Government of the People's Republic of Bangladesh
Prime Minister's Office
Bangladesh Economic Zones Authority (BEZA)
www.beza.gov.bd

Memo No: 03.07.0000.014.07.069.2022-2587 Date: 29/08/2022

Request for Expression of Interest (EOI)

Feasibility Study for Construction of Jetty at Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) including ESIA, Preparation of Detailed Design, BOQ, Cost Estimation and Bid Documents

1.	Ministry	:	Prime Minister's Office		
2.	Agency	:	Bangladesh Economic Zones Authority (BEZA)		
3.	Name of the Procuring Entity	:	Bangladesh Economic Zones Authority (BEZA)		
4.	Title of Service	:	Feasibility Study for Construction of Jetty at Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) including ESIA, Preparation of Detailed Design, BOQ, Cost Estimation and Bid Documents		
5.	Procuring Entity District	:	Dhaka (BEZA HQ)		
6.	EOI for Selection of	:	Consulting Firm to conduct feasibility study and prepare necessary documents for construction of Jetty		
7.	EOI Ref. No.	:	03.07.0000.014.07.069.2022		
8.	EOI Publication Date	:	31 August 2022		
KEY INFORMATION					
9.	a) Procurement Type	:	International Competitive Bidding (ICB)		
	b) Procurement Sub-Method		Quality and Cost Based Selection (QCBS)		
10.	Contract Type	:	Lump-Sum		
11	Budget and Sources of Funds	:	BEZA Own Fund		
12.	EOI Closing Date & Time	:	02 October 2022 at 3.00 PM (BST)		
INFORMATION FOR APPLICANT					
13.	Brief Description of the Assignment	:	The detailed description of the assignment is statd in the ToR which is available in BEZA website along with this EoI notice. However, The service includes but not limited to: 1) Site Overview, 2) Tide and Storm Surge Analysis, 3) Wave Analysis, 4) Hydrologic Analysis, 5) Morphological Analysis, 6) Traffic, Cargo and Passenger demand Analysis, 7) Jetty Locations and Jetty height, 8) Architectural Design Details of Jetty and Terminal Infrastructure, 9) Dredging volume and requirement, 10) Shore Protection Measures, 11) Geotechnical Assessment, 12) Water Supply and Sanitation, 13) Cost Estimation, 14) Prepare and submit necessary EIA, 15) Financial and Economic Analysis, 16) Any other task required and asked by the Employer.		
14.	Experiences, Resources, & Delivery Capacity Required	:	The consultant shall be shortlisted on the basis of the following criteria -		
	a) Company Legal Identity	:	The consultant shall submit up-to-date and valid document - i. Company's Incorporation Certificate, ii. VAT Registration Certificate, iii. Income Tax Certificate, iv. Joint Venture Agreement (in case of joint venture)		
	b) Qualification and Experiences	:	i. Minimum 15 (fifteen) years age of the firm from incorporation, ii. Minimum 10 (ten) years experiences in consultancy services of the firm, iii. At least 1 (one) similar nature of assignment completed during the last 10 (ten) years with a minimum contract value amounted US$ 0.25 million		
	c) Financial Capability	:	i. Minimum amounts of solvency US$ 0.25 million of the firm, ii. Minimum annual average turnover US$ 0.50 million for the last 3 (three) financial years		
	d) Administrative, Facilities and Expertise of the firm	:	Consulting firm should mention their administrative strength including organogram, number of regular professional staff, list of office equipment etc.		
15.	Contract Execution Period	:	The duration of the contract is expected to be 12 (twelve) Months.		
16.	Association with Foreign Firm	:	Encouraged		
17.	Package Details	:	**Package No.**	**Indicative Start Date**	**Indicative Completion Date**
			PS04-BEZA-2022	01 February 2023	31 January 2024
PROCURING ENTITY DETAILS					
18.	Name & Designation of Official Inviting EOI	:	Doyananda Debnath General Manager (Planning & Development)		
19.	Address of Official Inviting EOI	:	Bangladesh Economic Zones Authority Prime Minister's Office Biniyog Bhaban (Level 7,8,9) Plot# E-6/B, Agargaon, Dhaka-1207, Bangladesh		
20.	Contact Details of Official Inviting EOI	:	Phone: +(88) (02) 44826020 E-mail: doyananda@yahoo.com		
21.	Particular Instruction:	:	• The Procuring Entity reserves the right to reject all EOIs for any reason whatsoever; • Consultant will be selected in accordance with the procedure set out in Public Procurement Act 2006 and Public Procurement Regulations 2008; • This EOI notice is also available in BEZA website www.beza.gove.bd, CPTU website www.cptu.gov.bd and dgmarket website. • The list of required documents to be submitted with application and detailed Terms of Reference (TOR) are available in www.beza.gove.bd, www.cptu.gov.bd and dgmarket website.		

29.08.2022

Doyananda Debnath
(Joint Secretary)
General Manager (Planning & Development)

Final Version

TERMS OF REFERENCE (TOR)

Feasibility Study for Construction of Jetty at Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) including ESIA, Preparation of Detailed Design, BOQ, Cost Estimation and Bid Documents

A. INTRODUCTION

Bangladesh Economic Zones Authority (BEZA) has been developing Bangabandhu Sheikh Mujib Silpa Nagar (BSMSN) encompassing Mrisarai, Sitakundu and Sonagazi which are the adjoining upazilas of Chattogram and Feni. The total land area is around 30,000 Acres located in between 25KM of coastline of Sandeep Channel of the Bay of Bengal and Dhaka – Chattogram national highway. A substantial part of the site is free from any inhabitant and reclaimed land. It is protected by a Super Dyke built along the coastline. The site is presently connected to Dhaka- Chattogram highway and has proximity to the Port City Chittagong.

BSMSN is one of the most suitable sites of Bangladesh for setting up industrial establishments. It is along the strategic location of Dhaka-Chattogram industrial corridor. In Mirsarai, as well as in Chattogram division, business costs and cost of living are significantly lower than those of the other competing cities of the world. Chittagong, with all its potentialities, is an attractive destination for setting up huge number of industries, commercial establishments and financial institutions. With a high quality business friendly environment, it has positive impacts and contributions in shaping Chattogram into a leading regional business hub. BSMSN, the first planned city of the country, will pave the way for establishing a truly world-class business and industrial center. For BSMSN, BEZA would like to build strong partnership with the private sector, local entrepreneurs and foreign investors.

BEZA has a comprehensive masterplan for developing this self-contained Industrial City including, Marine Drive, Residential Area, Tourism Park, Power Plant, Hospital, School and University, Maritime Jetty etc.

BSMSN has following targets and expected to be achieved by the year 2040:

- Developed a planned Industrial City adjoining Mirsarai and Feni EZ on 30,000 acres of land;

- Ensure employment for 1.5 million people within next 15 years;
- Ensure $15 billion export from this industrial enclave;
- Potential Investment Sector;
- Garments & Garment Supporting Industries;
- Agro-products and agro-processing products;
- Integrated Textiles, Leather and leather products, EV and Motorbike Assembly;
- Food & Beverage, Pharmaceutical products
- Paint & Chemical, Paper & Products, Plastics
- Light engineering (including auto-parts and bicycles)
- Power, Solar Park and Tourism facilities.

B. BACKGROUND OF JETTY CONSTRUCTION

In view of the above, it is expected that substantial amount of cargo/passenger (in and out bound) will be generated in the BSMSN that needs to be handled by jetties along the shore line of Sandeep Channel. As such, BEZA now wishes to /construct a Multi- Purpose Maritime Jetty facility on the suitable location of Sandeep Channel adjacent to BSMSN.

The main objective of the Project is to facilitate investors, industries and other stakeholders of BSMSN handling in and out bound maritime cargo and connectivity to inland water transportation.

C. OBJECTIVE OF THE ASSIGNMENT

The main objective of this study is to carry out the feasibility study including environmental and social impact assessment (ESIA), preparation of detailed design, bill of quantity (BOQ), cost estimation and bid documents for constructing the proposed jetty in the perspectives of technical, economic and environmental conditions.

D. SCOPE OF WORKS

Consulting Firm is to carry out following activities:

1) Conduct field visits to know, understand the jetty area, locality, coastal channel alignment, flow condition, bank erosion-accretion, bank stability; interaction meeting with user and other stakeholders;
2) Carry out topographic survey, bathymetric survey and other necessary survey and collection of data, information regarding traffic, cargo and passenger volume to and from

this jetty, and probable future traffic by collecting relevant transport data, information from BIWTA, relevant organizations, meeting with Investors and Stake holders, informal sources (local people, professionals, traders, etc.);

3) Collect relevant hydrologic (tide data), hydraulic, hydrographic, morphologic data, information from BIWTA, BWDB, SPARRSO, Bangladesh Navy etc. Carry out hydrographic survey, observation of tide and measurement of current speed for neap and spring tide both dry and monsoon season using Acoustic Doppler Current Profiler (ADCP).
4) Carry out cyclonic storm surge modelling for the historical cyclones that hit the coastal area of Bangladesh for generating storm surge level at the location of jetty;
5) Perform statistical analysis of time series of tide, storm surge level and wave height for establishment of tide level, storm surge level and cyclonic wave height for 50 and 100 yr. frequency;
6) Carry out sediment/morphological modelling in order to establish the baseline hydraulic and morphological conditions and impact of the Jetty on costal morphology for extreme flood events. Provide estimated area for land required or to be used, based on project requirement, if required;
7) Collect the wave observation data, the maximum significant wave height and average wave height, and corresponding lengths, periods, directions and wave rose; and analyzing the local wave characteristic considering storm tide;
8) Analyze and providing the max. significant wave height for different frequencies and directions at the jetty sites considering possible storm tide influence. Conduct wave simulation of Bay of Bengal with specific reference to Sandeep Channel, considering different design water level conditions.
9) Conduct economic and financial analysis in order to check the economic viability of establishment of the infrastructures, and economic and financial analysis including Benefit Cost Ratio (BCR), Financial Internal Rate of Return (FIRR) and Economic IRR.
10) Carrying out detailed EIA according to the guideline of the Department of Environment including preparation of the EMP. Carrying out Social Impact Assessment (SIA). Preparing detailed design and estimate of jetty and associated infrastructures.

In order to achieve the objectives of the study, the following outcomes are considered:

- Best locations for the jetty;
- Design deck level of the jetty;
- Layout of the jetty;
- Available draft and volume of required dredging;
- Volume of Traffic, Cargo and Passenger demand forecast;
- Terminal Operational and Management Plan;
- EIA, SIA and Environmental Management Plan;
- Architectural Design of Jetty and related facilities;
- Structural Design of Jetty;
- Cost Estimates, Bill of Quantity (BoQ), Bid Documents;
- Financial and Economic Analysis.

For organized and formatted reporting, the scope of works is divided into following tasks:

TASK 1: DESCRIPTION ON "SITE OVERVIEW" after carrying out necessary field survey such as topographic, bathymetric, hydrographic etc.

TASK 2: TIDE AND STORM SURGE ANALYSIS by carrying out Hydrodynamic modeling of tide and storm surge, Model set-up, Boundary conditions, Model calibration and validation, Bangladesh Coastal Model simulation result.

TASK 3: WAVE ANALYSIS by Wave Assessment Method, Cyclone wind model, Wave Mode

TASK 4: HYDROLOGIC ANALYSIS by Estimation of Design High Tidal Water Level. Return Period of the Design High Water Level. Estimation of Design Low Water Level. Return Period of the Design Low Tidal Water Level

TASK 5: MORPHOLOGICAL ANALYSIS by Measurement of bathymetry and flow field at the jetty sites ,bank stability of the shoreline – satellite image analysis ,selection of latest satellite images ,Assessment of shore line shifting by delineating land-water interface by Image Pre-Processing ,Bank line delineation using water index ,findings from satellite image analysis ,impact on Flow Field due to Jetty Piers, Jetty Model set-up, Boundary conditions ,Model validation ,Impact of jetty on flow field at Mirsarai location, Impact of jetty on flow field at Sandeep ,Summary of impacts of jetty piers on local flow fields, Erosion/Sedimentation Processes at the jetty sites

,Regional flow and sediment transport process ,Sediment transport process at the jetty location and identify the area subject to erosion in future along the shore line of BSMSN.

TASK 6: TRAFFIC, CARGO AND PASSENGER DEMAND ANALYSIS is to be carried out by Master Plan Analysis, and by secondary data from Bangladesh Inland Water Transport Authority (BIWTA), Chattogram Port Authority. Meeting with Investors, and other stake holders, etc. Also by traffic demand –variable relationship from secondary data of the national GDP and traffic growth. Demand forecasting, types and volume of Cargo and Passenger for next 30 years by Estimation Method, Benchmarking Method, Probabilistic Method, Climate Condition, Local people movement, Existing Planned Road Connectivity Study, Traffic Analysis, Estimating Jetty length and provision for expansion in future to cater the demand until 2050.

TASK 7: JETTY LOCATIONS AND JETTY HEIGHT needs to be worked out based on the all relevant study reports without affecting the existing super dyke.

TASK 8: ARCHITECTURAL DESIGN DETAILS OF JETTY AND TERMINAL INFRASTRUCTURE should be done mentioning design objective, methodology and site study. Provide plan and design of protective measures considering tide, wind wave and cyclonic storm surge and wave.

TASK 9: DREDGING VOLUME AND REQUIREMENT for Capital dredging and Maintenance dredging illustrating methods of analysis. Costing for Capital dredging and Maintenance dredging should also be provided.

TASK 10: A DETAILED DESIGN SHORE PROTECTION MEASURES (if needed) should be given including cost estimates.

TASK 11: GEOTHECHNICAL INVESTIGATION AND ASSESMENT of the recommended Jetty Site and infrastructure facilities should be done and recommendation for types of foundation should be given. The same should be incorporated in the cost estimate.

TASK 12: Necessary design details including COST ESTIMATION OF WATER SUPPLY AND SANITATION works should be provided.

TASK 13: COST ESTIMATION of all components of Jetty and Infrastructural facilities shall be done based on all present Schedule of Rates of various Govt. organizations. Any rate considered

other than Schedule of Rates of Govt. organizations must have acceptable valid local reference and to be mentioned in the Remarks Column. Preparation of BoQ and Bid documents including necessary drawings.

TASK 14: Prepare and submit necessary ENVIRONMENTAL IMPACT ASSESSMENT (EIA) as per the Department of Environment (DoE), Govt. of Bangladesh guidelines and any other reports that may be required for the DoE clearance for construction of the Jetty and associated infrastructures. Assist BEZA in getting approval from the Department of Environment (DoE).

TASK 15: FINANCIAL AND ECONOMIC ANALYSIS.

TASK 16: Any OTHER TASK required and asked by the Employer to complete the study with a meaningful outcome.

E. Expected Time Schedule

The total duration of consulting services will be 12 months

The implementation schedule expected is as shown below.

Key Activities	**Duration in Months**
Invitation of EOI	30/08/2022
Issue of RFP	30/10/2022
Commencement of Consulting Services	01/02/2023
Completion of Consulting Services	31/01/2024

F. Expertise Required

The consultant team will consist of both Key Experts and Non-Key Experts and will be engaged for the duration of consulting services. Key Experts and Non-Key Experts required to execute the Consulting Services are summarized in the following table:

Experts	**Key Expert**	**Non-Key Expert**	**Total MM**
Key-Expert	60	140	200

Key Experts: Indicative Expected Man-Months, Educational Qualifications and Experiences

SN	Position	No	MM	Total MM	Minimum Educational Qualifications	General Experience	Specific Experience
K-1	Team leader (International)	1	8	8	B.Sc. Engineer (Civil) from any reputed university/institution	20 Years	Minimum 15 yrs. of experience in the relevant field.
K-2	Mechanical Engineer	1	6	6	B.Sc. Engineer (Mechanical) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-3	Structural Engineer (Civil)	1	6	6	B.Sc. Engineer (Civil) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-4	Infrastructure Engineer (Civil)	1	6	6	B.Sc. Engineer (Civil) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-5	Architect	1	6	6	B. Arch. from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-6	Hydrologist	1	3	3	B.Sc. Engineer (Water Resource) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-7	Environmental Specialist	1	3	3	M.Sc. (Environment) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the relevant field.
K-8	Shipping Navigation Expert	1	2	2	Graduate in Shipping/Navigation /Maritime/ Marin Studies or equivalent subject from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-9	Marine	1	2	2	B.Sc. Engineer	15 Years	Minimum 10 yrs.

SN	Position	No	MM	Total MM	Minimum Educational Qualifications	General Experience	Specific Experience
	Engineer				(Marine) from any reputed university/institution		of experience the relevant field.
K-10	Harbor Engineer (International)	1	2	2	B.Sc. Engineer (Harbor) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-11	Electrical Engineer	1	3	3	B.Sc. Engineer (Electrical) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-12	Jetty Design expert (International)	1	3	3	B.Sc. Engineer (Civil/Mechanical) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience in the Jetty design
K-13	Geo Technical Design Engineer	1	3	3	B.Sc. Engineer (Geo-Technical) from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-14	Survey Expert (Bathymetric)	1	2	2	B.Sc. Engineer (Water Resource) or equivalent subject from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-15	Financial Analyst	1	2	2	BBA with Major in Finance from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-16	Social Expert	1	2	2	Graduate in Social Science/Sociology or equivalent subject from any reputed university/institution	15 Years	Minimum 10 yrs. of experience the relevant field.
K-17	Ecologist	1	1	1	Master in Environment/ Zoology/Botany or equivalent subject from any reputed	15 Years	Minimum 10 yrs. of experience the relevant field.

SN	Position	No	MM	Total MM	Minimum Educational Qualifications	General Experience	Specific Experience
					university/institution		
Total		**17**		**60**			

Non-Key Expert: Indicative Expected Man-Months, Educational Qualifications and Experiences

SN	Position	No	MM	Total	Educational Qualification	General Experience	Specific Experiences
1	Civil Engineer	1	6	6	B.Sc. Engineer (Civil) from any reputed university/institution	10 Years	Minimum 5 Yrs. experience in relevant field.
2	Mechanical Engineer	1	6	6	B.Sc. Engineer (Mechanical) from any reputed university/institution	10 Years	Minimum 5 Yrs. experience in relevant field.
3	Electrical Engineer	1	6	6	B.Sc. Engineer (Electrical) from any reputed university/institution	10 Years	Minimum 5 Yrs. experience in relevant field.
4	Marine Engineer	1	3	3	B.Sc. Engineer (Marine) from any reputed university/institution	10 Years	Minimum 5 Yrs. experience in relevant field.
5	Geologist	1	3	3	Master in Geology from any reputed university/institution	10 Years	Minimum 5 Yrs. experience in relevant field.
6	Sub Asst. Engineer (Civil)	1	12	12	Diploma in Civil Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.

SN	Position	No	MM	Total	Educational Qualification	General Experience	Specific Experiences
7	Sub Asst. Engineer (Electrical)	1	12	12	Diploma in Electrical Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
8	Sub Asst. Engineer (Mechanical)	1	12	12	Diploma in Mechanical Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
9	Auto-CAD Operator (Civil)	2	6	12	Diploma in Civil Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
10	Auto-CAD Operator (Electro-Mech.)	2	4	8	Diploma in Mechanical/Electrical Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
11	Surveyor	2	6	12	Certificate on Surveying course from any recognized Institute	10 Years	Minimum 5 Yrs. experience in relevant field.
12	Estimator (Civil)	2	6	12	Diploma in Civil Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
13	Estimator (Electro-Mech.)	2	6	12	Diploma in Mechanical /Electrical Engineering from any reputed institution	10 Years	Minimum 5 Yrs. experience in relevant field.
	Total			**116**			

G. Reporting/ Deliverables

Within the scope of consulting services, the Consultant shall prepare and **submit reports as per the prescribed format and the contents for" Feasibility Study for the Project"** (to be collected from the P&D section of BEZA) along with other relevant documents to the Employer, as shown in the following Table. The Consultant shall provide hard (no of copies are mentioned) and electronic copy (Word & PDF format) of each of these reports.

SL	Type of Report	Time Frame	No. of copies
1	Submission of Inception Report	Within one month after commencement of the services	10
2	Submission Interim Report on feasibility study with presentation to BEZA and submission of EIA ToR for approval of DoE	Within four months from the commencement of services	5
3	a) Submission of draft detailed environmental and social impact assessment and present to BEZA b) Submission of final environmental and social impact assessment and present to DoE for clearance	Within ten months from the commencement of services	5 + 5 = 10
4	a) Submission of Draft Feasibility Report with presentation to BEZA b) Submission of Final Feasibility Report and get approval from BEZA	Within ten months from the commencement of services.	5 + 5 = 10
5	Submission of Draft Detailed Design, Cost Estimation, BoQ and Bid Documents including Geo-Technical Investigation Report with presentation to BEZA	Within ten months from the commencement of services.	3
6	a) Submission of Final Detailed	Within eleven months from the	3 + 3 = 6

	Design, Cost Estimation, BoQ and Bid Documents and get approval from BEZA b) Submission of Geo-Technical Investigation Report including other relevant reports	commencement of services.	
7	Submission of all final deliverables in compendium	Within twelve months from the commencement of services.	2

N.B.: Each submission must be accompanied by a soft copy.

H. Obligations of the Executing Agency

BEZA may provide any relevant documents (if available) to the Consultant on request from the Consultant.

I. Payment Schedule (Lump Sum)

Sl. No.	Deliverable / Milestone	Payment (% of total contract amount)
1	Acceptance of inception Report	5%
2	Acceptance of Interim Report	15%
3	a) Acceptance of ESIA Report	15%
	b) DoE clearance on EIA Report	10%
4	Acceptance of FS Report	20 %
5	Acceptance of Detailed Design , Cost Estimates, BoQ, Bid Documents including all relevant reports	25%
6	Submission of all final deliverables in compendium	10%
		Total 100%

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