



MINISTRY OF ENVIRONMENT
Male' Republic of Maldives

REQUEST FOR PROPOSAL

*Consultancy Services for conducting detailed investigations for establishing
flood mitigation measures in Hulhudhoo and Meedhoo, Addu City*

August 2019

Issued By:
Procurement Section
Ministry of Environment

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1 SCHEDULE OF CRITICAL DATES

ACTIVITY	ACTION DATE
Advertise	27 th August 2019
Release of Request for Proposal	27 th August 2019
Last day to register for the bid	09 th September 2019 before 2:00 PM
Last day to submit queries (by Consultants)	08 th September 2019 before 12:00 PM
Last day to send answers to queries (by Client)	09 th September 2019 before 2:00 PM
Deadline to submit proposals	10 th September 2019 before 12:00 PM

2 SUBMISSION REQUIREMENTS

Consultants must register for the bid. For registration, company name, company registration number, contact number and a contact email address must be sent to the email address below.

Consultants shall submit all the documents listed under Sections 6 (TECHNICAL PROPOSAL - STANDARD FORMS), Section 7 (FINANCIAL PROPOSAL - STANDARD FORMS). Furthermore, the following documents shall be submitted for the bids to be considered sufficiently responsive.

Please CHECK in the BOXES to confirm the submission of the required documents. (Failure to provide any of the documents mentioned below may result in disqualification)

a) If a company is showing interest;

- 1. Company Profile
- 2. Company Registration Certificate
- 3. Organization chart of the team proposed
- 4. EIA Registration Certificate of Lead EIA Consultant
- 5. CVs of the individuals (Inclusive of a copy of the National Identity Card / Passport)
- 6. List of related projects / consultancies completed by the company in the last 3 years.
- 7. Proposed equipment and methodology of works
- 8. Cost breakdown of major activities. The total cost shall be clearly indicated.
- 9. GST Registration Certificate

3 LETTER OF INVITATION

Subject: *Consultancy for detailed investigations for establishing flood mitigation measures in Hulhudhoo and Meedhoo, Addu City.*

1. The Ministry of Environment intends to procure the services of a *consultancy firm* to provide consultancy services for detailed investigations for establishing flood mitigation measures in Hulhudhoo and Meedhoo, Addu City.
2. The overall tasks to be undertaken not necessarily limited to, the following include;
 - Undertake literature review of existing information available on flood hazard risks of Hulhudhoo and Meedhoo, Addu City.
 - Undertake data collection relevant to the assignment.
 - Undertake a feasibility study to determine the most appropriate drainage option for the island.
 - Undertake the Environmental Impact Assessment process for the selected, most feasible drainage option for the island.
 - Develop detailed engineering designs and drawings to the selected, most feasible drainage option for the island.
 - Prepare draft tender documents for the construction of the proposed drainage option for the island.
3. The Government of Maldives, represented by Ministry of Environment (ME), now invites interested eligible consultants to submit their proposals according to the Request for Proposals (RFP). Interested parties must provide information indicating that they are qualified to perform the services (brochures, description of similar assignment, experience in similar conditions, availability of appropriate skills among staff, etc.). Parties may associate to enhance their qualifications.
4. The RFP document, in the English language will be available on the Ministry website www.environment.gov.mv.
5. Interested consultants may obtain further information on request by writing to the address below no later than 08th September 2019 before 12:00 PM.
6. The proposals are expected to be submitted to the following address by 10th September 2019 before 1:00 PM. Proposals will be opened in the presence of all the representatives of the respective bidders. All representatives of the bidders shall attend the bid opening.

The Procurement Unit
Ministry of Environment
Green Building, Handhuvaree Hingun,
Maafannu, Male', 20392,
Republic of Maldives
Fax: +960-3018-301
Email: procurement@environment.gov.mv

4 INSTRUCTIONS TO CONSULTANTS

2.1 Introduction

- a) The Client named in the **Data Sheet** will select a consultancy firm from those who submit their proposal for this request.
- b) The Consultants are invited to submit Technical Proposal and a Financial Proposal for the contract named in the **Data Sheet**. The Proposal will be the basis for contract negotiations and ultimately for a signed Contract with the selected Party.
- c) The Client will select a *consultancy firm* (the Consultants) from those who show interest to this call for proposals, in accordance with the method of selection specified in the **Data Sheet**.
- d) As a direct response to this document, interested parties must provide their detailed proposals for the “*Consultancy for detailed investigations for establishing flood mitigation measures in Hulhudhoo and Meedhoo*”. The standards and other statements on such provision and legislative compliance made by the parties as part of their proposals will form a binding part of the final contract document.
- e) The Consultants shall bear all costs associated with the preparation and submission of their proposals and contract negotiation. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultants
- f) The Client reserves the right to accept or reject any Proposal and to terminate the tendering process without awarding a contract. The parties should be aware that the Client will not be in a position to go forward with any proposals that fails to meet the statutory and essential requirements, set out in the Terms of Reference.

2.2 Conflict of interest

- a) A Party (including its Personnel) that has a business or family relationship with a member of the Client’s staff who is directly or indirectly involved in any part of (i) the preparation of the Schedule of requirements, (ii) the selection process, or (iii) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Government throughout the selection process and the execution of the Contract.
- b) The Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultants or the termination of its Contract.

2.3 Fraud and Corruption

The Client requires that all parties including Consultants and their agents (whether declared or not), personnel, sub-contractors, sub-Consultants, service providers and suppliers, observe the highest standard of ethics during the selection and execution its contracts. In pursuance of this policy, the Client:

- a) defines, for the purposes of this provision, the terms set forth below as follows:
 - i. “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii. “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
 - iii. “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv. “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
 - v. “obstructive practice” is
 - deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - acts intended to materially impede the exercise of the relevant government authorities’ inspection and audit rights.
- b) will reject a proposal for award if it determines that the recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c) will cancel the portion of the contract if it determines at any time that representatives of the Client or of a beneficiary were engaged in corrupt, fraudulent, collusive, or coercive practices during the selection process or the execution of that contract, without the Consultants having taken timely and appropriate action satisfactory to the Client to address such practices when they occur; and
- d) will take action against any Party or an individual at any time, in accordance with rules and regulations including by publicly declaring such Parties or individual ineligible, either indefinitely or for a stated period of time.

2.4 Proposal Validity

The Data Sheet indicates how long the Proposals must remain valid after the submission date. The Client will make its best effort to complete negotiations within this period. Should the need arise; however, the Client may request to extend the validity period of proposals. The Parties who agree to such extension shall confirm that they maintain the availability of the Professional staff nominated in the Proposal, or in their confirmation of extension of validity of the Proposal, The Consultants could submit new staff in replacement, who would be considered in the final evaluation for contract award. Consultants who do not agree have the right to refuse to extend the validity of their Proposals.

2.5 Language of Proposal

The proposal documents must be in written English.

2.6 Preparation of Proposals

- a) The Proposal, as well as all related correspondence exchanged by the Consultants and the Client, shall be written in the language (s) specified in the RFP.
- b) In preparing their Proposal, Consultants are expected to examine in detail the documents comprising the RFP. Material deficiencies in providing the information requested may result in rejection of a Proposal.
- c) Alternative professional staff shall not be proposed, and only one curriculum vitae (CV) may be submitted for each position.

2.7 Technical Proposal Format and Content

The Technical Proposal shall provide the information indicated in the following paras from (a) to (f) using the attached Standard Forms (4. Technical Proposal).

- a) A brief description of the Consultants' organization and an outline of recent experience of the Consultants and, in the case of joint venture, for each partner, on assignments of a similar nature are required in Form TECH-2. For each assignment, the outline should indicate the duration of the assignment, contract amount, and Consultant's involvement. Information should be provided only for those assignments for which the Consultants was legally contracted by the client as a corporation or as one of the major consultancy firm/organization within a joint venture. Assignments completed by individual Professional staff working privately or through other organisations cannot be claimed as the experience of the Consultants, or that of the Consultant's associates, but can be claimed by the Professional staff themselves in their CVs. Consultants should be prepared to substantiate the claimed experience if so requested by the Client.
- b) Comments and suggestions on the Terms of Reference including workable suggestions that could improve the quality/effectiveness of the assignment.

- c) A description of the approach, methodology and work plan for performing the assignment covering the following subjects: technical approach and methodology, work plan, and organization and staffing schedule. Guidance on the content of this section of the Technical Proposals is provided under Form TECH-3. The work plan should be consistent with the Work Schedule (Form TECH-6) which will show in the form of a bar chart the timing proposed for each activity.
- d) The list of the proposed professional staff team by area of expertise, the position that would be assigned to each staff team member, and their tasks (Form TECH-4).
- e) CV's of the professional staff signed by the staff themselves or by the authorized representative of the professional staff (Form TECH-5).
- f) The Technical Proposal shall not include any financial information. A Technical Proposal containing financial information may be declared non responsive.

2.8 Clarification and Amendment of RFP Documents

- a) During the RFP process, questions or clarifications regarding this RFP document must be requested in writing to the person and address stated in the **Data Sheet**.
- b) Any additional documentation issued by the Client during the tender process shall be deemed to form part of this RFP and shall supersede any part of the RFP where indicated. The Client may also exercise the option to extend the tendering period and/or postpone the proposal submission date in the event that subsequent documentation is issued.

2.9 Communications

Except as provided in the preceding section relating to questions about this RFP, No parties shall contact any officers, employees, or team members of Client with respect to this RFP. Any oral communication with a Client employee concerning this RFP is not binding on the Client and shall in no way alter any specifications, term or condition of this RFP or any contract documents.

2.10 Submission, Receipt, and Opening of Proposals

- a) The original proposal (Technical Proposal and Financial Proposal) shall contain no interlineations or overwriting, except as necessary to correct errors made by the Consultants themselves. The person who signed the proposal must initial such corrections.
- b) An authorized representative of the Consultants shall initial all pages of the original Technical and Financial Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal or in any other form demonstrating that the representative has been duly authorized to sign. The signed Technical and Financial Proposals shall be marked "Original".

- c) Consultants shall submit a “Compliance Statement” stating that the offer is made in accordance with the Request for Proposal. Consultants who offer additional or alternative conditions shall clearly state those in their proposals.
- d) The technical proposal and financial proposal must be submitted in ONE sealed envelope to the address indicated in the Data Sheet. The original and all copies of the Technical Proposal shall be clearly marked “Technical Proposal” Similarly, the original Financial Proposal shall be clearly marked “Financial Proposal” followed by the name of the assignment and shall bear the submission address, reference number and be clearly marked “Do Not Open, except in the Presence of the Official Appointed”. The Client shall not be responsible for misplacement, losing or premature opening if the outer envelope is not sealed and/or marked as stipulated. This circumstance may be case for Proposal rejection.
- e) The Proposals must be sent to the address indicated in the Data Sheet and received by the Client no later than the date specified in the Data Sheet, or any extension to this date. Any proposal received by the Client after the deadline for submission shall be returned unopened. The Client shall prepare a record of the bid opening: the name of the Bidder, the Price Proposal, any discounts, and alternative offers. A Copy of the record shall be provided to all bidders.

2.11 Evaluation of proposals

- a) From the time the Proposals are opened to the time the Contract is awarded, the Consultants should not contact the Client on any matter related to its Technical and/or Financial Proposal. Any effort by Consultants to influence the Client in the examination, evaluation, ranking of Proposals, and recommendation for award of Contract may result in the rejection of the Consultants’ Proposal.
- b) The evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Technical Requirements, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score (St). A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP, and particularly the Technical Requirements or if it fails to achieve the minimum technical score indicated in the evaluation criteria specified in the **Data Sheet**.
- c) The consultant is **REQUIRED** to submit Financial Proposal by using the Financial Proposal Submission Forms in FIN-1.
- d) The Evaluation Committee will correct any computational errors. When correcting computational errors, in case of discrepancy between a partial amount and the total amount, or between word and figures the formers will prevail.
- e) The **highest** evaluated Financial Proposal (Fm) will be given the maximum financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposal will be computed as indicated in the **Data Sheet**. Proposals will be ranked according to their

combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) indicated in the Evaluation Criteria: $S = St \times T\% + Sf \times P\%$. The Party achieving the highest combined technical and financial score will be invited for negotiations.

5 DATA SHEET

2.1.a	<p>Name of the Client: Ministry of Environment Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Republic of Maldives www.environment.gov.mv</p>
2.1.b	<p>Financial Proposal to be submitted together with Technical Proposal in one envelope on the same day and time specified.</p> <p><i>Please write name of the Consultancy assignment on the envelopes.</i> Name of the assignment is: "Consultancy for detailed investigations and design development for establishing flood mitigation measures in Hulhudhoo and Meedhoo, Addu City"</p>
2.1.c	<p>The method of selection would be in accordance to the procedures set out in the National Procurement Regulations issued by the Ministry of Finance and Treasury, Republic of Maldives.</p>
2.4 Validity	<p>Proposals must remain valid up to 90 days after the submission date.</p>
3.8 Clarifications and Amendments of RFP Documents	<p>Interested consultants may obtain further information on request by writing to the address below no later than 08th September 2019 before 12:00 PM.</p> <p>Procurement Section Ministry of Environment Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Republic of Maldives Email: procurement@environment.gov.mv www.environment.gov.mv</p>
3.10 Submission, Receipt, and Opening of Proposals	<p>The proposals are expected to be submitted to the following address by 13:00 hours local time on 10th September 2019, Tuesday.</p> <p>Procurement Section Ministry of Environment Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Republic of Maldives www.environment.gov.mv</p>

<p>3.11 Evaluation of Proposals</p>	<p>Criteria, sub-criteria, and point system for the evaluation of Full Technical Proposals are:</p> <p style="text-align: center;"><u>Points</u></p> <p>(A) Company Profile and Experience: [100]</p> <p>Firms experience in similar projects [40] (5 points for each similar project)</p> <p>Value of previous assignments in the past 5 years [40] (5 points for each project above MVR 500,000)</p> <p>Organisational structure [20] (5 points for each staff and 20 if staffing requirement is met)</p> <p style="text-align: right;">Total A = []</p> <p>(B) Project Team [100]</p> <p>Team leader (C₁) I [30]</p> <p>Environmental Consultant (C₂) II [25]</p> <p>Surveyor (C₃) III [15]</p> <p>Civil/Environmental Engineer (C₄) IV [30]</p> <p>The number of points to be assigned to each of the above positions or disciplines shall be determined considering the following three sub-criteria and relevant percentage weights:</p> <p>Education and qualifications a [25%] (15 % for Bachelors, 25 % for Master's and above)</p> <p>Experience in undertaking projects of similar nature b [65%] (13 % for each similar project completed)</p> <p>Experience in the region and language c [10%] (2 % for each project completed in the Maldives)</p> <p style="text-align: right;">Total C = []</p> <p>Total (B) = C₁/100*[I] + C₂/100*[II] + C₃/100*[III] + C₄/100*[IV]</p> <p>(C) Approach, Methodology & Work plan [100]</p> <p>Approach & Methodology [50] (25 % for demonstration of an understanding of the objective of the assignment in the context of the project) (25 % for proposal on methodology on carrying out the activities)</p> <p>Work plan of the Assignment [50] (20 % for the proposed main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client) and delivery dates of the reports) (15 % for work plan being consistent with proposed Technical Approach and Methodology) (15 % for Work schedule)</p> <p style="text-align: right;">Total D = []</p>
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$$\text{Technical Score (St)} = A/100*[W1] + B/100*[W2] + D/100*[W3]$$

Weights Distribution

W1	Company Profile	[20]
W2	Project Team	[50]
W3	Approach & Methodology	[30]

The minimum technical score (St) required to pass is: 60 Points

The formula for determining the financial scores is the following:

$S_f = 100 \times F_m / F$, in where S_f is the financial score, F_m is the lowest price and F the price of the proposal under consideration.

The weights given to the Technical and Financial Proposals are:

$T = [0.6]$, and $P = [0.4]$.

6 TECHNICAL PROPOSAL - STANDARD FORMS

FORM TECH-1: Technical Proposal Submission Form

[Location, Date]

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consultancy service for “*Consultancy for detailed investigations for establishing flood mitigation measures in Hulhudhoo and Meedhoo, Addu City*” in accordance with your Request for Proposal dated [Insert Date] and our Proposal. We hereby submit our Proposal, which includes this Technical Proposal, and our Financial Proposal sealed under a separate envelope.

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

If negotiations are held during the period of validity of the Proposal, we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We undertake, if our Proposal is accepted, to initiate the services and fulfill the terms and conditions related this contract.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

FORM TECH-2: Consultant's Organization and Experience

A - Consultant's Organization

[Provide here a brief description/background (Include Organizational chart) of your (if a company/firm) your organization and each associate for this assignment.]

B - Consultant's Experience

*[Using the format below, provide information on each contract/assignment for which (if a company/firm) your organisation, individually as a corporate entity or as one of the major companies within an association, for carrying out **similar consultancy services**.]*

Contract/Activity Name:	Contract Value (in MVR):
Country: Location within country:	Duration of assignment/activity (months):
Name of Client:	Total no. of staff-months of the assignment:
Address:	Start date (month/year): Completion date (month/year):
Name of associated Parties, if any:	NO of professional staff-months provided by associated Consultants:
Narrative description of Activities/Project:	
Description of actual services provided by your staff within the Activities:	

Firm's Name: _____

FORM TECH-3: Description of Approach, Methodology and Work plan for performing the Assignment

[Technical approach, methodology and work plan are key components of the Technical Proposal. You are suggested to present your Technical Proposal divided into the following three chapters:

- a) Technical Approach and Methodology,*
- b) Work Plan, and*
- c) Organization and Staffing,*

a) Technical Approach and Methodology. In this chapter you should explain your understanding of the objectives of the assignment, approach to carry out the design services for the island and obtaining the expected output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them. You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach.

b) Work Plan. In this chapter you should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan.

c) Organization and Staffing. In this chapter you should propose the structure and composition of your team. You should list the main disciplines of the assignment, the key expert responsible, and proposed technical and support staff.]

d) Proposed equipment. In this chapter you should propose the details of the equipment that will be used during the assignment. Indication of lease need to be made if the equipment is borrowed from another party. A confirmation letter by the bidder need to be submitted to confirm the availability and security of the equipment's proposed to be utilized.

FORM TECH-4: Team Composition and Task Assignment

<i>Professional Staff</i>				
Name of Staff	Organisation	Area of Expertise	Position Assigned	Task Assigned

The completion certificate of the Projects needs to be attached for proof and confirmation of the listed projects.

FORM TECH-5: Curriculum Vitae (CV) for proposed Professional Staff

1. **Proposed Position** [*only one candidate shall be nominated for each position*]: _____

2. **Name of Firm / Individual submitting the proposal** [*Insert name of firm proposing the staff*]: _____

3. **Name of Staff** [*Insert full name*]: _____

4. **Date of Birth:** _____ **Nationality:** _____

5. **Education** [*Indicate college/university and other specialized education of staff member, giving names of institutions, degrees obtained, and dates of obtainment*]: _____

6. **Membership of Professional Associations:** _____

7. **Other Training** [*Indicate significant trainings since degrees under 5 - Education were obtained*]: _____

8. **Countries of Work Experience:** [*List countries where staff has worked in the last ten years*]: _____

9. **Languages** [*For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing*]: _____

10. **Employment Record** [*Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.*]:

From [Year]: _____ To [Year]: _____

Employer: _____ Positions held: _____

A copy of the National Identity Card/Passport need to be attached for each individual.

FORM TECH-6: List of related projects completed

Name of the Project	Name of the Client	Cost of the Project	Assignment Signed Date	Assignment Completed Date

FORM TECH-7: Work Schedule

The consultant shall complete the assignment and the deliverables as indicated in the Terms of References.

	1st	2nd	10th	20th	30th	60th
Activity (Work)														

7 FINANCIAL PROPOSAL - STANDARD FORMS

FORM FIN-1: Financial Proposal Submission Form

[Location, Date]

To: [Name and address of Client]

Dear Sirs,

We, the undersigned, offer to provide consultancy services for “*Consultancy for detailed investigations for establishing flood mitigation measures in Hulhudhoo and Meedhoo, Addu City*” in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal. Our attached Financial Proposal is for the sum of [Insert amount(s) in words and figures¹] which is inclusive of the local taxes.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

1 Amounts must coincide with the ones indicated under financial proposal in Form FIN-2.

FORM FIN-2: Financial Proposal

	Description	Cost (Maldivian Rufiyaa)
1	Inception Report	
2	Report on existing environment	
3	Feasibility report	
4	Environmental Impact Assessment Report	
5	Final Design and BOQ	
6	Development of draft construction tender documents	
	Sub Total :	
	GST :	
	Total with GST:	

- *This form highlights the major areas of the assignment. The consultancy firm may provide a more detailed proposal elaborating the different components.*
- *The consultancy firm is to submit copy of the GST registration certificate along with the financial proposal.*
- *[If the firm is subject to GST as per MIRA Regulations and Guidelines. The GST Registration Certificate and GST quote in the financial proposal for each respective island need to be included]*

Terms of Reference

BACKGROUND

The Republic of Maldives is a low lying, atoll based, archipelagic nation in the central Indian Ocean. It comprises 1,190 islands grouped into 26 atolls that together occupy a land area of 298 km² and form a chain over 820 km in length, spread over an area of around 90,000 sq km. With a total population of 341,256, it is the smallest Asian country in terms of area and population. It is also amongst the most susceptible to climate change. The country has an average elevation of 1.5 meters above sea-level. The two most important sectors of the economy are tourism and fisheries which contribute nearly 80% of the country's Gross Domestic Product (GDP).

Vulnerability of Maldives

The Maldivian islands are regularly exposed to multiple natural hazards and the disaster risk scenario for the country is described as “moderate” due to a low probability of hazard occurrence and high vulnerability from exposure to geographical, topographical and socio-economic factors. Its unique geography makes this archipelagic small-islands nation particularly vulnerable to projected adverse consequences of climate change, including sea-level rise, as well as increases in sea surface temperature, ocean acidificationⁱ and frequency/intensity of droughts and storms. For example, sea levels are projected to rise within the range of 10 to 100 centimeters by year 2100, threatening submergence of the entire country in the worst-case scenario. Extreme rainfall events are likely to occur at twice the current frequency by 2050. Higher ocean temperatures increase the rate of coral bleaching and increase the risk of massive coral die-off during the local ocean temperature spikes that occur during El Niño events. Within the archipelago some islands are more vulnerable to natural causes when compared to other islands. Moreover, various human intervention have had a compounded effect on accelerating this condition.

Vulnerability of Hulhudhoo and Meedhoo

The island of Hulhudhoo and Meedhoo is located on the northeastern point of Addu City. In terms of geographic coordinates, it is located at 0°35'14.08"S and 73° 13'56.21"E. According to 2014 census, the resident population of the island is 3,461. The total land area of the island is 3.2km².

Flooding in the island has caused numerous damages to individual households and property and to the island as a whole, for example several severe rainfall events has led to septic tank overflow leading to ground water pollution. Thus, Ministry of Environment (hereinafter referred to as the Ministry) is seeking consultancy service to mitigate the flooding issues of Hulhudhoo and Meedhoo, Addu City through design of a proper drainage system in the island based on in depth analysis of the existing situation in the island.

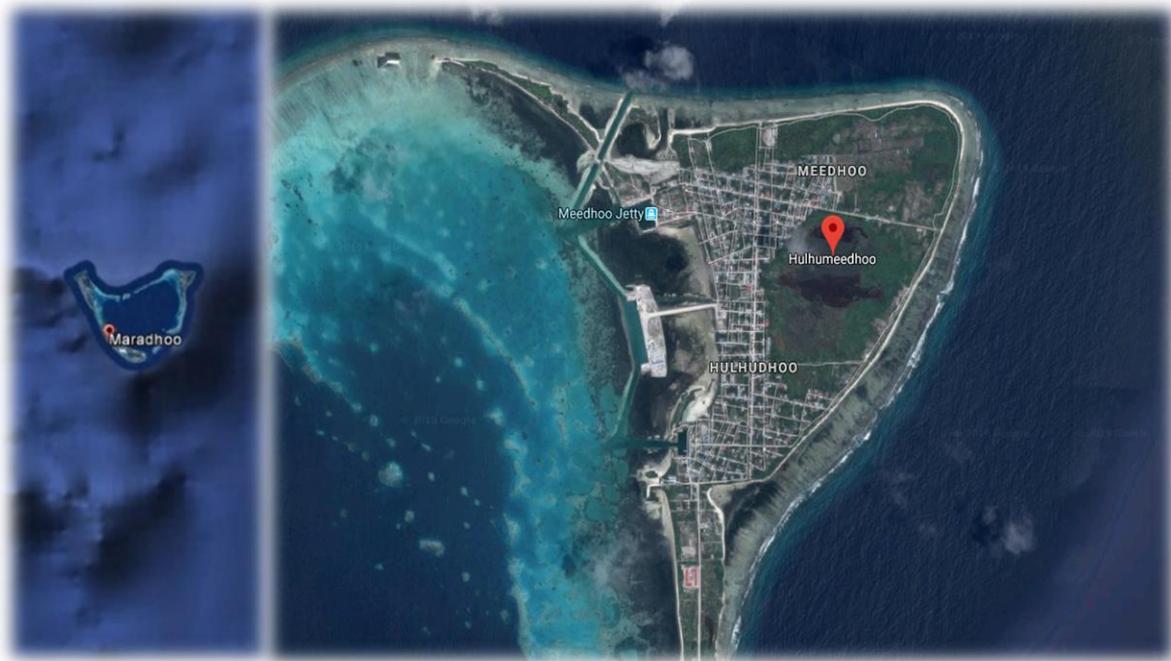


Figure 1: Location of Hulhudhoo and Meedhoo, Addu City

Flooding in the islands have caused numerous damages to individual households, property and to the island as a whole. Hulhudhoo and Meedhoo faces problems of flooding in the islands even with light rainfall, in addition to this several severe rainfall events have led to septic tank overflow leading to ground water pollution. Thus, Ministry of Environment (hereinafter referred to as the Ministry) is seeking consultancy service to mitigate the flooding issues of Hulhudhoo and Meedhoo of Addu City through design of a proper drainage system in the islands based on in depth analysis of the existing situation in the islands.

A. OBJECTIVES OF THE ASSIGNMENT

Given the context of Hulhudhoo and Meedhoo as one of the most vulnerable islands in the whole country to the impacts of climate change, especially with respect to flooding due to increased rainfall, the main objective of the assignment is to propose effective storm water drainage options, based on the outcome of the detailed investigation. The specific tasks associated with this assignment include the following:

- Undertake literature review of existing information available on flood hazard risks of Hulhudhoo and Meedhoo.
- Undertake data collection relevant to the assignment.
- Undertake a feasibility study to determine the most appropriate drainage option for the island.
- Undertake the Environmental Impact Assessment for the selected, most feasible drainage option for the island.
- Develop detailed engineering designs and drawings for each island to the selected, most feasible drainage option for the island approved by the Ministry of Environment.
- Develop draft tender documents for construction tendering of the final approved design including bid document, bill of quantities and detailed engineering drawings.

B. SCOPE OF WORKS

Under the guidance and coordination with the Ministry, the consultant will work to deliver the following sub-component activities in consultation with Addu City council and the community. The specific tasks for the assignment include the following:

1. Undertake literature review of existing information available. When undertaking this task include existing studies undertaken for the island with respect to hazard vulnerability, specifically flooding, attaining historical and current rainfall data for the region, any historical and current data on flooding associated with storm surges, any existing survey maps and data from Environmental Impact Assessment reports, and other relevant documents
2. Data collection including rainfall data to assess the state of the existing environment, fill information gaps and to get most up to date information. This shall include topographic survey, hydro-geological studies of the island (including but not limited to groundwater assessment including groundwater level and quality, soil profiles, and

studies to determine soil percolation rate & infiltration rate), shoreline and vegetation line mapping and community consultation to attain information on flooding frequency and causes and to get their views on potential solutions. Based on the collected data, flood risk maps for the island need to be developed.

3. A feasibility study to determine best possible drainage option for the island. At least three options need to be presented excluding the no project option and each option needs to be compared taking into account financial, social and environmental context. A cost benefit analysis needs to be undertaken for each selected option. When undertaking the feasibility study, based on the base map created in task 2 above, maps need to be developed for various future climate scenarios and the robustness of the different proposed options in each of these climate scenarios needs to be investigated. In addition, the system needs to be tested for various extreme weather events, for example one in twenty five year, one in 50 year, flood events. The consultant shall recommend the best possible option based on this feasibility study.
4. Prepare a detailed Environmental Impact Assessment for the most feasible option selected above through task 3 and submit to EPA for approval. This task specifically includes the following sub-tasks.
 - Undertake the application process for the EIA works of the assignment.
 - Undertake the scoping or screening wherever applicable for the assignment.
 - Undertake field data collection survey and develop the EIA report as per the approved Terms of Reference by EPA after the scoping meeting.
 - Submit the draft EIA Report to Ministry for comments.
 - Submit the final EIA Report to EPA and get approval/decision statement.
 - Undertake submission and provide any clarifications where as necessary to the submitted EIA.
 - Accommodate any request by EPA for any additional information regarding the submitted EIA report.
5. Develop detailed engineering design and drawing for the most feasible option selected through task 3. A rough schedule of implementation of the project needs be proposed with the detailed engineering design. This task should be undertaken concurrently with

the EIA process reflected in task 4. The recommendations proposed in the approved EIA should be incorporated to the final design prior to submission to Ministry for approval.

6. Develop draft tender documents for construction tendering of the final approved design. The Consultants will identify with Ministry of Environment how many contractors are needed for works construction and will prepare tender documents accordingly including:

Volume 1: Tender and Administrative Documents

Volume 2: Technical Specifications and Schedules

Volume 3: Drawings and Layouts

Volume 1 will include at least the following:

- **Invitation to Tender;**
- **Description of the Works and Quantities;**
- **Instructions to Bidders;**
- **Conditions of Contract, Form of Tender (and Appendix);**
- **Bill of Quantities and Schedules;**
- **Form of Contract Agreement, Form of Tender Security, Form of Performance Security, Form of Guarantee for advance payment**

Conditions of Contract will be incorporated as the final legal agreement to be drawn up between the Contractor and the Client. The Conditions of Contract would be drawn up in close co-operation with the Client and would incorporate such special clauses as may be required.

The **Bill of Quantities and Schedules** will be prepared for all the tender packages as a basis for tendering and for payment under the Contract. Civil Engineering Standard method of measurement shall be recommended wherever possible.

Volume 2 will include Technical Specifications and Schedules. Technical Specification will be prepared for all items to be constructed, supplied or erected. Materials and work specifications will cover all aspects of materials and equipment to be provided.

The Consultants will use local or national standards where possible. Where no suitable local or national standards exist then international standards such as BS, ASTM, ISO etc. will be used.

Where possible, the specification of materials (locally produced or imported) will be specified. Construction Schedules will be issued in details.

Volume 3 will be based on part 3 of the detailed design. All drawings will show clearly defined contract limits relating to the various divisions of works. Drawings will include general arrangement drawings, sections, elevation, typical details and typical reinforcement detailed. In addition, detailed reinforcement drawings and bar schedules will be included in the tender documents. Drawings for mechanical and electrical equipment will show main outlines and leading dimensions in sufficient details for the manufacturers to design the adequate equipment.

Outputs of Phase A3:

Report III including the tender documents including:

- Volume 1: Administrative and tender documents;
- Volume 2: Technical specifications and schedule;
- Volume 3: Drawings and layouts

C. OUTPUTS/DELIVERABLES

Please note that the timings are approximate depending on the actual date of the commencement of the assignment. The deliverables stated below should include, but not be limited to, the corresponding items noted in the Scope of Works above.

- (i). An Inception brief detailing out the specific tasks to be carried out, a time-based work plan, work methodology and other appropriate technicalities for conducting the assignment (to be submitted to the Ministry). The Inception brief shall be submitted no later than **02** weeks after the commencement of the assignment. The Inception brief shall also identify any constraints the consultant/firm foresees with delivering the services and propose actions to be implemented to overcome the constraints identified.
- (ii). Report on existing environment. A report on existing environment needs to be prepared based on the literature review and field surveys undertaken. This report needs to be submitted no later than **06** weeks after the commencement of the assignment.
- (iii). Feasibility Study report. A feasibility study report, exploring three different options proposed by the consultants. Development of a concept design based on the approved option needs to be prepared and submitted, no later than **10** weeks from the commencement of the assignment.

- (iv). Environmental Impact Assessment Report. Upon approval of the most feasible option from above by the Ministry, the EIA consultant must commence the EIA process. A full blown EIA needs to be prepared for the selected option and submitted to EPA. In addition to the preparation of EIA, it is the responsibility of the EIA consultant to undertake all tasks associated with the EIA process, including but not limited to, EIA application submission, follow up on scoping meeting, draft TOR submission, and follow up on TOR approval, submission of the final EIA report, obtain and address the queries made by the EIA reviewers and follow up on the EIA review and approval process. The draft EIA report needs to be submitted to the Ministry for comments prior to making the final submission to EPA. The final EIA Report needs to be submitted to EPA no later than **10** weeks from the commencement of this assignment.
- (v). Report, drawings, specifications of the detailed engineering design. Upon approval of the most feasible option from above by the Ministry, the detailed engineering design and drawings, along with the BOQ need to be developed for this option. This task should be undertaken concurrently with the EIA process reflected in task 4. The recommendations proposed in the EIA should be incorporated to the final design. The report highlighting the detailed engineering design and drawings needs to be submitted no later than **14** weeks from the commencement of the assignment.
- (vi). Tender documents. The draft tender documents with all the volumes highlighted in task 6 must be submitted no later than **16** weeks from the commencement of the assignment.

D. REPORTING OBLIGATIONS

All reports and documents needs to be submitted to the Ministry by the specified due date for each deliverable. All reports and documents needs to be first submitted in draft format as an electronic copy. The Client will review the reports and documents and provide comments to the consultant as soon as practicable. The consultant will address the comments of Client and submit as Final Reports within a week of receipt of comments. Following approval of the drafts, all final reports and documents should be submitted in English in 2 (two) hard copies and an electronic copy on CD. Designs shall be submitted in both AutoCAD and PDF format.

E. CONSULANT STAFFING REQUIREMENTS

Shortlisted consultants will have the opportunity to propose staff to support their technical proposal in the response to the Request of Proposals. The following table identifies the minimal staffing requirements and their qualification.

Professional Staff	Area of Expertise	Experience
Team leader	<p>Minimum Master’s degree in environmental science, geography, hydrology, earth science or a related field.</p> <p>Experience in undertaking hazard and risk assessment.</p> <p>Previous relevant experience working in the Maldives.</p>	7 – 12 years
Environmental Consultant (Registered EIA Consultant)	<p>Minimum Bachelor’s degree in Environmental Sciences, Environmental Management, Environmental Engineering or a related field.</p> <p>Demonstrated experience in assessing natural hazard mitigation, environmental monitoring in similar or related projects</p> <p>Registered as a Permanent EIA consultant in the EIA consultant register of Environmental Protection Agency of Maldives</p> <p>Demonstrated experience in undertaking community consultations</p>	5-10 years

	<p>and liaising with the communities in undertaking development projects.</p> <p>Previous relevant experience working in the Maldives.</p>	
Surveyor	<p>Minimum Bachelor's degree in the Surveying or a related field.</p> <p>Demonstrated Experience in undertaking topographical and hydrological surveys.</p> <p>Previous relevant experience working in the Maldives.</p>	5 - 10Years
Civil /Environmental Engineer	<p>Minimum Bachelor's degree in civil engineering, Coastal engineering Water engineering or a related engineering field.</p> <p>Experience in undertaking cost benefit analysis of infrastructure development projects</p> <p>Previous experience in developing detailed designs for drainage in low lying coralline islands, including costing for such projects.</p> <p>Previous relevant experience working in the Maldives.</p>	5-10 years

In addition, the following skills and knowledge will be considered an asset for all the experts in the consultant team:

- (i). Knowledge of issues around environmental sustainability and climate change adaptation in Maldives;

- (ii). A degree of knowledge of Hydrology and ability to investigate through analysis of meteorological data.
- (iii). Good organizational skills and ability to help deliver and report on delivery of indicators;
- (iv). Computer literacy and good word processing skills;
- (v). Excellent written and oral English communication skills;

The Consultant team will also be expected to include at least one person who is fluent in reading and writing Dhivehi to facilitate the work of the team.

F. SCHEDULE FOR THE ASSIGNMENT

Estimated Duration of the assignment is **16** weeks from the commencement of the consultancy.

G. FACILITIES TO BE PROVIDED BY THE CLIENT

The Ministry will coordinate closely with the consultant during the process. The Ministry will assign a project specific counterpart to liaise with the consultant. This counterpart may also join some field visits and review progress from time to time. The Ministry will ensure that access to data and reports that are identified in the various tasks will be provided to the consultant in a timely manner. The Ministry will facilitate meetings with various ministries and government agencies and other stakeholders, including the local government officials to enable productive field visits, workshops and consultations.
