



## BADMAAL

### SOMALI SUSTAINABLE FISHERIES DEVELOPMENT PROJECT- Badmaal

#### TERMS OF REFERENCE

### Feasibility Studies and Technical Design for Fish Landing Jetties at Kismayo, Warsheik and Jazeera

#### 1. Background

Somalia is a country characterized by a rich diversity of ethnicities and abundant natural resources. With the longest coastline in continental Africa and a strategic position in the Horn of Africa, Somalia encompasses a land area of 637,657 km<sup>2</sup> and an Exclusive Economic Zone (EEZ) exceeding 850,000 km<sup>2</sup>. The traditional livelihoods of its people are influenced by varying geographic and climatic conditions; northern Somalia primarily consists of arid and semi-arid regions, while southern Somalia benefits from higher agricultural potential due to increased rainfall and the presence of the Juba and Shebelle rivers. The country's coastal and marine waters are rich in valuable resources that have the potential to support sustainable fisheries in both coastal and offshore areas. This potential can significantly strengthen food security, livelihoods, employment, revenue generation, and overall economic growth.

The Federal Government of Somalia, through the Ministry of Fisheries and Blue Economy (MFBE) in close cooperation with the FMS ministries of fisheries, is actively implementing the World Bank-funded Somalia Sustainable Fisheries Development (SSFD) Badmaal Project. The Project Development Objective is to improve the capacity of targeted communities and authorities to benefit from and effectively manage selected fisheries. The project includes two major components:

- **Component 1** will support climate resilient fisheries infrastructures and related value chains, and fishing community capacity building in the five Federal Member States (FMS) as well as in the Banaadir (BRA).
- **Component 2** will support the development of fisheries governance and management, with the necessary capacity reinforcement of the national institutions.

These components are closely interconnected, as effective resource governance is critical to the sustainable development of the fisheries sector, particularly for domestic stakeholders.

Under Component 1 Sub-Component 1.1 Climate-resilient fisheries infrastructure activities, the purpose of this assignment is, for three selected locations (i.e. Kismayo, Warsheik and Jazeera), to:

- 1) Undertake feasibility studies for the proposed infrastructure, including an assessment of financial feasibility related to construction, operating, and maintenance costs; economic feasibility that evaluates the projected quantity of fish and the increased value derived from the construction; and construction feasibility, which involves analyzing material availability and investigating coastal processes for potential environmental issues.

- 2) Prepare concept and detailed designs for agreed feasible infrastructure that accounts for impacts of climate change as well as the needs of each community, men, women and youth.
- 3) Prepare comprehensive Environment and Social Impact Assessments for each infrastructure; and,
- 4) Develop appropriate business and management models and plans for operating and maintaining this infrastructure.

The design life for all the static structures shall be at least 50 years and shall include recommendations for climate change and resilience mitigation, including sea level rise.

## **2. Objectives of the Assignment**

- Conduct comprehensive feasibility studies to assess the viability of constructing fish landing jetties in Kismayo (Jubbaland), Warsheik (HirShabelle) and Jazeera (SouthWest), encompassing technical, economic, social, climate and environmental assessments.
- Develop detailed technical designs for the jetties based on the outcomes of the feasibility studies, ensuring compliance with engineering standards and best practices.
- Prepare Environmental and Social Impact Assessments (ESIA) to evaluate potential impacts and ensure compliance with environmental and social standards.

## **3. Scope of Work**

To achieve this, a series of critical tasks make up the scope of work:

### **Task 0: Inception and detailed workplans**

- Undertake preliminary site visits to examine project locations in Kismayo, Jazeera and Warsheik to information necessary for the preparation of project inception report and of detailed workplan for each infrastructure.
- Confirm operational fishing fleet structure, including type of vessel, at each location, landing quantify by season and other relevant information on fishing activity necessary to determine dimension and type for the development of a jetty,
- Prepare and update throughout the project a Design Basis Report comprising Codes and standards applied for the project, including the International Building Code (IBC 2021) supplemented as necessary by other international and national codes, regulations, directives or rules.
- Prepare inception report and a detailed workplan, including implementation schedule

### **Output: inception report and detailed workplan**

#### **Task 1: Engineering and Geo-Technical options for jetty construction**

- Analyse project site topography, geology, bathymetry, weather and coastal processes including wave action regimes for weight-bearing capacity at each potential jetty site. This includes:
  - Topographic surveys of project location/area
  - Bathymetric mapping of project area extending down to the 10-meter contour
  - Geomorphologic description of the project site

- Through site visits and remote sensing, assess sites for suitability using natural advantages offered by the coastline and bathymetry.
- A clear understanding will need to be developed by the Consultant of the functionality of each area of operations and of the foreseeable numbers of regular and occasional users, to be able properly dimension the infrastructure for its intended operations:
- Model the economic and financial outcomes feasibility of a jetty, based on estimates of construction costs, maintenance volumes and values of current catches and potential increase in production.
- Provide recommendation to MFBE/FMS on feasibility of jetty construction at the selected site. If feasible, proceed to Task 2.

**Output: feasibility study reports for each jetty**

**Task 2: Jetty conceptual design options**

- Based on the analysis from Task 0 and 1, and in close consultation with stakeholders (i.e. MFBE, FMS and beneficiary), prepare a conceptual design for each jetty. Proposed concept should minimize environmental and social impacts, and integrate climate change, including sea-level rise and climate hazard, consideration and mitigation.
- Explore pre-fabricated options for jetties from major manufactures (i.e. Armour Rock Marine, Majestic Marine Construction, Gulf Foundation FZE, Damen, APT Global, SF Marina, MDS marine and Marinestructures.com.au) identify dimensions and structure of a jetty suitable for the location's topography and bathymetry for the fleet and type of vessels operating at each location,  
Prepare preliminary cost estimates using appropriate rates for remote location installations, including prefabrication, installation, and transport.
- Assess access to potable water, all utility supplies and provision of an adequate waste disposal system (for fishing gear, plastic waste, engine oil and fish waste).

**Output:** report and presentation on conceptual options for each jetty for stakeholder consultation and review. The outputs will include professional drawings, plans, elevations, and budget estimates (with initial capital costs, long-term running costs and maintenance costs).

The selection of the preferred option by the client will be a prerequisite for the Consultant to proceed to prepare detailed design (Task 3).

- Design and cost the structure using appropriate rates for remote location installations, including prefabrication, erection, installation, and transport costs.

**Task 3 Environmental and Social Impact Assessment (ESIA)**

- Based on selected concepts, prepare an ESIA for each proposed jetty site in line with national regulations, project Environmental and Social Management Plan (ESMF) and World Bank Environmental and Social Framework.
- In close consultation with stakeholders and beneficiaries, identify potential environmental risks (e.g., habitat disturbance, sedimentation, coastal erosion, pollution) and social impacts (e.g., displacement, livelihood disruption, gender considerations).
- Propose appropriate mitigation and management measures, including an Environmental and Social Management Plan (ESMP).
- Provide guidance on compliance with environmental permitting processes.

**Output: comprehensive ESIA for each site.**

**Note:** validation by the client and the World Bank would be needed on the ESIA's

#### **Task 4. Detailed technical designs and drawings**

Based on selected conceptual designs, and integrating recommendation from the ESIA and ESMP, prepare detailed draft final engineering design reports and drawings. This shall comprise:

- Detailed Design Drawings.
- Technical Specifications, including but not limited to:
  - Scope; Materials; Workmanship incl. tolerances; Testing; Measurement for calculation of payment.
- Bills of Quantities (BOQ) with detailed quantities including Daywork Rates, and Summary Sheet. The Bills shall be itemized and prioritized so as to allow the final Works Contract to be adjusted to meet budget.
- Estimated cost, i.e. the Bills of Quantities completed with unit price estimates to provide updated construction budget. The BOQ cost estimates shall also include the costs for the implementation of the Environmental and Social Management Plan (ESMP), to be derived from the ESIA report.

**Output:** detailed drawing and cost estimated to be approved by the Client prior to Bidding

#### **Task 5: bidding documents and bidding assistance**

- Prepare bidding documents according to the project format, including
  - PART 1 – Bidding Procedures
  - Section I - Instructions to Bidders
  - Section II - Bid Data Sheet (BDS)
  - Section III - Evaluation and Qualification Criteria
  - Section IV - Bidding Forms
  - Section V - Eligible Countries
  - Section VI - Fraud and Corruption
  
  - PART 2 – Works' Requirements
  - Section VII - Works' Requirements
  
  - PART 3 – Conditions of Contract and Contract Forms
  - Section VIII - General Conditions of Contract
  - Section IX - Particular Conditions of Contract
  - Section X - Contract Forms
- Upon request, assist the client with Contractor Market Outreach, assist in responding to any bidder's clarifications and support preparation of draft evaluation reports, the draft contract, the letter of award, and provide any support requested by the Client during the bid evaluation process and analysis of the cost of the bids with the engineering estimate, identifying risks and value engineering.

**Output:** bidding documents and advice upon client request

### Task 6 Business plan and management options

- M, based on a proposed business model taking into account the current and potential future value of the fishery at each location, as well as the costs of jetty construction, installation, and maintenance. Sensitivity analysis to be included in the financial and economic modelling.
- Proposed management options to ensure sustainability of the infrastructure, identifying clear responsibility for operation and maintenance.

Output: economic feasibility, business model and plan, management options

### 4. Deliverables and Timelines

The assignment is expected to require around **5 Months**, to be initiated as soon as the contract is signed. An indicative schedule for delivery of the expected outputs described in previous sections is:

Task	Deliverable	Description	Timing / Deadline
<b>Task 0: Inception and Detailed Workplans</b>	Inception Report and Work Plan	A document outlining initial findings and project scope based on preliminary site visits and comprehensive workplan	One Month from contract signing
<b>Task 1: Engineering and Geo-Technical Options</b>	Feasibility Study Reports	Reports assessing the financial, economic, and construction feasibility for each jetty site, including analyses of topography, geology, and coastal processes.	Feasibility reports due one Month following each site visit
<b>Task 2: Jetty Conceptual Design Options</b>	Conceptual Design Report and Presentation for Stakeholder Consultation	A document presenting conceptual designs for each jetty, including environmental and social impact considerations, and pre-fabrication options.  Visual and oral presentation of conceptual design	Report to be submitted three months after approval of progress reports for Task 1

		options to stakeholders, including professional drawings and budget estimates.	
<b>Task 3: Environmental and Social Impact Assessment (ESIA)</b>	Comprehensive ESIA for each site	A detailed report evaluating potential environmental and social impacts, complete with mitigation strategies.	Three months after the approval of the conceptual design
<b>Task 4: Detailed Technical Designs and Drawings</b>	Detailed Design Drawings	Precise engineering drawings for each jetty based on selected concepts, integrating ESIA recommendations.	One month after approval of the ESIA
	Technical Specifications Document	A document outlining the technical requirements, materials, workmanship, and testing standards for the jetty construction.	One month after approval of the detailed design drawings
	Bills of Quantities (BOQ)	Itemized breakdown of construction costs and quantities, including costs for the ESMP implementation.	
<b>Task 5: Bidding Documents and Bidding Assistance</b>	Bidding Documents	Fully prepared bidding documents according to the project format, including all necessary sections and criteria for bidders.	One month after the completion of detailed designs
	Bid Evaluation Support	Assistance in responding to bidder inquiries	Upon request during the bidding process

		and preparation of draft evaluation reports and contracts.	
<b>Task 6: Business Plan and Management Options</b>	Economic Feasibility Report	A report on the economic viability of the proposed jetty infrastructure, including sensitivity analysis.	Two months after the completion of detailed designs
	Business Model and Management Plan	A proposal for sustainable management and operational responsibilities, ensuring long-term viability of the infrastructure.	

## 5. Qualification and Expertise

- Core business of the firm and at least 10 years' expertise in planning and designing coastal/marine infrastructure, such as jetties, ports, docks.
- Demonstrate relevant experience in similar assignments i.e the firm should have done assignments that are similar in nature, value, magnitude and complexity to the current assignment " Feasibility Studies and Technical Design for Fish Landing Jetties.
- Proven experience in conducting ESIA's, including proposing mitigation strategies for environmental and social impacts.
- Demonstrate technical and managerial capacity
- Ability to operate in Somalia, including in all three locations
- Skilled in topographic, geotechnical and bathymetric investigations and sediment dynamics.

The team should possess the following expertise:

### A. Marine Engineer (Team Leader)

- Master's degree in marine engineering or related field.
- Minimum of 10 years of experience in marine infrastructure design, including ports, jetties, docks or construction.
- Experience of coastal processes, including movement of water and sediment, erosion, transportation, and deposition along the shore.
- Experience of at least two projects related to preparatory studies of similar infrastructure
- Professional Engineering license (PE) is preferred, demonstrating recognized expertise and adherence to industry standards.
- Strong report writing skills (in English) considered essential.
- Experience of managing multi-disciplinary teams considered essential.

### B. Civil Engineer

- Degree in Geotechnical Engineering, Civil Engineering, or a related field.
- At least 7 years of experience specifically in coastal or marine infrastructure.
- Experience on at least two similar projects related to preparatory studies of similar infrastructure
- Should have experience with coastal processes.
- Ability to conduct comprehensive topographic, bathymetric, geotechnical investigations, including site characterization.
- Relevant certifications such as Geotechnical Engineer (GE) or Geotechnical Intern (GIT) are preferred.

#### **C. Marine Environmental Specialist**

- Degree in Environmental Science, Ecology, Environmental Policy, or a related field.
- Minimum of 5 years of experience in environmental consultancy, particularly involving marine and coastal ecosystems.
- Strong understanding of marine ecosystems, biodiversity, and the potential environmental impacts of construction activities.
- Proven experience in conducting Environmental Impact Assessments (EIAs) and preparing comprehensive reports, ideally compliant with World Bank safeguarding procedures
- Ability to engage with stakeholders and incorporate public feedback into impact assessments.

#### **D. Social Development Specialist**

- Degree in Social Science, Ecology, Environmental Policy, or a related field.
- Minimum of 5 years of experience in social development or stakeholder engagement.
- Proven experience in conducting Social Impact Assessments (SIAs) and preparing comprehensive reports, ideally compliant with World Bank safeguarding procedures
- Proven experience in conducting public outreach initiatives and addressing community concerns, particularly in coastal fishing communities

#### **D. Fisheries economist**

- Degree in Fisheries Science, Fisheries Management, economics or a related field.
- Minimum of 5 years of experience in fisheries consultancy, particularly involving fisheries economic studies.
- Proven experience in conducting c fisheries socio-economic surveys.
- Experience in preparing economic analysis

#### **E. Quantify surveyor**

- Degree in Civil Engineering, quantity surveying, or a related field.
- At least 7 years of experience in construction contract.
- Proven experience in preparing Bill of quantities and costing for infrastructure development.

#### **G. Procurement Specialist**

- Degree Engineering, procurement, business or related degree
- At least 5 years' experience in construction contracts
- Experience in the preparation of bidding documents in accordance with FIDIC conditions of contract and RFB Standard procurement documents (SPD). Desirable: World Bank experience in procurement.