

48/HESC/2017-18/SN

Global Expression of Interest (EOI)

For

Services of a Consultancy Organization

For undertaking the study to

IMPROVE THE TRANQUILITY AND SILTATION ISSUES OF

MUTHALAPOZHY FISHING HARBOUR

THIRUVANANTHAPURAM, KERALA, INDIA

Harbour Engineering Department

Government of Kerala

December, 2017

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1. INVITATION FOR EXPRESSION OF INTEREST

Harbour Engineering Department invites sealed Expression of Interest (EOI) from Indian/ International consulting agencies to carry out detailed analysis of post construction issues related to Muthalpozhy Fishing Harbour including wave tranquility, siltation, beach erosion etc and to suggest suitable cost effective measures to address the issues.

The EOI Document containing the details of qualification criteria, submission requirement, brief objective & scope of work and evaluation criteria etc. can be downloaded from the e-gp website www.etenders.kerala.gov.in.

Further details, if any, may be obtained from **Superintending Engineer, South Circle, Harbour Engineering Department, Manacaud P.O., Kamaleswaram, Trivandrum – 695009 Phone: 0471- 2459050, e-mail: sesc.hed@kerala.gov.in** during working hours.

Last date for submission of EOI is 29th January, 2018 upto 1800 hrs. The Expression of Interest (EOI) received will be opened on 02nd February 2018 at 1500 hours in the presence of bidders available at the time of opening. The Expression of Interest (EOI) shall be submitted through e tender website (www.etenders.kerala.gov.in). A non refundable fee of Rs **5000/-+GST (five thousand +GSTonly)** may be paid online while submitting the EOI online. A sealed envelope containing the hard copy of the EOI, details in respect of organizational structures, technical capacity, experience etc. of the firm are to be enclosed in the sealed cover. The sealed envelope shall be marked to the captioned address and superscribed as “EXPRESSION OF INTEREST – MUTHALAPOZHY FISHING HARBOUR”.

**Superintending Engineer
Harbour Engineering Department (South Circle)
Manacaud P.O, Kamaleswaram,
Thiruvananthapuram – 695009**

Applicants meeting the qualification criteria may be invited for presentation of the proposal before the selection committee constituted by the Government. Bid Document will be subsequently issued to the short listed applicants.

**Superintending Engineer
Harbour Engineering Department (South Circle)
Manacaud P.O, Kamaleswaram,
Thiruvananthapuram – 695009**

Note: HED or any of its designates reserves the right to cancel this request for EoI and/or invite afresh with or without amendments, without liability or any obligation for such request for EoI and without assigning any reason. Information provided at this stage is indicative and HED reserves the right to amend/add further details in the EoI.

2. LETTER OF INVITATION

No.D1/2692/2017/SE

Dated:30/12/2017

Dear Sir/Madam,

Harbour Engineering Department invites sealed Expression of Interest (EOI) from Indian/ International consulting agencies to carry out detailed analysis of post construction issues related to Muthalapozy Fishing Harbour including wave tranquility, siltation, beach erosion etc and to suggest suitable cost effective measures to address the issues.

The EOI Document containing the details of qualification criteria, submission requirement, brief objective & scope of work and method of evaluation etc. is enclosed.

The EOI Document is also available on the HED website www.hed.kerala.gov.in. The consultancy organizations, who wish to participate in the EOI shall remit a non-refundable fee of Rs. **5000/-+GST** online through the e-tender website.

They may also submit their responses in sealed envelopes in prescribed format to the undersigned in latest by **02/02/2018 03:pm** the following address.

Superintending Engineer
Harbour Engineering Department (South Circle)
Manacaud P.O, Kamaleswaram,
Thiruvananthapuram – 695009

Queries if any may be referred in writing to the above mentioned address or on enquiry at Telephone No. 0471-2459050/+919447760775 or by e-mail: sesc.hed@kerala.gov.in

S. No.	Critical Dates	Date	Time
1.	Publishing Date	01/01/2018	17.00 hrs
2.	Document Download Start Date	01/01/2018	17.00 hrs
3.	Document Download End Date	29/01/2018	18.00 hrs
4.	Bid Submission Start Date	01/01/2018	17.00 hrs
5.	Bid Submission End Date	29/01/2018	18.00 hrs
6.	Bid Opening Date	02/02/2018	15.00 hrs

Yours faithfully,

Superintending Engineer
South Circle
For & on behalf of Governor of Kerala

Encl.: EOI Document.

3.1. Introduction

The Harbour Engineering Department is the administering agency of Government of Kerala for the 14 nos Fishing Harbours in Kerala. The Harbour Engineering Department is inviting a Global Expression of Interest (EOI) from interested firms for the project “Undertaking the study to improve the tranquility and siltation issues of Muthalapozhy Fishing Harbour” in Kerala. This is not a solicitation for proposals which exceed the scope and budget identified in this Global Expression of Interest (EOI).

The scope of the project includes

- i. Identifying and accurately document the post construction issues related to the construction of breakwater such as tranquility, siltation in the channel, erosion and accretion in the adjoining beaches, manoeuvrability of fishing vessels etc.
- ii. Workout various options to resolve the problems identified.
- iii. Propose various alternatives to resolve the issues and compare the merits and demerits of each alternatives.
- iv. Design and optimization of modification/ alteration/ addition to resolve the issues and make it operational throughout the year.
- v. Based on the studies submit a final proposal within 4 months from date of commencement of study.

The EOI follows a single cover system for technical evaluation of the eligibility and qualification of the applicant.

3.2. Background:

Harbour Engineering Department is a specialized department for the construction of Fishing harbours across coast and marine civil construction works along Kerala coast. The Harbour Engineering Department is the administering agency of Government of Kerala for Fishing Harbours in Kerala.

Muthalapozhy is a fishery harbour in Thiruvananthapuram district located at about 30 kms north of Thiruvananthapuram city. The Vamanapuram river drains into the Arabian sea at Muthalapozhy. The Breakwaters of the Harbour was constructed as per the recommendations of the model study report prepared by IIT Madras. When the breakwater at Perumathura side reached up to 310 m. and Thazhampally side reached upto 410 m., heavy siltation was observed at the entrance of the harbour, contradictory to the observation in the model study report of IIT Madras. In order to resolve the siltation issue a re- engineering study was entrusted to CWPRS Pune. After the study CWPRS suggested to extend the breakwater at Thazhampally (north) by 240m and that at Perumathura (south) side by 330m with slight changes in alignment. A portion of the existing breakwater at Thazhampally side had been removed as per recommendations of CWPRS. Later CWPRS officials visited the site and suggested to limit the length of Thazhampally Breakwater at 420 m and that of Perumathura at 480 m, since the head of breakwater falls at -7m bed level. The inlet channel between these breakwaters have a clear width of 100m. One groyne out of three groynes

proposed at Thazhampally side was completed for a length 90 m at a distance of 300m from Thazhampally breakwater. Since the construction of breakwaters, the tranquility conditions inside the channel was worsened and violent wave breaking was observed in the channel. Due to this the manoeuvrability of vessels in the channel became very difficult and accidents were occurring very frequently. Another major problem faced was the heavy accretion on southern side and resulting erosion on the northern side of the estuary.

The observed wave parameters in Muthalapozy area indicates that the maximum wave height is 1 to 3.5 meters and the predominant wave direction is 220⁰ to 250⁰
The tidal levels of Muthalapozy area are furnished below

MHHW	-	+0.80
MLHW	-	+0.65
MHLW	-	+0.43
MLLW	-	+0.22

The beach and sea bed cross sections indicate a near shore slope of 20 to 25°. A detailed bathymetry chart taken during November 2016 is available for ready reference in the Office of the Superintending Engineer South Circle.

The river discharge during monsoon is furnished below in table.

Discharge in mm3										
Month & Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
January	6.43	2.95	1.46	0.31	7.28	3.23	7.19	3.09	4.43	5.26
February	3.87	1.21	0.82	0.04	4.52	0.17	1.56	0.45	Nil	0.46
March	2.87	1.03	0.52	Nil	3.09	0.27	Nil	0.11	Nil	Nil
April	6.82	1.71	1.26	0.19	6.14	2.90	Nil	1.97	Nil	0.15
May	5.54	2.77	3.38	1.42	5.47	4.68	10.83	0.15	9.61	0.78
June	13.71	28.59	6.68	6.33	32.17	22.94	15.85	85.07	57.60	15.19
July	2.60	22.74	6.64	3.64	28.20	20.50	25.49	42.32	29.27	29.21
August	1.84	8.74	15.65	20.42	15.30	16.25	10.93	29.64	22.17	11.80
September	2.53	3.98	3.38	12.93	26.75	15.26	3.68	4.84	17.71	1.40
October	3.70	8.09	10.00	23.65	10.61	28.83	7.73	16.86	75.42	20.44
November	3.81	14.11	15.35	20.80	17.61	19.82	42.08	13.63	54.71	47.14
December	26.26	6.60	4.93	19.60	8.63	12.38	11.50	6.41	14.29	14.42
Total	79.98	102.10	70.14	109.33	165.77	147.23	136.84	204.54	285.21	146.25
Max. observed discharge in M3/Sec	64.79	35.00	24.53	36.84	41.90	28.93	106.44	148.71	321.39	
Date of occurrence	3 rd Oct	1 st July	8 th August	27 th Oct	8 th Sept.	6 th June	3 rd Nov	19 th June	10 th Oct	

Source : Data collected from IDR B, Thrissur

During summer the river discharge is practically nil. The rivulet acts only as a tidal inlet during summer.

The littoral drift in the area is not quantified. However the shore line changes since the construction of breakwater is available with the office for verification. These are a broad outline of the site condition. However each parameter is to be measured and documented in detail by the consultants. Harbour Engineering Department will provide necessary technical assistance for investigations and the data already available with HED can be utilized for studies. The directional current meter, wave rider buoys, echo sounder etc. available with HED can be utilized for studies.

4.0 Aims & Objectives:

The objective of the study is to seek professional opinion regarding the tranquility of the harbour entrance and sediment transport, etc and to suggest measures for midcourse correction and permanent solution for system improvement and better utilization of resources. The main intention of this EOI is to receive concrete suggestions in respect of making the inlet channel at Muthalapozhy Fishing Harbour navigable throughout the year and to maintain the channel sustainable with minimum dredging. Participants are expected to submit a report which details out program to maintain tranquility in the inlet channel like dredging, extension of breakwaters etc. Once the technology/methodology and the qualified bidders are identified, the Harbour Engineering Department will call for the detailed RFP.

5.0 EOI Processing Fees

A non-refundable processing fee for Rs. **5,000/-+GST (Five Thousand Rupees+GST only)** to be submitted online along with the submission of EOI response through the e tender website. Bids received without processing fee or inadequate processing fee shall be liable to get rejected.

6.0 Venue & Deadline for submission of proposal

Proposal, in its complete form in all respects as specified in the EOI, must be submitted to HED at the address specified herein earlier. In exceptional circumstances and at its discretion, HED may extend the deadline for submission of proposals by issuing an amendment to be made available on the e tendering website, in which case all rights and obligations of HED and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

7.0 Validity of Offer:

The offer for EOI as per this document shall be valid for a period of four (4) months (120 days) initially which may be extended further if required by HED.

8.0 TERMS OF REFERENCE

The detailed terms of reference are enclosed at **Annexure-I**.

9.0 INSTRUCTIONS TO CONSULTANTS

9.1 The Expression of Interest is to be submitted in the manner prescribed below:-

All information as detailed below is to be submitted in two hard copies in separately sealed envelopes and one soft copy in CD:-

- a) Applicant's Expression of Interest as per Format-1.
- b) Organizational structure as per Format-2.
- c) Experience of the organization as per Format-3.
- d) List of three (03) experts/ consultants on payroll as per Format-4.
- e) Financial strength of the company as per Format-5.
- f) Additional information as per Format-6.
- g) Declaration as per Format-7.
- h) Power of Attorney in favour of Authorized Signatory with long and short signatures of Authorized person.
- i) Consultancy organization must have its office in India preferably in South India.

9.2 EOI Documents have been hosted on the e- procurement website of Kerala state www.etender.kerala.gov.in and may be downloaded from the website.

The bidders are expected to examine all instructions, forms, terms and other details in the EOI document carefully. Failure to furnish complete information as mentioned in the EOI document or submission of a proposal not substantially responsive to the EOI documents in every respect will be at the Bidder's risk and may result in rejection of the proposal.

10. Qualification Criteria:

Following will be the minimum pre-qualification criteria. Each eligible consultant should possess all the following pre-qualification criteria. Responses not meeting the minimum pre-qualification criteria will be rejected and will not be evaluated.

Sl. No.	Pre-qualification Criteria	Supporting compliance document
1.	The applicant shall be a firm/company/partnership/proprietorship firm has their registered offices in India	Copy of certificate of Incorporation/ proof of address in India
2.	The firm should be in the business of providing similar consultancy services for at least 03 years as on 31.03.2017.	Certificate by Company Secretary of the Bidder's organization
3.	The Bidder has to be profitable and should not have incurred loss in any of the last 3 consecutive Financial Years (FY 2014-15, 2015-16 & 2016-17)	Format 5 to be certified & validated by Chartered Accountant (CA) of the bidders's organization
4.	The Bidder should have an annual turnover of Rupees 100 Lakhs in each of the last 3 consecutive Financial Years (FY 2013-14, 2014-15 & 2015-16) from only consultancy Services rendered in India	CA certified document with Name of CA registration number, signature and stamp
5.	The Bidder shall have experience of providing:	Copy of Work Order / Contract agreement
	(i). Three similar completed consultancy services (Study and design of marine civil structures) to International/ Central Govt./State Govt./PSUs/Govt. bodies in India costing not less than Rs.50 Lakh each or	
	(ii). Two similar completed services costing not less than Rs.75 Lakh each or	
	(iii). One similar completed services costing not less than Rs. 150 Lakh	
6.	The consultancy firm should have at least 03 full time consultants on its pay rolls	Certificate by Statutory Auditor or Company Secretary of the Bidder's organization
7.	The firm should not be blacklisted by any Central Govt. / State Govt. / PSU/Govt. Bodies	Certificate signed by the Authorized signatory
8.	Preference will be given to agency/organization having prior experience in Review/Appraisal of Centrally Sponsored Scheme for any Central / State Govt. / Govt. Autonomous Bodies.	
9.	The Bidder must have an office in India	Details of branch offices in State/ UTs if any may be submitted

11.0 Evaluation Criteria and Method of Evaluation:

- a. Screening of EOIs shall be carried out as per eligibility conditions mentioned in this document and based on verification of testimonials submitted.

- b. EOI will be evaluated for short listing inter alia based on their past experience of handling similar type of project, strength of their man power, financial strength of firm and presentation / proposal to the selection committee whose decision will be final.
- c. Agencies who qualify as per the eligibility conditions will be provided a brief about the project. The agencies may be required to make a presentation, if required, to a selection committee show-casing their proposals.
- d. HED will take up references and reserves the right to pay due heed to the Bidder's performance elsewhere and any past experience from HED.
- e. Short listed agencies will be issued Bid Documents and asked to submit their price proposal in a sealed envelope.

12.0 Response:

12.1 Bidders must ensure that their Bid response is submitted as per the formats attached with this document. Special comments on the objectives and scope of the service projected in the enquiry may also be submitted along with the offer.

12.2 The EOI as per clause 9.1 should be in sealed cover super scribed, as "EOI for the study regarding tranquility issues of Muthalapozhy Fishing Harbour."

13.0 Conflict of Interest:

13.1 Where there is any indication that a conflict of interest exists or may arise, it shall be the responsibility of the Bidder to inform HED, detailing the conflict in writing as an attachment to this Bid.

13.2 HED will be the final arbiter in cases of potential conflicts of interest. Failure to notify HED of any potential conflict of interest will invalidate any verbal or written agreement.

13.3 A Conflict of Interest is where a person who is involved in the procurement has or may be perceived to have a personal interest in ensuring that a particular Bidder is successful. Actual and potential conflicts of interest must be declared by a person involved in a Bid process.

14.0 Condition under which EOI is issued:

The EOI is not an offer and is issued with no commitment. HED reserves the right to withdraw EOI and or vary any part thereof at any stage. HED further reserves the right to disqualify any bidder, should it be so necessary at any stage.

15.0 Last date of submission of EOI:

The last date of submission of EOI is **29.01.2018 (1800 hrs.)**.

Bid Opening Date & Time is **02.02.2018 (1500 hrs.)**

16.0 FORMATS FOR SUBMISSION:

FORMAT – 1

APPLICANT’S EXPRESSION OF INTEREST

To,

**Superintending Engineer
South Circle
Harbour Engineering Department
Manacaud P.O, Kamaleswaram,
Thiruvananthapuram – 695009**

Sub: Submission of Expression of Interest to undertake study regarding tranquility issues of Muthalapozy Fishing Harbour.”

Dear Sir,

In response to the Invitation for Expressions of Interest (EOI) published on 01.01.2018 for the above purpose, we would like to express interest to carry out the above proposed task. As instructed, we attach 2 sets of the following documents in separately sealed envelopes and one soft copy:

1. Organizational Details (Format-2)
2. Experience in related fields (Format-3)
3. List of experts / consultants on payroll at least 3 (Format-4)
4. Financial strength of the organization (Format-5)
5. Additional information (Format-6)
6. Declaration (Format-7)

Sincerely Yours,

Signature of the applicant
[Full name of applicant]
Stamp.....

Date:

Encl.: As above.

Note: This is to be furnished on the letter head of the organization.

FORMAT – 2

S. No	Organizational Structure Details	
1.	Name of Organization	
2.	Main areas of business	
3.	Type of Organization Firm/ Company/ partnership firm registered under the Indian Companies Act, 1956/ the partnership Act, 1932	
4.	Whether the firm has been blacklisted by any Central Govt. / State Govt./PSU/ Govt. Bodies / Autonomous? If yes, details thereof.	
5.	Address of registered office with telephone no. & fax	
6.	Address of offices in i) National Capital Region of Delhi ii) All other State/UT's iii) In South India	
7.	Contact Person with telephone no. & e-mail ID	

Enclose:-

1. Copy of Certificate of Incorporation.
2. Copy of Article of Association in respect of 3 above.
3. Undertaking in respect of 4 above.

Signature of the applicant

Full name of the applicant
Stamp & Date

FORMAT – 3

Experience in Related Fields						
Overview of the past experience of the Organization in all aspects related to Brand Building related						
Sl. No	Items	Number of Assignments during last 5 years	Order Value of each assignment in Lakhs of Rs. (Enclose copy of each order)	Mention the name of Client/ Organization (Enclose completion certificates)		
1	Experience of assignments of similar nature					
1.1	Experience in Carrying out similar Assignments in Government					
1.2	Experience in carrying out similar assignments in Public sector.					
Decision of Evaluating Committee in ascertaining “similar nature” and “similar assignment” will be final.						

Signature of the applicant

Full name of applicant
Stamp & Date

FORMAT – 4

List of experts/consultants on payroll (at least 3)				
S. No	Name	Designation	Qualification	Relevant Experience
1.				
2.				
3.				
4.				
5.				
6.				

Undertaking to be enclosed

Signature of the applicant

Full name of applicant

Stamp & Date

FORMAT – 5

Financial Strength of the Organization					
S. No	Financial Year	Whether profitable Yes/NO	Annual net profit (in Crores of Rs.)	Overall annual turnover (in Crores of Rs.)	Annual turnover from only Consultancy services rendered in India (in Crores of Rs.)
1	2014-15				
2	2015-16				
3	2016-17				

Note: Please enclose auditor's certificate in support of your claim.

Signature of the applicant

Full name of applicant

Stamp & Date

FORMAT – 6

Additional Information

1. List all enclosures related to the previous sections.

S.NO	Description	No. of pages

2. Additional information to support the eligibility as per Section 7 (Not more than 2 pages).

Signature of the applicant

Full name of applicant

Stamp & Date

FORMAT -7

Declaration

We hereby confirm that we are interested in competing for the Consultancy Services to undertake the study regarding tranquility issues of Muthalapozhy Fishing Harbour”,Thiruvananthapuram.

All the information provided herewith is genuine and accurate.

Authorized Person’s Signature.

Name and Designation:

Date of Signature:

Note: The declaration is to be furnished on the letter head of the organization.

ANNEXURE-I

The study regarding tranquility issues of Muthalapozhy Fishing Harbour.”

TERMS OF REFERENCE

1. BACKGROUND

Harbour Engineering Department is a specialized department for the construction of Fishing harbours across coast and marine civil construction works along Kerala coast. The Harbour Engineering Department is the administering agency of Government of Kerala for Fishing Harbours in Kerala.

Muthalapozhy is a Fishery Harbour in Thiruvananthapuram district located at about 30 kms north of Thiruvananthapuram city. The Vamanapuram river drains into the Arabian sea at Muthalapozhy. The Breakwaters of the Harbour was constructed as per the recommendations of the model study report prepared by IIT Madras. When the breakwater at Perumathura side reached up to 310 m. and Thazhampally side reached upto 410 m. , heavy siltation was observed at the entrance of the harbour, contradictory to the observation in the model study report of IIT Madras. In order to resolve the siltation issue a re-engineering study was entrusted to CWPRS Pune. After the study CWPRS suggested to extend the breakwater at Thazhampally by 240m. and that at Perumathura side by 330m. with slight changes in alignment. A portion the existing breakwater at Thazhampally side was removed as per recommendations of CWPRS. Later CWPRS officials visited the site and suggested to limit the length of Thazhampally Breakwater at 420 m and that of Perumathura at 480 m, since the head of breakwater falls at -7m bed level. The inlet channel between these breakwaters have a clear width of 100m. One groyne out of three groynes proposed at Thazhampally side was completed for a length 90 m at a distance from 300m from Thazhampally breakwater. Since the construction of breakwaters, the tranquility conditions inside the channel was worsened and violent wave breaking was observed in the channel. Due to this the manoeuvrability of vessels in the channel became very difficult and accidents were occurring very frequently. Another major problem faced was the heavy accretion on southern side and resulting erosion on the northern side of the estuary.

The observed wave parameters in Muthalapozhy area indicates that the maximum wave height is 1 to 3.5 meters and the predominant wave direction is 220⁰ to 250⁰ The tidal levels of Muthalapozhy area are furnished below

MHHW	-	+0.80
MLHW	-	+0.65
MHLW	-	+0.43
MLLW	-	+0.22

The beach and sea bed cross sections indicate a near shore slope of 20 to 25°. A detailed bathymetry chart taken during November 2016 is available for ready reference in the Office of the Superintending Engineer South Circle.

2.0 Aims & Objectives:

The objective of the study is to seek professional opinion regarding the tranquility of the harbour entrance and sediment transport, etc and to suggest measures for midcourse correction and permanent solution for system improvement and better utilization of resources. The main intention of this EOI is to receive concrete suggestions in respect of making the inlet channel at Muthalapozy Fishing Harbour navigable throughout the year and to maintain the channel sustainable with minimum dredging. Participants are expected to submit a report which details out program to maintain tranquility in the inlet channel like dredging, extension of breakwaters etc. Once the technology/methodology and the qualified bidders are identified, the Harbour Engineering Department will call for the detailed RFP.

3. TERMS OF REFERENCE

The terms of reference of the study are:-

- (a) To analyze the performance of the existing breakwater system
- (b) To analyze the wave tranquility at the harbour entrance and approach channel
- (c) To analyze the sediment transport near the harbour area and siltation at the harbor entrance and channel
- (d) To suggest short term measures for improvement of the tranquility at harbour entrance and channel.
- (e) To suggest permanent solution for tranquility at harbour entrance and channel.
- (f) To suggest a solution for siltation near the harbour area.
- (g) To suggest a solution for erosion near the harbour area.

4. TIME SCHEDULE

A draft appraisal report would be submitted within 3 months of the date of signing of agreement. The major findings of the draft report should be shared with the State Implementing Agency/HED. Feedback from the agency/State should be taken into account by the Consultant in the final report in a substantive manner and for the record. Agencies/States will be required to provide written response within 15 days of receipt of draft report. The consultant will submit the final report within 4 months of the date of signing of agreement, after taking into account the comments of the Ministry on the draft report. Four hard copies along with soft copy of the Final Review Report shall be submitted to HED within a period of four months from the date of signing of agreement.

5. INPUTS TO BE PROVIDED BY HED

HED will facilitate interaction of agency/individuals/consultants with the States/UTs as well as their visits to the sites. A representative of HED would accompany the team during the site visit. It will also provide copies of (i) Earlier Model study reports of fishing harbour, (ii) Shore line survey details, (iii) Bathymetry charts of the harbor area, (iv) Investigation data and details available under the Department. Additional data need to be acquired by the consulting organization. However facilities available under HED like current meter, wave rider buoy, etc can be utilized for investigation, free of hire charges.

6. DELIVERABLES

The Consultant shall submit a detailed report indicating the following:

- (i) Present Status of the scheme.
- (ii) Recommendations on further improvement of tranquility at harbour entrance with objective of meeting its targets.
- (iii) Recommendations on remedial measures for siltation problem at harbour basin and channel.
- (iv) Recommendations on improvement in infrastructure facilities of the harbour.
