



## TERMS OF REFERENCE

### CONSULTANCY SERVICES FOR THE ASSESSMENT AND DESIGN OF FLOOD MANAGEMENT MEASURES IN GRENVILLE, SOUBISE AND MARQUIS AND SUPERVISION OF THE SUBSEQUENT WORKS IN SOUBISE AND MARQUIS, FINANCED BY THE WORLD BANK

## 1 Background

Grenada is a small island developing state (SIDS) with a middle-income economy, a favorable multi-year macroeconomic performance and a decreasing poverty rate, prior to the COVID-19 outbreak. It has a total land area of 135 sq. miles, approximately 112,784 inhabitants<sup>1</sup> and a Gross Domestic Product (GDP) of US\$1.211 billion as of 2019<sup>2</sup>, generated mainly by activities in the tourism, construction, transport, and private education sectors. Preceding the pandemic, Grenada stood out in the region with its steadfast reform path to build economic resilience, including the development of e-business systems; better labor skill training and education system; branding tourism; the national strategy to develop the energy sector, agriculture sector and the Blue Economy to pursue a sustainable and resilient economy.

Grenada is highly exposed to hydro-meteorological and geophysical hazards, exacerbated by climate change, which pose a significant risk to the country's population and economy. Between 1975 and 2018, the most significant disasters in Grenada caused damages and losses equivalent to US\$967 million.<sup>3</sup> Category 5 Hurricane Ivan, in 2004, had the biggest impact with damages and losses amounting to about twice the country's GDP. Hurricane Emily caused further damage to the country

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<sup>1</sup> Worldometer elaboration of the latest United Nations data

<sup>2</sup> World Bank national accounts data, and OECD National Accounts data files.

<sup>3</sup> In 2017 U.S. dollars. The post-disaster needs assessments account for direct damage to assets and buildings (that is, damages) and indirect losses due to variation in prices or revenues (that is, losses). World Bank (2019) Program Document for a Disaster Risk Management Development Policy Credit with Deferred Drawdown Option.

in 2005. On average per year, hydrometeorological events represent an estimated direct cost of US\$10.9 million, equivalent to 1 percent of the country's GDP<sup>4</sup>.

Recent climate change projections for Grenada indicate a significant increase in the frequency or intensity of extreme weather events, as well as impacts such as prolonged droughts, increased sea surface temperatures and sea-level rise.<sup>5</sup> With the increase in intensity of extreme weather events, and impending sea-level rise, storm surges are also expected to worsen causing flooding and coastal erosion with a direct or indirect effect on people living near the coast, critical infrastructure, tourism and coastal ecosystems.<sup>6</sup> Grenada is expected to have high levels of shoreline retreat and landmass loss by 2050 in comparison to other Caribbean islands.<sup>7</sup> An additional one-meter sea-level rise would place 73 percent of Grenada's major tourism resorts at risk, threatening the livelihoods of those working in the industry<sup>8</sup> and flooding several stretches of primary roads that are currently located at sea-level along its coast. Likewise, communities located along these low-lying areas remain vulnerable to climate and disaster risks and the associated socio-economic impacts.<sup>9</sup>

## 1.1 Project Overview

These Terms of Reference focus on flood management and coastal rehabilitation works along Grenada's Eastern Corridor, specifically in the coastal areas of Grenville, Soubise and Marquis. Grenville is the second largest city in Grenada and connects the two main corridors on the island: the Western Corridor towards the capital Saint George's and the Eastern Corridor to the South. Large stretches of the Eastern Corridor follow the coastline, connecting Grenville to the South of the island towards the airport and, ultimately, the capital city.

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<sup>4</sup> World Bank (2019) Program Document for a Disaster Risk Management Development Policy Credit with Deferred Drawdown Option.

<sup>5</sup> [http://www.iccas.gd/sites/default/files/resources/ICCAS%20Brief\\_EconomicImpact\\_Key%20sectors\\_NF.pdf](http://www.iccas.gd/sites/default/files/resources/ICCAS%20Brief_EconomicImpact_Key%20sectors_NF.pdf)

<sup>6</sup> Climate Change Knowledge Portal: <https://climateknowledgeportal.worldbank.org/country/grenada/climate-data-projections>

<sup>7</sup> Rozenberg, Julie; Browne, Nyanya; De Vries Robbé, Sophie; Kappes, Melanie; Lee, Woori; Prasad, Abha. 2021. 360° Resilience: A Guide to Prepare the Caribbean for a New Generation of Shocks. Country profile for Grenada

<sup>8</sup> [http://www.iccas.gd/sites/default/files/resources/ICCAS%20Brief\\_EconomicImpact\\_Key%20sectors\\_NF.pdf](http://www.iccas.gd/sites/default/files/resources/ICCAS%20Brief_EconomicImpact_Key%20sectors_NF.pdf)

<sup>9</sup> [https://www4.unfccc.int/sites/NAPC/Documents/Parties/Grenada\\_National%20Adaptation%20Plan\\_%202017-2021.pdf](https://www4.unfccc.int/sites/NAPC/Documents/Parties/Grenada_National%20Adaptation%20Plan_%202017-2021.pdf)

### *Management of flooding in Grenville*

The city of Grenville is located in the lowlands on a coastal plain with a mountainous upland area facing the prevailing easterlies of the Atlantic trade winds. The coastal plain lowlands are intersected by estuaries from Grenville River to the South and the Great River to the North beyond Telescope Point. To the South, a smaller unnamed tributary drains from Harford Village to an area directly within the city of Grenville. Significant portions of the city lay within 1.5m of sea level.

Flooding very regularly occurs within the city, due partly to poor maintenance of the stormwater drainage system and continued urbanization upstream of the city, which increases runoff during major rainfall events. Within the city, storm sewer outlets were observed to be at or near “sea level” and have caused reverse flow during high tides. Previous installation of a non-return “flapper valve” at one storm sewer outlet were somewhat successful in preventing backflow, however, maintenance is an issue as sands can resettle due to wave action and prevent the valve from opening.

### *Coastal rehabilitation in Soubise and Marquis*

The Soubise and Marquis Road sections along the Eastern Corridor stretch from about one to three kilometers south of Grenville, where the road is at sea level and follows the beach. Both these beaches have been experiencing erosion and left unchecked, this will further erode the beach and eventually lead to the destruction of the road.

According to Grenada’s 2017-2021 National Adaptation Plan (NAP), Marquis is projected to have the second greatest loss of beaches at 4,076.53 m<sup>2</sup>, after Grand Anse, with a total land loss of 9,282.35m<sup>2</sup> because of sea level rise. Total beach loss at Soubise due to sea level rise is projected to be 3,183.17 m<sup>2</sup>.<sup>10</sup> Additional analysis undertaken for the project (see textbox below) indicates that sea level rise will cause the shoreline at Soubise and Marquis to retreat by approximately half a meter per year between now and 2050.

**Textbox: analysis of coastal erosion at Soubise and Marquis<sup>11</sup>**  
The year of catastrophic failure of the Eastern Main Road at two points in Soubise, and Marquis were analyzed using the Bruun rule, for two alternate climate scenarios of Representative Concentration

<sup>10</sup> [https://www4.unfccc.int/sites/NAPC/Documents/Parties/Grenada\\_National%20Adaptation%20Plan\\_%202017-2021.pdf](https://www4.unfccc.int/sites/NAPC/Documents/Parties/Grenada_National%20Adaptation%20Plan_%202017-2021.pdf)

<sup>11</sup> Project Appraisal Document for the Grenada Resilience Improvement Project

Pathways (RCP) 4.5 and 8.5.<sup>12</sup> The Bruun rule relates shoreline retreat to sea level rise and the nearshore slope, with corrections for overestimations of shoreline retreat rates.<sup>13</sup>

The estimated shoreline retreat rates were used to predict the number of years it will take for coastal retreat to reach the road edge at Marquis and Soubise. The minimum distance from the shoreline to road edge is currently 1.5 meter at Soubise, and 12 meter at Marquis, based on observations made by the World Bank. Road failure at Soubise is expected to occur between the years 2024-2026 and Marquis between the years 2034 to 2054.

Flood risk is also a growing issue along the coastline here: flood extent maps<sup>14</sup> overlaid on OpenStreetMap data indicate that with sea level rise, even during relatively minor coastal flood events, a considerable length of road and a significant number of buildings will be inundated. For instance, in RCP 4.5, a one in five-year event would lead to about 250m of road being inundated by 2030 and 500m by 2100.

## 2 Objective

These Terms of Reference (TOR) seek to obtain two main objectives:

- 1) Engineering consultancy services for the assessment and preliminary design of:
  - a. Flood management measures in Grenville, focusing on reducing risks caused by rainfall flooding combined with compromised drainage due to reverse tide flow, exacerbated by rising sea levels.
  - b. Coastal rehabilitation works aiming to provide coastal protection and flood risk reduction in the city of Grenville and along the road, by increasing rainfall drainage capacity and stabilizing the coastline (e.g., with coastal revetments or other interventions).
- 2) Tender and supervision consultancy services for the execution of the coastal rehabilitation works along the Eastern Main Road at Soubise and Marquis.

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<sup>12</sup> <https://doi.org/10.1061/JWHEAU.0000252>

<sup>13</sup> <https://doi.org/10.1038/s41598-020-68576-0>

<sup>14</sup> <https://documents1.worldbank.org/curated/en/599791635297691305/pdf/360-Resilience-A-Guide-to-Prepare-the-Caribbean-for-a-New-Generation-of-Shocks-Assessing-the-Impact-of-Sea-Level-Rise-and-Resilience-Potential-in-the-Caribbean.pdf>

The Ministry of Infrastructure and Physical Development (MOIPD) of the Government of Grenada (GOG) will have oversight responsibilities on the project.

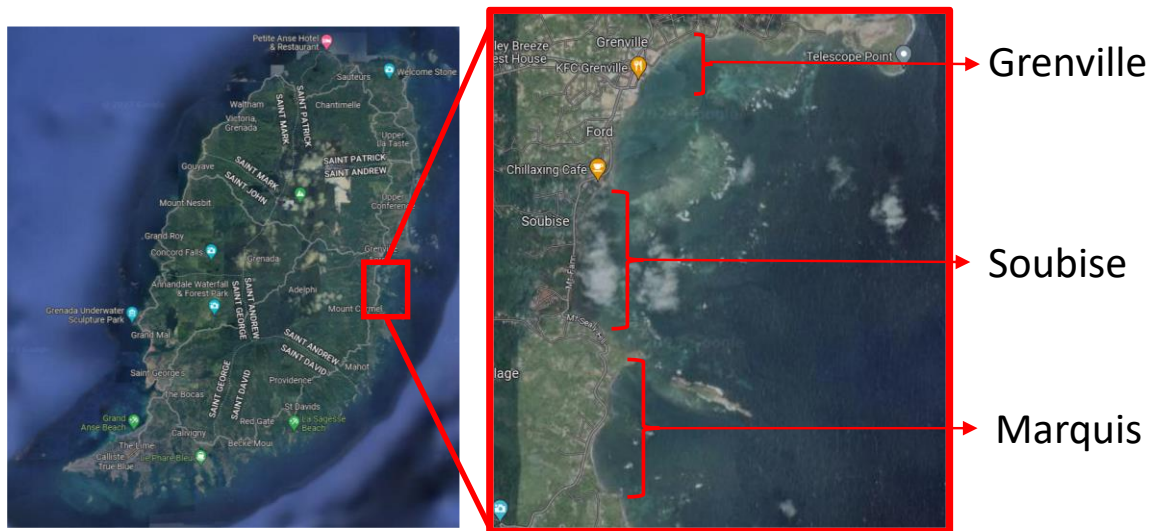


Figure 1: Project location of coastal bays of Soubise and Marquis (Google Earth)

### 3 Scope of work

The purpose of the work is to prepare engineering details, drawings, specifications, quantity and cost estimates acceptable to the Client for subsequent International Competitive Tendering (ICT) and supervise the eventual construction of the works. This work is divided in six activities, which are specified in the following sections:

To complete Objective 1:

1. Feasibility study
2. Environmental and Social Impact Assessment (ESIA) and Stakeholder Consultations
3. Preliminary design

To complete Objective 2:

4. Detailed design
5. Tender
6. Construction supervision

The works further include all activities necessary to accomplish the objectives of the consultancy, whether or not a specific activity is cited in these Terms of Reference (TOR). From this tender

process, two contracts will be awarded: a lump sum contract for the pre-construction phase (numbers 1 through 5 as detailed above) and a time-based contract for the supervision phase (number 6 above).

### *Coordination with on-going projects*

During the period of assignment particularly at the inception phase, the Consultant shall engage and coordinate with ongoing and planned projects in the area to leverage existing data and materials and avoid duplicated efforts, including gaining a thorough understanding of the objectives and scopes of work; hosting technical discussions and obtaining and sharing relevant data and materials under the guidance of the Client.

This includes (among others) the “Living Edge” project of The Nature Conservancy (TNC), located on the shores of Soubise and Telescope. The scope of works here includes creating coastal protections along the shorelines of Telescope and Soubise (e.g. groins, beach fill, revegetation and fishing infrastructure), mangrove plantations and reef restoration inside the bay and the creation of stormwater ponds in the hinterland.

Note: data available through the “Living Edge” project includes bathymetry contours in the vicinity of the shoreline, from MHW line to approximately 30 meters seaward, surveyed and produced by Fred L. Belfon and associates on May 27, 2021. Furthermore, inland topography and bathymetry in the offshore area reflects 1-meter lidar surveyed for The Nature Conservancy in 2017. The bathymetry was patched with a 30-meter digital elevation model produced in April 2017 by NOAA National Centers for Environmental Information. Further data available includes studies of the flooding issues in the city of Grenville, which shall be provided by the Client.

## **3.1 Feasibility Study (objective 1)**

### **3.1.1 Area Characterization and Data Collection**

The Consultant shall carry out a survey of the project area to gain a thorough understanding of it. This includes:

- Researching, collecting and analyzing existing historical and actual topographic, cadastral, land use, on shore and offshore vegetation, hydrological, meteorological, geological (including soil types), aerial imagery, bathymetry and hazard event data and studies to characterize the coastal area under consideration.

- Mapping critical infrastructure, key land uses and economic activities in the project area (disaggregated by sex, age, disability and usage, where possible), including existing coastal protection measures, near and offshore structures, road infrastructure (main and secondary roads), drainage structures, retention ponds, river outfalls and their catchments, houses, dwellings, businesses, fishery infrastructure etc.

### 3.1.2 Rainfall and inundation analysis (Grenville)

The Consultant shall analyse the potential rainfall flooding of the city of Grenville, now and with sea level rise, considering the proposed design lifetime of interventions. This includes:

- Obtaining the necessary data for making rainfall intensity duration frequency curves and modelling run off inside the relevant watersheds that run towards and through the city. This will require LIDAR data for modelling watersheds, geological composition of the soil, daily and extreme sea water levels, now and with sea level rise and identifying the existing rainwater drainage system and outfalls.
- Setting up and applying modelling tools to predict rainfall run off through the watersheds that run in and around the city of Grenville, considering different climate scenarios and proposed mitigation measures during preliminary design.
- Validating the modelling results with historical, actual and (as needed) anecdotal evidence.

### 3.1.3 Coastal Erosion and Hydraulic Loads Assessment (Soubise and Marquis)

The Consultant shall analyse the ongoing coastal erosion processes along along the critical sections of the Eastern Main Road in both Soubise and Marquis to gain a full understanding of areas at risk, now and with sea level rise considering the proposed design lifetime of interventions. This includes:

- Analyzing and visualizing the magnitude and cause of historical erosion rates along both bays through the use of the obtained data under activity 3.1.1, including historical satellite imagery, anecdotal evidence or other.
- Preparing the necessary data for modelling current erosion rates along the bay, including assessing the bathymetry of the bay; daily and extreme water levels, now and with sea level rise; wave action and storm impacts and river outfalls and sediment deposition (if any). Both historical data and future scenarios will be required.

- Setting up and applying modelling tools to predict current and future erosion rates in the bays for different climate scenarios and proposed mitigation measures.
- For the purpose of the design coastal rehabilitation works, carrying out statistical analysis of extreme wave action and storm surge water levels to ultimately define protection levels of the rehabilitation works.

### 3.2 Environmental and Social Impact Assessment (ESIA) and Stakeholder Consultations (Objective 1)

In accordance with the World Bank's [Environmental and Social Framework \(ESF\)](#), the Consultant shall carry out an ESIA of the proposed works involving broad stakeholder consultation as per item below, disaggregated by sex, age, and disability. Detailed guidance on the ESIA is presented in Annex 1 to these TOR.

The Environmental and Social Risks Classification (ESRC) for this Project is substantial mainly due to the likelihood of adverse impacts of investments close to the coastal and aquatic ecosystems. Coastal protection works will occur along existing roads and civils works for the project activities may involve clearing of vegetation, erosion control, drainage and slope stabilization works, and will involve the use of heavy machinery. The key environmental risks associated with the proposed activities are related to waste management; air and noise pollution; community health and safety; occupational health and safety; and in particular, the civil works can lead to water pollution, erosion and sedimentation affecting the aquatic ecosystems. Project activities can have significant impacts if not avoided, managed and mitigated adequately.

#### *Social and Gender Impacts*

The Consultant shall analyse the social and gender impacts, including:

- Producing a sex-disaggregated demographic profile of communities along the corridor including socio-economic, poverty and vulnerability status, individual and community characteristics including disability status, age, employment, unemployment, and underemployment status, single-heads of household m/f, (household characteristics), crime, gender based violence, educational attainment, housing and health issues;
- Identification of key employers and livelihood activities in the communities with clear identification of opportunities to reduce poverty and promote equitable, inclusive employment



through the implementation and operational phases of the project and attention paid to identifying workers' health and safety risks with recommendations to maximize benefits derived from livelihood activities, disaggregated by sex, age and disability;

- Clear identification of any potential adverse social impacts of the project (both main route and by-pass routes), disaggregated by sex, age, and disability;
- Identification of risks and vulnerabilities during implementation and operation in the following areas including: housing; economic activities; employment opportunities; livelihoods; labour force participation; shelter management; natural hazards; security and violence (including gender-based); education; health; transportation; traffic impacts; cultural and archaeological heritage; wildlife habitat; and water, sanitation, and drainage;
- Investigating gender-specific risks and vulnerabilities and gender specific coping mechanisms, including those linked to projected climate change, and project employment or indirect project-related livelihood opportunities;
- Identification and analysis of both qualitative and quantitative socio-economic benefits; and prioritize community risks and vulnerabilities and community priorities for potential investments. Include women and men equally in public consultations as well as stakeholders representing the various groups including youth, elderly, children and persons with disabilities.

### Stakeholder Consultations

The Consultant shall carry out stakeholder consultations in accordance with the World Bank's Environmental and Social Standard 10 – Stakeholder Engagement and Information Disclosure, to guarantee inclusiveness in order to address the needs of different community members in Grenville, Soubise and Marquis, amongst others creating and/or protecting fishing communities in the areas.

The consultations This includes:

- Identifying key stakeholders and describing the role/influence they may have on the project civil works
- Gathering stakeholder's perspectives, concerns, perceived current needs and priorities, as well as their input to and feedback on proposed designs and implementation, disaggregated by sex, age, and disability.
- Conducting consultative and informative meetings with ministerial departments and agencies including those responsible for infrastructure, transport, tourism and disaster risk management,

and any other relevant parties, to present the results of the Consultancy and discuss any ongoing issues/ questions related to the works. This includes meetings as specified in Annex 1, with at least one meeting to close of each design stage (i.e. feasibility study, preliminary design, detailed design and tender) and regular meetings during the construction stage (e.g., every 6 months as necessary).

- Conducting consultative and participatory stakeholder meetings periodically at appropriate points of the consultancy. This includes meetings as specified in Annex 1, and at least one meeting to close of each design stage (i.e. feasibility study, preliminary design, detailed design and tender) and regular meetings during the construction stage (e.g., every 6 months). These are to take place together with the Client and all relevant stakeholders, including community leaders, community groups including women and youth groups and residents.
- Conducting separate meetings for women, girls, boys and men in the communities, as necessary, and their representatives at the community and national level.

#### *Environmental and Social Management Plan*

The Consultant shall prepare an Environmental and Social Management Plan (ESMP) according the World Bank's ESF, including recommended mitigation measures, analysis of alternatives, design management, monitoring and recommended measures to facilitate social benefits, a stakeholder engagement plan and grievance mechanisms responsive to vulnerable groups' needs. Annex 1 provides further details.

### **3.3 Preliminary Design (Objective 1)**

The Consultant shall prepare a program of requirements and preliminary designs for the works in Grenville and Soubise and Marquis and advise the Client on a preferred solution. This includes:

- Drafting a set of requirements for the design of the works, in close consultation with the Client and relevant stakeholders, taking into account risks as identified in the ESIA. The Client must give its approval to the final requirements. The requirements should at least consider:
  - Robustness during the design lifetime of the works and limited maintenance, as regular maintenance is often a challenge.
  - Minimum return period water levels and waves for the structural design of the coastal rehabilitation works, taking into account future extreme weather events and climate change scenarios.

- Minimum return period rainfall events for the design of Grenville's drainage system, accounting for future extreme weather events and climate change scenarios.
- Adaptiveness of the solutions for changing scenarios of climate change.
- Creating co-benefits of the works for the livelihoods of local communities, such as creating recreational areas and/or infrastructure for fisheries (boat ramps, boat storage for fishermen) or other.
- Preparing at least three potential preliminary designs, their (high-level) costs and their (high-level) effectiveness in terms of reducing flooding in Grenville and preventing further erosion of the coast in Soubise and Marquis. The preparation of designs should consider both hard and soft measures, or a combination of both, and explore their advantages and disadvantages. The consultant will prioritize the identified preliminary designs based on an economic analysis of each technically feasible option, showing the costs and benefits, or a cost-effectiveness analysis if the measures are expected to deliver the same benefits. The comparison of preliminary designs shall also identify benefits not evaluated in the economic analysis, but which are relevant for decision making, such as impacts on the eco-system, community livelihoods etc. The analysis shall further explore opportunities and challenges provided by climate change.
- Advising the Client on a preferred solution based on the analyses carried out. The Client shall ultimately decide which design is preferred.
- Refining the ESIA and ESMP based on the preliminary and preferred designs.
- Organizing and attending all meetings necessary to discuss the designs and provide explanations for the purpose of furthering approvals.

### 3.4 Detailed Design (Objective 2)

The Consultant shall prepare a detailed design for the preferred preliminary design of the coastal rehabilitation works and the required bidding documents for the tender. This includes:

- Preparing detailed designs for the preferred solution and submitting the plans and specifications, for approval to the Client and the appropriate authorities, incorporating any recommendations to obtain all necessary permits for the works.
- Preparing construction specifications for all the works shown on the drawings for which the Consultant is responsible. The specifications shall be clear and concise with a statement setting forth the general scope of work, followed by a description of the various classes of work, under

appropriate sections and headings. The quality control requirements for the contractor will be described in detail, including identifying standards or codes that are to apply.

- Preparing proposed construction schedules, both overall and by section/ scope of work.
- Preparing quantities and cost estimates for the works using the Civil Engineering Standard Method of Measurement (CESMM) or other approved method. The estimates should indicate the anticipated division between local and foreign costs, and identify the incremental costs associated with climate adaptation;
- Undertaking market analysis and recommend the procurement approach(es) to execute the works.
- Advising the Client on the type of contracts to be applied for the work.
- Preparing pre-qualification and bidding documents in accordance with the World Bank's standard bidding documents; this includes the E&S mitigation measures described in the ESMP.
- Refining the ESIA and ESMP based on the detailed design.
- Organizing and attending all meetings necessary to discuss the designs and provide explanations for the purpose of furthering approvals.

Selection methods will be carried out following international, competitive market approaches compliant to World Bank's procurement processes. However, it is envisaged that a large part of the works can be carried out by local contractors under the direct supervision of the Consultant. This could be a preferred solution given the expected magnitude of the coastal rehabilitation works compared to the resources available to achieve high value for money.

### 3.5 Tender (Objective 2)

The Consultant shall manage the tendering process to obtain a contractor for the rehabilitation works, including:

- Conducting pre-bid site meetings and site visits with the Client and prospective bidders.
- Preparing of minutes of pre-bid meetings and written responses to bidders' questions.
- Providing technical advice to the Client during the bidding process.
- Preparing a bid evaluation report for the Client's nominated Evaluation Committee, in accordance with the World Bank's Procurement Regulations.
- Assisting with negotiations between the Client and the prospective contractor, if applicable.
- Preparing the contract document which incorporates the measures detailed in the ESMP including costs

### 3.6 Construction supervision (Objective 2)

The Consultant shall carry out the necessary supervision during the construction of the works as designed in the design phase. This includes:

- Advising the contractor on the interpretation of the engineering drawings and technical specifications and issuing supplementary details and instructions during the construction period, as required.
- Reviewing the contractor's work plan including construction schedule and commenting on the procedures, methods, and sequence of the work. Advising on alternative methods, equipment and materials proposed by the contractor.
- Providing technical advice to the Client and recommending appropriate actions if needed during construction phase on planning and scheduling, budgeting, estimating, and cost and quality control.
- Ensuring that the contractor is carrying out the work in accordance with the contract documents and communicate with the contractor and the Client regarding deficiencies in the work and other matters of direct interest or concern.
- Advising the Client on the validity of charges for additions or deletions to the contract and on the issue of change orders.
- Processing contractor's progress and final requisitions and issuing progress certificates for the Client's acceptance.
- Maintaining records related to the contracts.
- Arranging and recording monthly site meetings.
- Carrying out final inspection at the handover of the works as part of the acceptance program of the client.
- Collecting field information required to prepare the draft "as-built" drawings.
- Preparing a Works Completion Report at handover, to include a maintenance manual and the final "as-built" drawings of the works.
- Providing full-time resident staff services during construction.

Specifically, as part of its obligations for the ESIA, the Consultant must ensure that the Contractor delivers its ES obligations under its contract. This includes, but is not limited to the following:

- Reviewing the Contractor’s Environment and Social Management Plan (C-ESMP), including all updates and revisions at frequencies specified in the Contractor’s contract (normally not less than once every 6 months);
- Reviewing all other applicable contractor’s documents related to ES aspects including the health and safety manual, security management plan and SEA prevention and response action plan;
- Reviewing and consider the ES risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits and other relevant project requirements;
- Undertaking, as required, audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities under its contract, to verify the Contractor’s compliance with ES requirements (including relevant requirements on SEA/SH);
- Undertaking audits and inspections of Contractor’s accident logs, community liaison records, monitoring findings and other ES related documentation, as necessary, to confirm the Contractor’s compliance with ES requirements (including relevant requirements on SEA/SH);
- Determining remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor’s ES obligations;
- Ensuring appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ES obligations;
- Ensuring that the Contractor’s actual reporting (content and timeliness) is in accordance with the Contractor’s contractual obligations;
- Reviewing and critiquing, in a timely manner, the Contractor’s ES documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
- Carrying-out the following activities consistent with the Works contract to be supervised, including but not limited to the following:
  - a. Supporting the Works employer to organize an SEA/SH conference, ensure appropriate representation in the conference and follow-up on any agreed actions by the attendees;
  - b. Monitoring contractor’s compliance with its SEA/SH Prevention and Response Obligations in the Works contract, and take appropriate contractual actions if non-compliance is identified, including upon identification of potential non-compliance by a dispute board;

- c. Ensuring that any allegation of SEA and/or SH that are received by the Consultant are documented , maintaining appropriate confidentiality, and promptly submitted to the Employer and the Contractor;
  - d. Prior to its engagement for the Works, verifying that, any proposed subcontractor not named in the contract, is qualified in accordance with the provisions of the SEA/ SH performance declaration for sub-contractors;
  - e. Providing appropriate support and relevant documents that a dispute board may need in reviewing SEA/SH contractual compliance;
- Undertaking liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ES issues;
  - Establishing and maintaining a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of SEA and/or SH.

Note: as the construction supervision contract will be a time-based contract, an independent auditor will be assigned to review and approve each payment request during this phase.

## 4 Implementation arrangements

### 4.1 Client's Input and Resources

MOIPD will appoint a Project Coordinator (PC). PC will facilitate the work of the Consultants and make available all studies, reports, and data relevant to the completion of the exercise, and will act as the liaison between the consultants and GOG officials and stakeholders and as quality assurer. PC will provide quality assurance of the consultant's work which includes quality reviews and due diligence, where required, and recommendations for adjustment or correction if deemed necessary. PC will further give site possession and facilitate any site visits as necessary.

#### 4.1.1 Quality Plan

The Consultant will facilitate abovementioned quality assurance and allow for sufficient time in their planning to permit reviews. For this purpose, the Consultant will prepare a comprehensive quality plan for the consultancy for review and comment by PC, including description of reporting and progress monitoring with Client and site visits. The quality plan will include, but not be limited to, quality control details on document preparation ensuring an effective and traceable system is in place that requires all critical components to go through an internal quality review and sign off process prior

to release and that this control documentation is made available upon request. It is to include sufficient reasonable time for PC to also review where the PC deems necessary.

## 4.2 Qualifications and experience Consultant

The Consultant should be multidisciplinary and must meet the criteria as detailed in the REOI. This includes the following:

- The Consultant should have proven experience in analyzing and modelling coastal risk mapping in the Caribbean region, considering extreme events such as hurricanes.
- The Consultant must have demonstrated experience with modelling coastal erosion under climate change scenarios.
- The Consultant should have demonstrated experience with the design and supervision of coastal rehabilitation works in the Caribbean region and/or with comparable Small Island Developing States under threat of similar extreme weather events (tropical cyclones).
- The Consultant should have demonstrated experience carrying out ESIA and setting up ESMP's in accordance with World Bank procedures.
- The Consultant should not have any pending litigation and non-performing contracts during last 5 years.
- The Consultant should have excellent written and oral communication skills in English.

It is the Consultant's responsibility to ensure that the team has an appropriate mix of key and non-key experts required to satisfy the full requirements of the TOR. The Consultant's team should at least include the following key experts:

- Key Expert 1: Team Leader - with minimum 10 years' experience of carrying out feasibility studies, detailed designs, and procurement documents for coastal works and construction supervision. The candidate should have a minimum of a bachelor's degree, in project management of engineering projects. The Team Leader must have satisfactorily performed the function of Team Leader on at least 2 similar projects within the past 5 years.
- Key Expert 2: Coastal engineer - with minimum 8 years' experience of carrying out surveys of coastal erosion processes for different climate scenarios, statistical analysis of hydraulic loads on structures, and risk-based design of coastal rehabilitation works. The candidate should have a minimum of a master's degree in civil engineering (or similar), along with professional qualifications.



- Key Expert 3: Rainfall and stormwater drainage modelling Specialist - with minimum 8 years' experience of carrying out surveys of rainfall and stormwater drainage for different climate scenarios and making designs for managing flooding in coastal cities. The candidate should have a minimum of a master's degree in civil engineering (or similar), along with professional qualifications.
- Key Expert 4: Environmental and Climate Risk Assessment Specialist – with minimum 8 years' work experience in carrying out environmental impact assessments and the development of Environmental Management Plans for coastal projects, and in the area of climate change impacts and adaptation, including familiarity with analyzing climate data. The candidate should have a master's degree in Environmental Sciences, Environmental Engineering, Environmental Management or related discipline, and experience in disaster risk mitigation;
- Key Expert 5: Social and Gender Impact Specialist - with minimum 7 years' experience of carrying out social and gender impact assessments of transport infrastructure projects. The Social and Gender Impact Specialist should have a Master's Degree in Social Sciences, Gender Studies or related discipline, experience in gender analysis, experience utilizing differential participatory approaches to perform social and gender analysis including the establishment of a project baseline indicator framework, and experience in preparing associated social impact assessments.
- Key Expert 6: Resident Engineer – with minimum ten years' experience in providing construction supervision services. The candidate would have a minimum of a Bachelor's degree in civil engineering (or similar), along with professional qualifications;

It is further up to the discretion of the consultant team to determine the composition of their team beyond the points established above.

### 4.3 Reporting arrangements

Reports shall be submitted in PDF as complete documents to GOG/MOIPD and the World Bank. Reports and data shall also be provided electronically in their original form (e.g. Microsoft Word, Excel, AutoCAD, etc.) to GOG/MOIPD.

#### 4.3.1 Feasibility study (Objective 1)

<b>Name/Type of Report</b>	<b>Content</b>	<b>Time of Submission</b>
Inception Report	<p>The Consultant shall prepare a report which shall include (without being limited to) the following:</p> <ul style="list-style-type: none"> <li>• Consultant’s updated plan of approach, including its organization, mobilization, work schedule and methodology</li> <li>• Consultant’s Quality Plan, as detailed in section 4.1.1</li> <li>• Consultant’s detailed work methodology and approach to fulfil the assignment requirements as per the ESIA detailed in these TOR</li> <li>• Findings of initial coordination with ongoing and planned projects in the project area, including its review of existing literature and data, materials and technical and stakeholder discussions.</li> <li>• Potential impacts of ongoing projects on this TOR’s scope and how the interfaces with such projects will be managed.</li> <li>• Design criteria to be employed.</li> </ul>	Within 1 month of contract signing
Area Characterization and Data Collection Report	The Area Characterization and Data Collection Report as detailed in section 3.1.1. The report can be submitted in stages as sub-reports to fast-track comments and reviews.	Within 3 months of contract signature
Rainfall and inundation Analysis	The Rainfall and inundation analysis as detailed in section 3.1.2. The report can be submitted in stages as sub-reports to fast-track comments and reviews.	Within 3 months of contract signature
Coastal Erosion and Hydraulic Loads Analysis	The Coastal Erosion and Hydraulic Loads Analysis as detailed in section 3.1.. The report can be submitted in stages as sub-reports to fast-track comments and reviews.	Within 3 months of contract signature

Draft ESIA and ESMP	The Draft ESIA according to section 3.2 and the Draft ESMP to cover the construction and operational phases.	Within 3 months of contract signature
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#### 4.3.2 Preliminary design (Objective 1)

<b>Name/Type of Report</b>	<b>Content</b>	<b>Time of Submission</b>
Preliminary Design Report	The Preliminary Design report presenting the preliminary design alternatives, including their (high-level) costs and their (high-level) effectiveness. The report includes the Consultant's advice on a preferred design, all in accordance to what was stated in section 3.2. The report shall demonstrate how the recommendations of the Draft ESIA have been integrated into the preliminary designs. The report can be submitted in stages as sub-reports to fast-track comments and reviews.	Within 6 months of contract signature
Final ESIA and Final ESMP	The Final ESIA according to section 3.2 and the Final ESMP to cover the construction and operational phases. This submission should incorporate all of the comments received from the Draft ESIA and ESMP.	Within 6 months of contract signature

#### 4.3.3 Detailed design (Objective 2)

<b>Name/Type of Report</b>	<b>Content</b>	<b>Time of Submission</b>
Detailed Design Report and Bid Documents	The Consultant shall present the Final Design Report and Tender Documents, including (without being limited to) the following, as per section 3.3: <ul style="list-style-type: none"> <li>• Detailed designs, cost estimates and implementation schedule</li> <li>• Bidding Documents</li> <li>• All topographic survey data including coordinates of permanent control points tied into the national survey grid</li> </ul>	Within 9 months of contract signature

	<ul style="list-style-type: none"> <li>• Environmental Impacts Assessment and mitigation measures</li> </ul> <p>The report can be submitted in stages as sub-reports to fast-track comments and reviews.</p>	
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#### 4.3.4 Tender (Objective 2)

<b>Name/Type of Report</b>	<b>Content</b>	<b>Time of Submission</b>
Prequalification Documents	Within 60 days of the start of the assignment, relevant documents for advertising and prequalification of contractors for the World Bank shall be presented.	Within 2 months of the start of the assignment.
Tender Evaluation Report	The consultant will prepare a detailed Tender Evaluation Report on the tenders received, making recommendations for a selection of a works contractor.	Within 14 days after opening of tenders by the Public Procurement Board.

#### 4.3.5 Construction supervision (Objective 2)

<b>Name/Type of Report</b>	<b>Content</b>	<b>Time of Submission</b>
Contract Management Plan	The Consultant shall prepare a contract management plan that details all processes needed to manage the contract with the contractor during the works. This includes, but is not limited to, progress monitoring procedures, construction and contract meetings, quality and risk management, financial management and any other activity needed for effective contract management.	Prior to start of construction.
Construction Progress Reports	The Construction Progress Reports is a Monthly Progress Report in the approved form, briefly and concisely describing all construction activities and progress for the previous month, and report on environmental monitoring during construction and	No later than 2 weeks after the end of each month of the

	<p>contractors compliance with the ESMP. Problems encountered, and/or problems anticipated, shall be clearly stated, together with steps taken or recommendations for their correction/mitigation. These reports shall also list the Contractors' equipment and work force. It will also indicate the work to be performed during the coming month, expenditure record, and current estimates of final cost and completion date</p>	<p>implementation period.</p>
<p>Certificate of Practical Completion</p>	<p>The Certificate of Practical Completion: At the end of the construction period provide a Certificate of Practical Completion which certifies the practical completion of all the works described in the Contract Documents. This certificate should be signed by the members of an inspection team consisting of representatives of GOG/MOIPD, the Consultant and the Contractor.</p>	<p>At the end of the construction period</p>
<p>Works Completion Report</p>	<p>The Works Completion Report provides MOIPD with a Works Completion Report. It shall include electronic and full-size sets of (A1 size) 'as-built' reproducible plans on stable-base material showing final details of the Works as completed, together with all data, records, field books, warranties, properly indexed and catalogued. It shall include the monitoring programme to be implemented during the defects liability period, including an updated ESMP for the operational phase of the works.</p>	<p>Within one month of the issue of the Certificate of Practical Completion</p>
<p>Contract Completion Report</p>	<p>The Contract Completion Report, summarizing the construction activities, contract changes, claims, or disputes or any other substantive matters having an effect on the amount, cost and progress of the work. Also include a Maintenance Plans for all Civil Works constructed and Equipment delivered and installed as well as the final ESMP to cover the operational phase.</p>	<p>Within one month of the issuance of the Completion Certificate</p>

Additionally, the Consultant will provide relevant project and progress performance data to the Client, including physical and financial progress and E&S monitoring, as requested and in line with the procedures established in the Project Operations Manual (POM).

## 5 Duration of the Project

The duration of the design activities are estimated to be 12 months from the signature of the Contract and the duration of the construction supervision phase is 18 to 24 months, inclusive of a 6 month procurement period.

## Annex 1: Detailed ESIA and ESMP Scope

### Needs and Justification for Environmental and Social Impact Assessment

The aim of the ESIA study is to assess the environmental and social impacts associated with coastal rehabilitation works along Grenada's Eastern Corridor, specifically in the coastal areas of Grenville, Soubise and Marquis. The ESIA will propose practical and effective mitigation measures to prevent or reduce any potential negative implications of the construction and operation of the planned works. In addition, an environmental and social management plan will be developed to ensure best environmental and social performance. In principle, for each of the planned project areas, the ESIA will be based on the following:

- Environmental and social impacts associated with the project are assessed and examined at the earliest planning stage possible.
- Environmental and social impacts to be investigated and examined include factors that impact public health and safety as well as the natural environment, such as: air, quality water, soil, waste, accidents, ecosystems, and biota. Social concerns include: involuntary resettlement of the population, cultural heritage, landscape, gender, communicable diseases, etc. Traffic impacts should also be assessed.
- In addition to the direct and immediate impacts, derivative, secondary and cumulative impacts will also be examined and investigated to a reasonable extent.
- Alternative proposals and/or minimization measures to prevent or reduce adverse impacts are examined to choose a better project option in terms of environmental and social considerations. In examination of measures, priority is to be given to the prevention of environmental impact, and when this is not possible, minimization and reduction of impact must be considered next. The findings of this examination should be incorporated in the plan.
- Examination of the environmental and social considerations will include analysis of environmental costs and benefits in quantitative terms, as much as possible, while taking into consideration economic, financial, institutional, social and technical aspects.
- Appropriate follow-up environmental and social management and monitoring plans will be prepared as part of the ESIA. Estimated costs of implementing such plans and financial resources to cover such costs will be determined.

The ESIA will ensure that the project components will be in compliance with relevant national, laws and ordinances as well as the World Bank ESF.

### Tasks

The following tasks are expected to take place in order to prepare the ESIA for the proposed project:

- Conduct meetings with relevant government agencies to understand and familiarize with preliminary studies, plans, and designs and other activities related to the project;
- Conduct visits, to all sites for the purpose of site reconnaissance and establishing updated baseline and collecting data from local concerned authorities;
- Review all relevant laws and regulations relevant to the planned activities;
- Describe the environmental and social settings for the areas where planned activities will take place;
- Assess the potential positive and negative environmental and social impacts associated with the planned activities;
- Prepare a comprehensive Environmental and Social Management Plan (ESMP)
- Perform effective and efficient public consultation process at two stages: during scoping phase and once the Draft ESIA is prepared. A proper communication plan should be prepared and specific actions to be taken to ensure good representation and good attendance of affected communities and stakeholders in the planned Public consultation events

### Approach

The Consultancy will try to the extent possible to identify and compile the readily available technical data and information that would allow preparing the Environmental and Social Impact Assessment with the least uncertainties. Appropriate and justified engineering/scientifically based assumptions should be made to cover any information or data gaps.

In preparing the Environmental and Social Impact Assessment the Consultant will ensure compliance with:

- Current environmental and social regulations and standards in Grenada
- The World Bank ESF and other World Bank procedures and guidelines on conducting environmental impact assessment.
- The World Bank Group's Environmental, Health and Safety Guidelines (EHSGs)



## Environmental and Social Impact Assessment Methodology

The Consultant is expected to prepare and submit their own detailed work methodology and approach to fulfil the assignment requirements given the risks covered under this TOR as part of the Inception Report.

The following will be the minimum requirements of the proposed methodology

### **(1) Gain an understanding and study project objectives and familiarize with project locations**

- Obtain necessary documents including maps, site plans, photographs, diagrams, and any visual and graphic aids.
- Familiarize with project, including project purpose; location; components and phases; workforce and equipment; associated activities; schedule; and cost.
- Gather information about the various stages of the project execution (pre-, during, and post).
- Detail the elements of the project, highlighting the areas to be reserved for activities and determining the surrounding areas in terms of residential areas, industrial areas, protected areas, historical sites, etc.

### **(2) Review relevant legislative and regulatory considerations**

- Review national and international legislations and regulations relevant to the project, including also required governmental permits and authorizations required.

### **(3) Conduct the First Public Consultation (Scoping Session)**

A community consultation will be initiated as early as possible. The Consultant will consult with the stakeholders twice. The first public consultation will be conducted after the identification of relevant impacts in order to discuss and agree on the scope of the ESIA.

The Consultant in coordination with relevant authorities will arrange and conduct scoping sessions which should be attended by the relevant authorities and stakeholders. The aim of these scoping sessions is to:

- Explain and reach a common understanding of the potential impacts and sensitivities of the surrounding environment, and similarities and differences between the present project and other similar projects implemented in Grenada.

- Identify, early in the process, any environmental and social aspects, which the stakeholders raise, which may not have been included in the scope of work
- Provide a basis for reviewing the issues that will be considered in the ESIA

#### **(4) Analysis of Alternatives**

The environmental and social assessment should also include on analysis of alternatives that would examine different alternatives with the objectives of minimizing environmental, health, safety and social impacts of the project. The analysis would focus on the following:

- Summarizing and referencing the alternatives in a manner consistent with national and international guidance
- Analyzing the benefits and impacts expected from the project and other technical and economic alternatives including the "Do-Nothing" alternative
- Evaluating the social and environmental analysis of each alternative
- Proposing preferred alternatives by comparing alternatives, and justifying the rationale for preferring the proposed alternatives

#### **(5) Data Collection and Review**

General information about the project site and surrounding areas will be provided in map form, including:

- project area maps at appropriate scales to illustrate general siting of project related development sites and surrounding areas likely to be environmentally and socially affected
- topographic contours, as available, as well as locations of roads, communities, and other relevant sites within the project location.
- maps to illustrate existing land use, including industrial, residential, commercial and institutional development, agricultural as relevant to the project activities, etc

Specific data will be compiled on the characteristics of the project area in terms of its sensitivity to adverse and beneficial environmental impacts. Historical and secondary source data will be collected, when possible, and validated with field observations. The Consultant will conduct the necessary baseline surveys to collect data on the following points:

- Physical Environmental Data:
  - Geology (e.g. stratigraphy and structure, seismic history if any of the areas)

- Topography
- Climate
- Ambient air quality
- Water quality
- Ambient noise (note contribution from major sources if any)
- Significant sources of pollution in the area and prospect for their mitigation
- Existing traffic patterns, users of the beach/coastal area and waters etc.
- Biological Environmental Data
  - Flora and fauna, including rare or endangered species in the project area
  - Aquatic ecosystem including benthic species and habitat
  - Sensitive habitats both terrestrial and aquatic
- Socio-Economic Data
  - Culturally Valuable Sites
  - Geography, administrative districts, etc.
  - Basic Demographic characteristics (population, age structure, birth rate, death rate, rate of natural increase, handicapped, etc.)
  - Living Conditions (household size and density, access to electricity, source of potable water, sanitation, etc)
  - Human Development Profile (education, work status, economic wellbeing, etc.)

Subsequent to gathering of data, the environmental and social issues will be assessed in terms of the environmental and social risks and benefits associated with the project.

### **(6)Analysis - Environmental and Social Assessment**

The Consultant will assess the potential impacts of the project during project activities. The Consultant will perform the below tasks to identify and concisely present the significant environmental and social impacts:

- Explain and justify the methods used to predict potential impacts of the project on the environment, and on interactions among the project components
- Nominate and classify issues that are potentially important in the assessment of impacts and for decision-making in relation to the project
- Identify potential project impacts by conducting an impact analysis on the physical, biological, land-use and socio-economic environments, and the interactions among them including visual

impacts; loss of beach area and access; erosion and sedimentation; impacts to aquatic ecosystem and habitats, benthic species and birds; tourism, community health and safety, any livelihood impacts, general public safety issues (employment opportunities; livelihoods; labour force participation) etc .

- Evaluate the impact significance of the project components and activities on the environment and society
- Establish that criteria on which the assessment of the impacts will be based on
- Develop a matrix as a means to present assessment of the impacts graphically, and specify and discuss positive or negative impacts, direct or indirect impacts, reversible or irreversible impacts, short-term and long-term, and cumulative avoidable impacts on the environment and society

#### **(7) Develop an Environmental and Social Management Plan**

After the evaluation of impacts, the Consultant will establish strategies to reduce or eliminate potentially negative outcomes. This includes avoiding negative impacts where possible, and employing mitigation measures for those that are unavoidable. Issues related to the project location, equipment, and surveys conducted previously will be categorized according to how critical the impact is. These strategies will be formulated in an Environmental and Social Management Plan (ESMP) This process entails:

- Detailing the management measures, roles, and responsibilities for implementation, supervision, and cost
- Indicating parameters to be monitored, their location, frequency of monitoring, roles and responsibilities and cost
- Assessing the ability of the implementing agencies to implement the proposed environmental management and monitoring plan
- Developing the institutional arrangement and capacity building programs necessary to ensure successful implementation

#### **(8) Conduct the Second Public Consultation Meetings to Involve the Stakeholders of the Project in the ESIA**

- Select appropriate venue for public consultation meeting.
- Manage logistics of the meetings, including participants and thorough documentation of the event.
- In addition to making a public announcement, invite stakeholders of the project, and potential interested

- Invited stakeholders should have balanced representation of women, NGOs, local community groups, youth and other vulnerable groups (e.g. handicapped, elders....etc.)
- Provide attendees with a summary of the project, and briefing on the impacts and analyses developed in non-technical local language.
- Document stakeholders' concerns and issues raised. The Consultant will document all the consultations including the issues raised and actions planned/taken and justifications for no action wherever relevant.
- Assess the public's perception to the proposed project.
- Document the means by which the public engagement was used in the identification of the issues, and how it affected the project.

The final version of the ESIA report will incorporate the comments raised in the second public consultation meeting. The final report will discuss how the public concerns that are raised during different stages of consultations have been considered and addressed in the project.

## Proposed Annotated Table of Contents of ESIA

### **Executive Summary – Non-Technical Summary**

An executive summary will be prepared to be used as a stand-alone document in a manner that can be accessible to non-technical readers.

### **Chapter 1 – Introduction and Project Description**

The section will include the following:

- Statement for the project need and objectives it is intended to meet
- A description of the project including technical design pre-, during, and post project activities using maps at appropriate scale when necessary.
- Summary of the general scope of ESIA

### **Chapter 2 – Policy, Legal and Administrative Framework**

This section will provide an overview of the pertinent regulations and existing codes of practice and standards. The section will include the following:

- Relevant national environmental policy, legal and administrative issues
- Regional development planning
- Permits required to commence project activities.
- International and national environmental standards and guidelines

### **Chapter 3 – Description of the Environment and Social Context**

This section will assemble and evaluate data on the relevant environmental and social characteristics of the project areas. It will include information on any changes anticipated before the project commences, including **physical**, **biological** and **socio-cultural** environments. The presented data will be relevant and commensurate with the project. Information of the existing physical, biological, land-use and socio-economic environment will be included.

### **Chapter 4 – Environmental and Social Impact Assessment**

A description of the positive and negative environmental impacts will be mentioned in this section during project activities. This section will also discuss the positive and negative social impacts that the project might have on communities in general and on various sub-groups (women and men, the poor, youth) in particular.

## **Chapter 5 – Analysis of Alternatives**

This section will describe alternatives that were examined in the course of developing the proposed project and identify other alternatives, which would achieve the same objectives. The concept of alternatives extends to siting, design, technology selection, construction techniques and phasing, and operation and maintenance procedures. It will compare alternatives in terms of potential environmental and social impacts and suitability under local conditions.

## **Chapter 6 – Mitigation of Environmental and Social Impacts**

Specific details of mitigation measures during design, construction and operation phases will be proposed and delineated here.

Appendices as needed

## Proposed Annotated Table of Contents of ESMP

Based on the impacts identified in the ESIA, the ESMP should describe the mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social risks and impacts. The ESMP should also include the measures and actions needed to implement these measures.

The ESMP should encompass the following:

### 1. Objectives of the ESMP

### 2. Project Description

This summarizes the project and provides maps map of sufficient detail, showing the project site and the area that may be affected by the project's direct and indirect impacts.

### 3. Mitigation Measures

This should identify and summarize all anticipated adverse environmental and social impacts and describe with technical details each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate. It should also estimate any potential environmental and social impacts of these measures.

### 4. Public Consultation and Stakeholder Engagement

This section should provide:

- A summary of consultations undertaken during subproject preparation
- A description of how the stakeholder engagement will take place during subproject implementation
- How the GRM is implemented in the local context i.e. how the Project GRM will be promoted

### 5. Monitoring Plan

This should identify the monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the ESIA and the mitigation measures described. This is meant to provide (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

### 6. Capacity Development and Trainings

This should provide a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).

### 7. Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP should include (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent



cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

8. Integration of ESMP with Project

The individual mitigation and monitoring measures and actions and the institutional responsibilities relating to each, and the costs of so should be integrated into the project’s overall planning, design, budget, and implementation.

9. Legal requirements and bidding/contract documents

The ESMP should be incorporated in all legal documents to enforce compliance by all contractors participating in the project. The ESMP should be summarized and incorporated in the bidding and contract documents.

**Annexes**

Any site-specific plan required.

The ESMP will be presented in a tabular format as follows:

A. Mitigation

Project Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility of mitigation	Responsibility of direct supervision	Estimated Cost
Construction Phase					
Operational Phase					

B. Monitoring

Project Activity	Impact	Monitoring indicators	Responsibility	Frequency/ Duration	Location	Methods	Estimated Cost
Construction phase							
Operational Phase							