** government launched the world's first sovereign blue bond in 2018 to facilitate protecting their natural endowment while developing economically. Supported by the World Bank, this USD 15 million blended finance structure will help Seychelles create a diversified blue economy, safeguard fisheries, generate high-value jobs, improve ocean governance, and ensure food security. Read more here.

The Government of **Fiji**, in collaboration with the United Kingdom's Blue Planet Fund and the United Nation's Development Programme (UNDP) announced the issuance of a blue bond in November 2023. The blue bond will prioritize using nature-based solutions to protect low-lying coastal communities, develop Fiji's aquaculture sector, use integrated planning solutions to create a Blue Town and boost wastewater treatment capabilities of the Water Authority of Fiji. Leveraging private finance helps fill the finance gap faced by SIDS and supports their environmental and economic ambitions. Read more here.

In May 2023, **Indonesia** issued the world's first publicly offered sovereign blue bond, on the Japanese debt capital market, raising USD 150 million. This is in conjunction with the recently developed Indonesian blue economy strategy, that prioritized marine and coastal management and sustainable livelihoods. This initiative was developed with the assistance of UNDP, HSBC bank and Credit Agricole. Read more here.

Blue bonds present a timely solution to mobilize action and funds for addressing significant environmental challenges. However, some nations are more likely to benefit than others, for successful implementation of blue bonds countries must have a robust ocean governance system, sustainable economic activities, and a sizable pipeline of loan projects. The Asian Development Bank provides guidance on enabling conditions. Read more here.

2. Traceability and Sustainability – Chile and Artisanal Fishing

Chile's Humboldt Current is one of the planet's richest marine environments and in the top 10 fish producers. The Nature Conservancy (TNC) is working with fishing communities in the region to help establish sustainable fishing practices. Presently, Chile's artisanal fishers bring in more catch than industrial fleets. TNC is training fishermen to use Shellcatch, a traceability technology that connects consumers with sustainable seafood, helps restrict market access for illegal fishing and strengthens quality control across sustainable fisheries in Chile. They are also working to protect and restore critically important fish stock by creating no-fishing zones. Read more here.

3. Oceans for Prosperity Project – Indonesia

Oceans for Prosperity Project (2023-2028) works to enhance sustainable management in marine protected areas and coral reef fisheries and improve access to economic opportunities for local communities in target areas. The Oceans for Prosperity report provides policy recommendations to support Indonesia's transition to a blue economy, by addressing long and short-term challenges, like marine plastics, tourism potential, coastal resources and evaluating factors like capacity building, value-chain management and stakeholder engagement. The Project is implemented by the Ministry of Marine Affairs and Fisheries (MMAF) and the Ministry of National Development Planning (BAPPENAS) with US$210 million total funding from the World Bank including grants from PROBLUE Multi-Donor Trust Fund and Government of Canada, through the Indonesia Oceans, Marine Debris and Coastal Resources Multi-Donor Trust Fund (Oceans MDTF). Read more here.

4. Jamaican Path from Hills to Ocean

In 2022, Jamaica launched a USD 192.0 million, EU/GoJ funded climate resilience project. The project takes a multi-pronged approach to sustainability. It seeks to address improper disposal of plastic waste, sedimentation of the marine and freshwater environment, integrated landscape management and drought resistance measures. An additional focus area are the wetland ecosystems, the marine protected areas in Mason River and the sea grass beds in Ocho Rios. The first stage involved creating a data repository of the three Water Management Units, which would guide action and policies. Read more here.

Jamaica is also one of the first countries to join the International Maritime Organisation (IMO's) GloLitter project to combat ocean plastic waste. The project will address retrieval of lost and discarded fishing gear, and it will help establish port facilities and initiatives for the recycling and reuse of marine plastic litter. It also seeks to encourage knowledge management and capacity building, especially to enhance the enforcement of MARPOL Annex V, the London Convention, and the London Protocol. Jamaica is one of the 10 countries selected as lead partners in the USD 4.5 million program. Read more here.

5. Marine Conservation – UNEP & The International Coral Reef Initiative

Marine conservation projects from around the world have received grants of US$80,000 from UNEP and the International Coral Reef Initiative. These grants are designed to help store and preserve seagrass meadows, mangrove forests and coral reefs. UNEP received more than 430 grant proposals from 93 countries, ultimately choosing seven winners from the Caribbean, Africa and Asia.

The Philippines will use the money to develop a governance system that integrates conservation and sustainability into the novel management of three coastal marine ecosystems – coral reefs, mangroves and seagrasses.

Costa Rica will replant mangroves in the Hammerhead Shark Sanctuary at Costa Rica's Golfo Dulce, simultaneously assisting the critically endangered scalloped hammerhead sharks and reviving mangrove forests, one of the most important and threatened coastal ecosystems.

Unregulated fishing and the lack of awareness of the importance of seagrass in **The Gambia** have hindered the natural regeneration of this undersea plant. The Gambia Department of Parks and Wildlife Management is aiming to reverse the decline of seagrass. It is striving to become the first community-led seagrass conservation and restoration effort in the south-western beach communities in Gunjur and Kartong.

Annex 7: Resources Inventory – List of Potential Development Partners for Ghana

The Ghana CNA aims to lay the groundwork for developing institutional capacities that facilitate sustainable oceans governance in Ghana. Therefore, this CNA report provides a list of potential partners in Ghana with whom the Ghanaian government can collaborate to strengthen their Sustainable Ocean Planning efforts. This annex includes information about ongoing and completed projects in Ghana that address environmental and ocean governance concerns, it aims to signpost the most viable partners (both international and domestic) that are involved in addressing relevant capacity gaps.

The potential partners identified include:

1. Public: Bilateral agencies/aid agencies; UN agencies, International Finance Institutions; National Governments; and regional/local authorities.
2. Private: Corporate partners and their linked foundations; business/private sector associations, Chambers of Commerce/Trade, etc.
3. Domestic and international organisations including NGOs.
4. Other training institutions, including academic and research.

1. African Development Bank (AfDB)

Project	Short description	Funds available	Time Frame
Engaging Local Communities in REDD+/Enhancement of Carbon Stocks Project	The project contributed to the increase of carbon stocks, and poverty reduction in the off-reserve areas of the High Forest Zones, by engaging communities in land management approaches that generate direct financial and environmental benefits **Read more here**. *Implementing Agency*: Ministry of Lands Forestry and Mines.	USD 15 million	**Completed** 26 July 2014 – 31 December 2020
Form Ghana Reforestation Project	The project aims to (i) increase access to improved and sustainable climate resilient sanitation and hygiene with improved livelihoods for the urban poor, and (ii) strengthen public and private sector capacity to better deliver and manage sanitation infrastructure and services. **Read more here.** *Implementing Agency*: Ministère de l'Assainissement et des Ressources en eau.	USD 50 million	**Ongoing** 19 September 2017 – 31 March 2026
Greater Accra Sustainable Sanitation and Livelihoods Improvement Project	The project aims to (i) increase access to improved and sustainable climate resilient sanitation and hygiene with improved livelihoods for the urban poor, and (ii) strengthen public and private sector capacity to better deliver and manage sanitation infrastructure and services. **Read more here.** *Implementing Agency*: Ministère de l'Assainissement et des Ressources en eau.	USD 50 million	**Ongoing** 19 September 2017 – 31 March 2026

2. European Union (EU)

Project	Short description	Funds available	Time Frame
E-Waste Management in Ghana (E-MAGIN GHANA)	The project aims to prevent environmental pollution in Ghana by improving the management of e-waste and moving towards a Sustainable Consumption and Production (SCP) through an integrated multi-stakeholder approach. **Read more here.** *Implementing Agency*: University of Cape Coast.	USD 1.4 million Source: Development Cooperation Instrument (DCI)	**Ongoing** December 2018 – December 2022
Regreening Africa: Restoring Land and Livelihoods in the Sahel	The project aims to support land restoration across one million hectares, benefitting 500,000 households in Mali, Niger, Senegal, Ghana, Ethiopia, Kenya, Somalia and Rwanda. **Read more here.** *Implementing Agencies*: GIZ, World Agroforestry/ICRAF, World Vision, Oxfam, CARE, SahelEco, and Catholic Relief Services.	USD 28 million Source: Development Cooperation Instrument (DCI)	**Ongoing** July 2017 – September 2022
Resilience Against Climate Change – REACH	The project aims to increase rural communities' resilience to fight climate change, and to facilitate adaptation and mitigation of climate change impacts on rural livelihoods in the savannah ecosystem of Ghana by building district databases with precise planning data. **Read more here.** *Implementing Agency*: The Competitive Cashew Initiative (ComCashew) by GIZ.	USD 22 million	**Ongoing** September 2018 – December 2024
EU/Embassy of the Kingdom of the Netherlands/United Nations Capital Development Fund (UNCDF)/ SNV Netherlands Development Organisation			
Boosting Green Employment and Enterprise Opportunities in Ghana (GrEEn)	The project aims to promote and support the growth of climate resilient local economies in the Ashanti and Western regions by providing trainings and financial support for green businesses such as plastic waste recycling, clean cookstove production and distribution, as well as organic horticulture and compost production. **Read more here.**	USD 22 million Source: European Union Emergency Trust Fund (EUTF) for Africa	**Ongoing** May 2020 – May 2023

3. Food and Agriculture Organization of the United Nations (FAO)

Project	Short description	Funds available	Time Frame
Promoting and Enhancing Sustainable Management of Wetland Resources for Better Ecosystem Services and Resilient Livelihoods of Keta and Ada Coastal Communities Sector in Africa (Roots and Tuber)	The project helped address issues militating against lagoons through a holistic approach with the overall goal of enhancing the management of lagoon resources while promoting livelihood options and resiliency of Keta and Ada Coastal community dwellers. **Read more here.** *Implementing Agency*: Ministry of Health and Environment, Science, Technology and Innovation (MESTI).	USD 395 thousand	**Completed** 01 September 2017 – 31 August 2019
Support to the Planting for Food and Jobs Campaign	The project helped support the Government to create an enabling environment for employment creation through agricultural entrepreneurship. **Read more here.** *Implementing Agency*: Ministry of Agriculture.	USD 434 thousand	**Completed** 25 October 2017 – 31 December 2019

4. UK – Foreign, Commonwealth and Development Office (FCDO)

Project	Short description	Funds available	Time Frame
Agriculture Transformation in Ghana	The project aims to accelerate economic transformation in Ghana through developing markets for agriculture and trade, improving resilience to climate change, and creating additional jobs and increased incomes by focusing on the development of high potential value chains in pro-poor sectors, supporting them to become productive, competitive and attractive for investment. **Read more here.** *Implementing Agencies*: AgDevCo and TechnoServe.	USD 3.2 million	**Ongoing** 13 January 2020 – 01 June 2025
Ghana Oil and Gas for Inclusive Growth	The project helped strengthen oversight and enhance regulation of the sector; enhance revenue capture; improve revenue management; and promote accountability by building the capacity to monitor and challenge state performance by civil society and Parliament as a corollary for capacity building. **Read more here.** *Implementing Agencies*: Africa Centre for Energy Policy, DAI Europe, Oxford Policy Management, and Natural Resource Governance Institute.	USD 20 million	**Completed** 12 March 2014 – 30 August 2022
Land Degradation Neutrality (LDN) Fund	The LDN Fund invests in projects which reduce or reverse land degradation and thereby contribute to 'Land Degradation Neutrality'. **Read more here.** *Implementing Agency*: Mirova Natural Capital Ltd.	USD 13 million (for six countries including Ghana)	**Ongoing** 12 December 2019 – 12 December 2034

5. German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – International Climate Initiative (BMU-IKI)

Project	Short description	Funds available	Time Frame
Mami Wata Initiative	The pilot project involved analysing and economic activities, ecosystem services and conservation values in Ghana's maritime area. The project's overall goal is to contribute to sustainable economic growth by ensuring an integrated management of Ghana's coastal and marine environment. **Read more here.**	Not available (NA)	**Ongoing** 2019 –
Addressing REDD+ through Landscape-Scale Sustainable Commodity Production Models	The project aims to work with participating partners to develop and roll out the 'LandScale' (LS) framework which will mobilise private-sector investment in low-emission agricultural production that avoids deforestation. **Read more here.** *Implementing Agencies*: Verified Carbon Standard Association (VERRA) - USA, Climate Community & Biodiversity Alliance (CCBA), Fundación Solidaridad Latinoamericana 'Solidaridad', IUCN–Regional Office for Mexico, Central America and the Caribbean (ORMACC), Nature Conservation Research Centre (NCRC), Rainforest Alliance and the Proforest Initiative.	USD 4.6 million (for four countries including Ghana)	**Completed** October 2017 – March 2022
Catalyzing Private Financing for Climate Impact in Africa	BMU is making a climate policy contribution to the Compact with Africa (CwA) initiative which ensures that the local green economy of the CwA countries is sustainably strengthened. **Read more here.** *Implementing Agency*: The World Bank Group.	USD 22 million (for seven countries including Ghana)	**Ongoing** January 2021 – December 2026
NDC Action – Facilitating Implementation of Climate-Resilient and Low-Carbon Development	The project aims to address existing obstacles by helping its ten partner countries to translate their NDCs into strategies and measures ready for financing and implementation. **Read more here.** *Implementing Agency*: UNEP.	USD 17 million (for ten countries including Ghana)	**Completed** April 2019 – March 2023

Project	Short description	Funds available	Time Frame
NDC Support Programme	The project helps countries to comply with their Paris Agreement commitments, to build institutional and technical resources and skills through technical and financial assistance for climate change mitigation, and to develop the global knowledge exchange and peer-to-peer learning for leadership and awareness raising. **Read more here.** *Implementing Agencies*: UNDP and diverse climate change relevant institutions in the respective partner countries.	USD 49 million (for 37 countries including Ghana)	**Ongoing** January 2017 – December 2024
Operationalising the Landscape Approach for Biodiversity and Benefits: Policy, Practice and People	The project aims to fund resources and skills aimed at improving the integration of biodiversity into national policies and land development planning so as to increase awareness of the value of biological diversity. **Read more here.** *Implementing Agencies*: Community Based Natural Resources Forum (CBNRM-Forum), Community-Based Rural Development Program – Phase 3 (PNGT2-3), Riak Bumi, and the Directorate-General for the Green Economy and Climate Change (DGEVCC).	USD 5 million (for three countries, including Ghana)	**Ongoing** June 2018 – August 2025
West African Alliance on Carbon Markets and Climate Finance	The project aims to deepen sub-regional cooperation and enhance in-country readiness for implementation of Article 6 of the Paris Agreement which ensures that African priorities are reflected in the design of the new carbon market approaches. **Read more here.** *Implementing Agency*: West African Development Bank.	USD 3 million (for Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo)	**Ongoing** August 2020 – July 2024

6. GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

Project	Short description	Funds available	Time Frame
GIZ/Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)			
Forest Landscape Restoration through a Sustainable Wood Energy Value Chain	The project aims to improve the sustainable production and efficient use of wood energy and ensure that forests in selected regions of Ghana are preserved and restored. *Implementing Agencies*: Energy Commission – Ghana, Environmental Protection Agency (EPA), Forestry Commission – Ghana, International Union for Conservation of Nature (IUCN), National Committee of the Netherlands, MESTI and the Ministry of Energy. **Read more here.** *Executing Agency*: Ministry of Lands and Natural Resources.	USD 5 million	**Completed** April 2019 – May 2023
GIZ/BMZ			
Environmentally Sound Disposal and Recycling of E-waste	The project aims to improve the prerequisites for sustainable handling of e-waste by combining policy advice with measures to strengthen the recycling industry and helping informal recycling workshops make the transition to formal small businesses. **Read more here.** *Executing Agency*: MESTI.	Not Available (NA)	**Ongoing** 2016 – 2026

7. Global Environment Facility (GEF)

Project	Short description	Funds available	Time Frame
Enabling Preparation of Ghana's Fourth National Communication (NC4) and Second Biennial Update Report (BUR2) to UNFCCC	The project helped Ghana prepare and submit its Second Biennial Update Report (BUR4) and Fourth National Communication (NC5) that comply with the UNFCCC reporting requirements. **Read more here.** *Implementing Agency*: United Nations Environment Programme (UNEP). *Executing Agency*: EPA.	USD 952 thousand Source: GEF + Co-finance	**Completed** 2016–2021
Using Marine Spatial Planning in the Gulf of Guinea for the Implementation of Payment for Ecosystem Services and Coastal Nature-based Solutions	The project focuses on the enhancement of coastal and marine habitats in Ghana, Togo and Cote d'Ivoire through coordinated spatial planning, economic incentives and nature-based solutions. It is being implemented by the IUCN with executive agency function from the Fisheries Committee for the Central West Gulf of Guinea. **Read more here.**	USD 3 million	**Ongoing** 2023 onwards
Establishing a Circular Economy Framework for the Plastics Sector in Ghana	The project aims to strengthen the national capacity of Ghana to transition to a circular economy framework that addresses plastic leak-age into the country's oceans and waterways and facilitates sustainable plastics management. **Read more here.** *Implementing Agency*: United Nations Industrial Development Organization (UNIDO). *Executing Agencies*: MESTI and EPA.	USD 88.9 million Donor: GEF + Co-finance	**Ongoing** 15 November 2021 – 15 November 2026
Food Systems, Land Use and Restoration (FOLUR) Impact Program	The project aims to transform the global food and land use systems through projects that restore degraded landscapes and intensify sustainable land management practices. *Implementing Agencies*: FAO, UNEP, UNDP, IFAD, World Wildlife Fund – US Chapter (WWF), CI, UNIDO and The World Bank. **Read more here.** *Executing Agencies*: Governments of participating countries and other institutions.	USD 345 million	**Ongoing** December 2020 – December 2027
Preparation of Ghana's Fourth Biennial Update Report and Fifth National Communication under the UN Framework Convention on Climate Change (UNFCCC)	The project aims to help Ghana prepare and submit its Fourth Biennial Update Report (BUR4) and Fifth National Communication (NC5) that comply with the United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements. **Read more here.** *Implementing Agency*: UNEP. *Executing Agencies*: Climate Change Unit and EPA.	USD 852 thousand Donor: GEF Trust Fund	**Ongoing** 01 January 2022 – 30 April 2025
Landscape Restoration and Ecosystem Management for Sustainable Food Systems	The project aims to strengthen integrated natural resource management and increase benefits to communities in targeted savannah and cocoa forest landscapes. **Read more here.** *Implementing Agency*: The World Bank. *Executing Agencies*: EPA (under MESTI) and Ministry of Lands and Natural Resources.	USD 142.2 million Source: GEF + Co-finance	**Ongoing** 6 October 2021 – 30 September 2027

Project	Short description	Funds available	Time Frame
Strengthening Ghana's National Capacity for Transparency and Ambitious Climate Reporting	The project aims to assist Ghana strengthen its national system to be able to effectively and regularly plan, implement, track and report on its NDC to respond to the transparency requirements of the Paris Agreement. **Read more here.** *Implementing Agency*: UNEP. *Executing Agency*: EPA.	USD 2.2 million Source: GEF + Co-finance	**Ongoing** 04 March 2019 –
Support to Preparation of the Fourth National Biosafety Reports to the Cartagena Protocol on Biosafety – Africa Region	The project assisted GEF-Eligible Parties to the Cartagena Protocol on Biosafety to prepare and submit their Fourth National Reports on measures that each Party has taken to implement the Cartagena Protocol on Biosafety. **Read more here.** *Implementing Agency*: UNEP.	USD 2.5 million	**Completed** 31 August 2020 – 31 July 2021

8. Green Climate Fund (GCF)

Project	Short description	Funds available	Time Frame
GCF/MUFG Bank, Ltd.			
Arbaro Fund – Sustainable Forestry Fund	The projects aims to provide effective climate change mitigation outcomes through investing in sustainable plantation forestry projects in emerging forestry markets of Latin America and Sub Saharan Africa, while also bringing adaptation co-benefits. **Read more here.**	USD 200 million (for Paraguay, Ghana, Sierra Leone, Uganda, Ecuador, Peru and Ethiopia) Donor: GCF + Co-finance	**Ongoing** 12 March 2020 – 30 October 2035
GCF/UNDP			
Ghana Shea Landscape Emission Reductions Project	The project aims to restore degraded savannah forests and strengthen livelihoods in this area by strengthening REDD+ systems, by supporting self-financing community management to restore savannah forests and by using public-private partnerships to restore degraded shea parklands. **Read more here.**	USD 54.5 million Donor: GCF + Co-finance	**Ongoing** 10 May 2021 – 10 May 2028

9. International Union for Conservation of Nature (IUCN)

Project	Short description	Funds available	Time Frame
IUCN/BMU			
Stablizing Land Use (PLUS) Project	The project is a landscape mechanism for enhancing biodiversity in agricultural land, ecological connectivity and Reducing Emissions from Deforestation and Forest Degradation (REDD+). *Implementing Agencies*: Ministry of Lands and Natural Resources and the Forestry Commission.	Not Available (NA)	**Completed** 2017 – 2020
IUCN/BMU-IKI			
Restoration in Supply Chains from Zero Net Deforestation to Net Positive Action (RESUPPLY)	The project aims to technically support companies and other landscape actors in identifying Forest Landscape Restoration (FLR) opportunities, costs and benefits in supply chains. **Read more here.**	Not Available (NA)	**Completed** 2019 – 2022

10. Japan International Cooperation Agency (JICA)

Project	Short description	Funds available	Time Frame
Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme (MASAPS-KIS Project)	The project increased the total agricultural production in irrigation schemes of Ghana. *Implementing Agency*: Ghana Irrigation Development Authority (GIDA). **Read more here.**	Not Available (NA)	**Completed** 28 January 2016 – 27 January 2021

11. The World Bank

Project	Short description	Funds available	Time Frame
Greater Accra Resilient and Integrated Development Project	The project aims to improve flood risk management and solid waste management in the Odaw River Basin of the Greater Accra Region and improve access to basic infrastructure and services in the targeted communities within the Odaw River Basin. **Read more here.** *Implementing Agencies*: Ministry of Works and Housing, Ministry of Inner City and Zongo Development, Ministry of Local Government and Rural Development, Ministry of Sanitation and Water Resources, and Ministry of Health.	USD 200 million	**Ongoing** 29 May 2019 – 31 December 2025
West Africa Coastal Areas Management Program (WACA)	The project will look towards reducing flooding in Greater Accra, improving ecosystem health and protecting communities from erosion in the Volta Delta and Keta Lagoon through the protection and restoration of mangrove forests; nourishment of sandy barriers; dune re-vegetation; and building of protective infrastructure. **Read more here.**	USD 246 Million for Ghana, The Gambia and Guinea Bissau	**Ongoing** December 2022 onwards
Mangrove Blue Carbon Pilot Programme	Ghana will plant 3,000 hectares of mangrove along its cost to increase carbon storage, to revive fish habitats and protect its marine environment. Financed by the Problue grant and Danish energy company Ørsted. **Read more here.**	USD 13 million	**Ongoing** 2023 – 2043

12. United Nations Development Programme (UNDP)

Project	Short description	Funds available	Time Frame
UNDP/Adaptation Fund (Af)			
Increased Resilience to Climate Change in Northern Ghana	The project helped enhance the resilience and adaptive capacity of communities to climate impacts and risks on water resources in Northern Ghana. **Read more here.**	USD 9.4 million	**Completed** January 2016 – December 2022
UNDP/GCF			
Green Climate Fund Readiness Programme	The project helped a) build and strengthen the institutional capacity of national entities in Ghana, b) Ghana prepare climate change mitigation and adaptation investment strategies, programmes and projects. **Read more here.**	USD 599 thousand	**Completed** January 2019 – June 2022

Project	Short description	Funds available	Time Frame
UNDP/Government of Germany/Swedish International Development Cooperation (Sida)			
NDC Support Programme	The project aims to support Ghana's efforts, to turn the Intended Nationally Determined Contributions (INDC) into concrete action by enhancing technical as well as institutional capacities building on the results achieved under Low Emissions Capacity Building Programme (2013–2017). **Read more here.**	USD 4 million	**Ongoing** August 2017 – December 2023

13. United States Agency for International Development (USAID)

Project	Short description	Funds available	Time Frame
USAID Fisheries & Coastal Management Capacity Building Project	Undertaken in conjunction with University of Cape Coast, the USAID/UCC Fisheries & Coastal Management Capacity Building Support project is seeking to improve the sustainable management of Ghana's marine and coastal resources. USAID's technical and financial support will support the management of fisheries and coastal resources on a sustainable basis to enhance the nation's social and economic development. **Read more here.**	USD 5 million	**Completed** 2014 – 2020
Women Shellfishers and Food Security Project – Phase 1 | UCC Subgrant	This project seeks to address the need for greater attention to food security for women shellfishers and their families while improving biodiversity conservation of the ecosystems on which their livelihoods depend. In collaboration with the University of Rhode Island, the University of Cape Coast, University of Ghana and TRY Oyster Women's Association in the The Gambia. **Read more here.**	USD 300,000	**Ongoing** October 2020 – September 2022
Women Shellfishers and Food Security Project – Phase 2 | UCC Subgrant	The project aims to strengthen the evidence base, increase awareness, and equip stakeholders to adapt and apply successful approaches to rights-based, ecosystem-based, participatory co-management of shellfisheries by women in mangrove ecosystems in West Africa. **Read more here.**	USD 677,413	**Ongoing** October 2022 – September 2025
First Hydro- Power Plant, Ghana	The Ghanaian government is seeking to diversify their energy mix. USAID and the US Department of Energy's National Renewable Energy Laboratory have provided technical assistance on integrating solar power into a hydroelectric dam to augment energy diversity. The project has been commissioned and should be completed by 2025. **Read more here.**		**Ongoing** 2019 –
Power Africa	The project convenes the collective resources of the private sector, international development organisations and government from around the world to increase energy access and end energy poverty. They have supported the development of 550 megawatts of electricity generation projects in Ghana. **Read more here.**		**Ongoing** 2013 –
Feed the Future Ghana Fisheries Recovery Activity USAID	Feed the Future Ghana Fisheries Recovery Activity – is a five-year, USD 17.8 million project funded by USAID. The project aims to assist in the prevention of a near collapse of Ghana's small pelagic fisheries and establish a foundation for their ecological recovery. **Read more here.**		**Ongoing** 2021 – 2026

14. Other Relevant Projects

Project	Short description	Funds available	Time Frame
Lighthouse Foundation			
Coastal Marine Conservation Drive Project (COMADRIP)	The project will create a pilot site for the design and development of a Marine Protected Area (MPA) management strategy for the Greater Cape Three Points area that can feed into the national process for coastal conservation in Ghana. **Read more here.**	EUR 20, 000	**Ongoing** March 2021 – December 2022
Lekela Power			
Ayitepa Wind Farm	Currently the largest wind farm in West Africa under construction it is expected to generate sufficient electricity to meet the needs of more than 150,000 average Ghanaian households annually. This project is funded by NEK Umwelttechnik AG, Lekela Power, Atlanta International Ltd., Upwind International AG. **Read more here.**	525 million USD	**Ongoing** 2017 –
Bui Power Authority			
Solar Facility Bui Power Authority	Absa Bank Ghana facilitated a green corporate loan of US$24 million to establish a solar facility and assist in Ghana's renewable energy transition. **Read more here.**	24 Million USD	**Ongoing** 2023 –
Nippon Foundation			
Ocean Litter Project	The project applies an interdisciplinary approach to addressing marine litter pollution through integrating scientific models, sociological field research and legal and policy analyses. **Read more here.**	USD 10,000	**Completed** November 2020 – 2021
Ocean Associated, Inc			
Ghana Marine Mammal By-catch and Strandings Management Programme	The project aims at improving cetacean conservation through effective data management, behavioural change advocacy and increased deterrence in fishing communities across the coastal regions of Ghana. **Read more here.**	USD 10,000	**Ongoing** March 2022 – February 2023
Association of African Universities			
Inter ACE Marine Litter Network (MALNET) Project	The project will establish and promote a network of research and development actors, to accelerate scientific research in marine litter and coastal degradation, and strengthen the interlinkages and partnerships between ACE Impact Centres and collaborators across the West African Region as a whole. **Read more here.**	USD 100,000	**Ongoing** June 2021 – July 2023

Other Potential Partners:

This desk study aims to review potential development partners for Ghana who can provide funding or resources support to the Government. Other potential development partners that are not mentioned in this report are listed below:

1. Adaptation Fund (Af)
2. African Wildlife Foundation (AWF)
3. Government of Germany
4. Government of Italy
5. SNV Netherlands Development Organisation
6. Swedish International Development Cooperation (Sida)
7. The Forests Dialogue (TFD)

Conclusion

This desk-based review of potential partners that can help support capacity building programs will be used to finalize the CNA report on Ghana. This can also serve as the preliminary desk study for long-term development programs in the selected country by UNEP staff working specifically on the OfD Project and by other UNEP staff of the Resilience to Disasters and Conflicts Global Support Branch.

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Annex 8: Proposed list of courses and trainings needed for strengthening environmental management in oceans governance

1. Capacity Building Trainings For Strengthening Institutional Capacities For Oceans Governance

This annex includes a preliminary list of proposed courses/trainings aimed at increasing technical knowledge and skills for strengthening institutional capacities for oceans governance in Ghana. In doing so, the annex states why such a training would be relevant, who would benefit from training on that subject area, and what issues/modules would be ideally covered under such a training. While the list speaks primarily to the three focus institutions for this CAN (i.e. MESTI, EPA and LUSPA), these trainings would also benefit relevant staff from other relevant MDAs involved in oceans governance in Ghana.

The aim of this annex is to provide the government with examples of capacity building trainings that could be planned and developed to enhance the technical knowledge and skills of relevant government functionaries. This list can also be used in discussions with academic and development partners for future programming.

A. Foundation Course on Sustainable Ocean Governance and Management	
Why	To train those who will have Government oversight and the responsibility for decision making.
Course elements	• Oceanic processes and climate interactions • Interactions between land and sea • Ocean governance: definitions, framework, implementation and distinction between various governance concepts, approaches, and tools • Transboundary marine governance • Co-existence of sectors – Sustainable Ocean Planning – Marine Spatial Planning – Strategic Environmental Assessments – Links to a Sustainable Blue Economy • Data management for sustainable oceans governance • Case studies from other countries – approaches and lessons learned
Recipients	• Policymakers and leadership at Environment Directorate, EPA, LUSPA, GMA, GPHA, GHA, Fisheries Commission, NDPC, NADMO and Ghana Navy • Responsible staff with regulatory functions at MESTI, EPA and LUSPA

B. Training on Key Coastal and Marine Processes and the Impact of Human Activities	
Why	To strengthen technical knowledge in order to be able to interpret data and other information from marine and coastal monitoring programs, SEAs, EIAs, and relate such information to various human activities.
Course elements	• Processes driving marine productivity • Pelagic, demersal, and benthic food chains • Marine and coastal biodiversity • Strategies for the design of marine monitoring programs – including statistics related to sampling stations and the number of samples in relation to sources of pollution and other sources of stress • Tools/methods for monitoring marine and coastal processes – including water, sediment, and tissue sampling as well as the use of remote sensing, drones etc. • Advanced knowledge on the interpretation of results from chemical and biological analyses • Human activities influencing the marine environment – including the different impacts of shipping, fisheries, different types of wastes and waste waters, dredging and dumping, aquacultures, as well as the effects of climate change on the marine environment • Impact assessment as a tool on strategic and project specific levels
Recipients	• Technical staff at Environment Directorate, EPA, Fisheries Commission, LUSPA and Wildlife Division of Forestry Commission
C. Foundation Course on Environmental Data Management in the context of Ocean Governance	
Why	To plan and carry out environmental baselining and monitoring programs in coastal and marine areas.
Course elements	• Basic knowledge of relevant environmental issues such as plastic pollution, waste management, biodiversity loss etc. • Techniques for monitoring of water, sediment, and tissues sampling • Carrying out sampling at sea, sample preservation, 'chain-of-custody', and interpretation of results from chemical and biological analyses • Basic safety at sea protocols and vessel operation licences • Contextual knowledge and methodologies of data preparation – select, clean, integrate, format and store data • Contextual knowledge and methodologies of data understanding. – collect, describe (metadata), verify data quality • Standardized procedures for data collection • Contextual knowledge on environmental data sharing principles and flows of data between different agencies and stakeholders
Recipients	• Data analysts in EPA, LUSPA, Fisheries Commission and GMA • Field personnel and knowledge managers of relevant MDAs

D. Foundation Course on Digital and Technological Literacy in the context of Environmental and Ocean Governance	
Why	To develop relevant technological and digital know-how that will be key to building capacity and strengthening monitoring and compliance efforts.
Course elements	• Knowledge on the usage and maintenance of technology (hardware and software) such as Network Attached Storage (NAS), ArcGIS, R, Stata etc. • GIS software (e.g., basic concepts as coordinate systems, geometries, attributes, raster/vector; visualise data in different formats; creating metadata; conducting GIS analysis; georeferencing paper maps) • Knowledge on Environmental Information Networks and/or other data/knowledge sharing platforms in the country
Recipients	• Analysts in EPA, LUSPA, Fisheries Commission and GMA • Field personnel and knowledge managers of relevant MDAs
E. Training on Integrated Marine and Coastal Management Approaches	
Why	To develop baseline knowledge on dynamic, inclusive and multi-disciplinary area-based management approaches that promote sustainable management of coastal spaces, while considering environmental and socioeconomic factors.
Course elements	• Integrated Coastal Zone Management • Marine Protected Areas • Roles and Responsibilities in the Coastal Zone • Formulation and Programme Implementation • Data Repository, information on existing marine resources, ecosystem services and relevant cultural concerns • Conflict resolution for usages of the marine space • Community-managed natural resource management and coastal community development
Recipients	• Environment Directorate, EPA, LUSPA, GMA • Managers in central and local governments as well as industry
F. Foundation Course on Ocean Planning Tools	
Why	To develop an understanding about ocean planning tools that incorporate environmental and sustainability objectives in the formulation of policies and lead to decision-making that balances human activities with the excessive strain on marine resources.
Course elements	• Marine Spatial Planning and other geo-spatial planning tools • Strategic Environmental Assessments and Ocean Governance • Cumulative impacts • Planning for data sharing among relevant stakeholders • Importance of public consultation and participation • Stewardship and Conservation • Case studies
Recipients	• Environment Directorate, EPA, LUSPA, GMA • Managers in central and local governments as well as industry

G. Foundation Course on Acute Marine Pollution – Preparedness and Response	
Why	Provide basic knowledge of what constitutes acute marine pollution with a focus on oil, chemicals and plastics, and basic understanding of national preparedness and response systems.
Course elements	• Chronic and acute pollution, definitions, quantities • The fate and persistence of oil and plastics, factors determining their degradation • Environmental and socioeconomic impacts • Response planning, oil spill contingency planning, coastal sensitivity mapping • The importance of prevention • Integration of national oil spill preparedness and response systems and national disaster management systems
Recipients	• Actors involved in addressing marine pollution, and disaster management systems, they may come from industry, local and central governments, local communities, port authorities, non-governmental organizations, etc.

2. Available Trainings And University Courses Related To Environmental Management In Oceans Governance In Ghana

Sl.	Institution	Program
Integrated Coastal Zone Management		
1.	University of Ghana	M.Sc Coastal Zone Management *Source:* https://www.ug.edu.gh/marine-fisheries/academics/course_schedule M.Phil Marine Science *Source:* https://www.ug.edu.gh/marine-fisheries/academics/course_schedule
2.	University of Cape Coast	Ph.D Integrated Coastal Zone Management *Source:* https://ucc.edu.gh/programmes/doctor-philosophy-integrated-coastal-zone-management M.Phil Integrated Coastal Zone Management *Source:* https://ucc.edu.gh/programmes/master-philosophy-integrated-coastal-zone-management
Disaster Risk Management from a climate change perspective		
1.	University of Cape Coast	M.Sc in Disaster Management *Source:* https://ucc.edu.gh/programmes/master-science-disaster-management
Aquatic resource management and planning		
1.	University of Cape Coast	M.Phil Oceanography and Limnology *Source:* https://ucc.edu.gh/programmes/master-philosophy-oceanography-and-limnology Ph.D. in Oceanography and Limnology *Source:* https://ucc.edu.gh/programmes/doctor-philosophy-oceanography-and-limnology

Sl.	Institution	Program
Policy/Ocean governance		
1.	University of Ghana School of Law	LL.M. in Law of the Sea and Ocean Governance *Source:* https://law.ug.edu.gh/law-sea-and-ocean-governance-ma-llm M.A. in Law of the Sea and Ocean Governance *Source:* https://law.ug.edu.gh/law-sea-and-ocean-governance-ma-llm
2.	University of Cape Coast	MPhil Blue Economy, Governance and Social Resilience *Source:* https://acecor.ucc.edu.gh/programme/mphil-blue-economy-governance-and-social-resilience
3.	University of Michigan (US)	Coastal Ocean Environment Summer School in Ghana *Source:* https://lsa.umich.edu/earth/community-engagement/coastal-ocean-environment-summer-school-in-ghana.html
Ecosystems/Biodiversity		
1.	Kumasi Technical University	Master of Technology in Water and Environmental Engineering *Source:* https://kstu.edu.gh/index.php/academics/programmes/master-technology-water-and-environmental-engineering
Marine Spatial Planning		
1.	Marine Spatial Planning Global	MSP Global 2.0 National Training in Ghana *Source:* https://www.mspglobal2030.org/events/mspglobal-2-0-national-training-in-ghana/
2.	MAMI WATA (MW)	Training of Trainers in Marine Spatial Planning (MSP) *Source:* https://mamiwataproject.org/2022/06/01/training-of-trainers-msp-west-africa%EF%BF%BC/
Climate Change from an Ocean Perspective		
1.	University of Cape Coast	Climate Change Adaptation and Mitigation in Coastal areas *Source:* https://acecor.ucc.edu.gh/programme/climate-change-adaptation-and-mitigation-coastal-areas
Undergoing Accreditation		
1.	Regional Maritime University	B.Sc. Oceanography and Marine Technology *Source:* https://rmu.edu.gh/marine-engineering-department/ MSc. Coastal Environmental Management *Source:* https://rmu.edu.gh/marine-engineering-department/

Notes

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