

## **Terms of Reference for consultancy services to conduct ecological surveys of 16 sites of the Ari Atoll**

### **1. Background**

The government of Maldives has pledged to bring 1 island, 1 reef and 1 mangrove under a protected area regime and has committed to establish better management regimes for these areas which is also reflected in the present Strategic Action Plan. In an effort to strengthen the database and knowledge of important biodiversity areas of the Maldives for better management and decision making, Ministry of Environment has initiated a process of conducting baseline ecological surveys of selected sites.

In this regard, Ministry of Environment is seeking consultancy services to conduct detailed ecological surveys of 16 selected sites in the North and South Ari Atoll of the Maldives.

### **2. Scope of Work**

- Conduct detailed baseline ecological surveys of the 16 selected marine sites. Details of the selected sites is given in the Annex I.
- Present a methodology/ protocol of the surveys to be approved by the Ministry of Environment. Further details about the methodology of the survey is given in Annex II
- Collect and collate raw and synthesized data collected through the survey, including representative photography and videography.
- Produce detailed individual and a combined reports on the ecological surveys, including a consolidation of important findings.
- Produce detailed, Geographically reference maps of the survey sites and submitted in original (including shape files), pdf and photo format
- Integrate the data collected into the national coral database, <https://coraldatabase.gov.mv/>

### **Key deliverables:**

The consultants are expected to to deliver the following deliverables:

1. Detailed work plan and methodology/protocols of the survey
2. 16 ecological survey reports (1 for each site and 1 combined report)
3. All raw and synthesized data, maps, videos and photographs
4. Drone maps of terrestrial site including but not limited to Orthomosaic map, Digital Surface Model (DSM), Digital Terrain Model (DTM) and all raw images
5. Integrate the data collected into the national coral database, <https://coraldatabase.gov.mv/>

### **The consultant should ensure that:**

- Highest standards of confidentiality are maintained
- The data collected and maps are produced in a raw and processed and editable formats that can be used for future analysis.
- The process of data collection is participatory and transparent while protecting the rights of the individuals with all necessary permits attained.



- All works are completed in a timely manner in close collaboration with the Ministry of Environment
- The laws and regulations of the Maldives are complied with and safety and health is not compromised of anyone involved in the survey.

#### **4. Qualification Criteria:**

##### **4.1 Consultancy team**

To be eligible for this assignment, the consultancy team should have at least three members meeting the following criteria;

##### 4.1.1 Surveyor(s)

- Minimum of one member of the team should be assigned as the Lead Surveyor
- The ‘Lead Surveyor’ should have a University degree in Surveying and/or Research or related field to carry out the works as included in the scope of the work.
- Minimum 3 years of experience in environmental surveying (marine and terrestrial)
- Previous experience in surveying in the Maldives , and/ or participation in national level surveying programs/expeditions is an asset
- Proof of excellent knowledge on biodiversity and ecosystem services and ecological data analysis
- Fluent in written and spoken Dhivehi and English;
- Excellent interpersonal skills and demonstrated ability to communicate with project stakeholders is essential.
- Ability to manage and work with a multidisciplinary team;
- Ability to seek and apply knowledge, information and best practices from multiple sectors;
- Willingness to travel and carry out field-based work as required

##### 4.1.2 Environmental Science Expert

- Minimum of one member of the team should be assigned as the Environmental Science Expert.
- The ‘Environmental Science Expert’ should have a University degree in Environmental Science or related field to carry out the works as included in the scope of the work.
- Minimum 5 years of experience in conducting environmental assessments (marine and terrestrial)
- Demonstrated ability to understand the Maldivian ecosystems, biodiversity and policies and actions to meet international and national conservation targets.
- Proof of excellent knowledge on biodiversity and ecosystem services and ecological data analysis
- Fluent in written and spoken Dhivehi and English;
- Excellent interpersonal skills and demonstrated ability to communicate with project stakeholders is essential.
- Ability to manage and work with a multidisciplinary team;
- Ability to seek and apply knowledge, information and best practices from multiple sectors;
- Willingness to travel and carry out field-based work as required

##### 4.1.3 GIS Expert

- Minimum of one member of the team should be assigned as the GIS Expert.

- The ‘GIS Expert’ should have a University degree in Remote Sensing or Mapping or GIS or a related field to carry out the works as included in the scope of the work.
- Minimum 3 years of experience in conducting environmental assessments (marine and terrestrial)
- Proof of knowledge on data processing, evaluation and organizing the collection, storage, usage data and visualization; Ability to solve GIS-specific problems and convey GIS information to non-GIS people
- Previous experience in GIS mapping for national level programs is an asset.
- Fluent in written and spoken Dhivehi and English;
- Excellent interpersonal skills and demonstrated ability to communicate with project stakeholders is essential.
- Ability to manage and work with a multidisciplinary team;
- Ability to seek and apply knowledge, information and best practices from multiple sectors;
- Willingness to travel and carry out field-based work as required

#### 4.2 Technical Resources

- Facilities, equipment and software readily available for ecological surveys
- Other technical resources required to complete the tasks in this TOR,

#### 5. Collaboration, Guidance and Supervision

- The Consultant will be contracted by the Ministry of Environment and is fully accountable to the Ministry on the quality and timely delivery of their work under the contract.
- The consultant will follow the guidance of the project coordinator from the Ministry towards delivery of the outputs of the consultancy.

#### 6. Duration of the Assignment

- The consultant is required to complete all the tasks of the project within 03 calendar months from the date of signing the contract.

#### 7. Remuneration

- Applicants must submit their financial proposal along with the Expression of Interest. Remuneration will be based on successful deliberations of all deliverables as per the “Payment Structure” outlined in Section 8 of this TOR. The consultant is however, expected to deliver the full scope of work under Section 2 “Scope of Work” of this TOR for final and full payments.

#### 8. Payment Structure

	<b>Deliverables</b>	<b>Payment Structure</b>
1	Upon submission and approval of the detailed work plan and methodology/protocols of the survey	20%
1.	Upon submission and approval of 16 ecological survey reports (1 for each site and 1 combined report)	50%
2	Upon submission and acceptance of all raw and synthesized data, maps, videos and photographs	30%

## 9. Selection Criteria

	<b>Criterion</b>	<b>Weightage</b>
1	<b><u>Expertise of the team members</u></b> Minimum criteria : Specified in 4.1	<b>30</b>
	1.1 Surveyor(s)	10
	1.2 Environmental Science Expert	10
	1.3 GIS Expert	10
2	<b><u>Availability of the needed facilities, equipment and software readily available for ecological surveys</u></b> Minimum criteria: Proof of presence of facilities, equipment and software for Transportation, survey equipment and data processing and mapping software	<b>10</b>
	2.1 Details of Transportation under current situation	3.33
	2.2 Details of available survey equipment to be used in the survey	3.33
	2.3 Details of available data processing and mapping software to be used	3.33
3	<b><u>Proposed Methodology</u></b> Minimum criteria: the proposed methodology should fulfill the criteria and requirements detailed in Annex II.	<b>10</b>
4	<b><u>Previous experience in similar works</u></b> <ul style="list-style-type: none"> <li>• Minimum criteria: The team should have conducted ecological surveys of 5 sites in the Maldives including marine and terrestrial areas.</li> <li>• 2 marks for each reference letter of the similar works completed</li> </ul>	<b>10</b>
5	<b><u>Financial Proposal</u></b> Sf = $40 \times F_m / F$ , in which Sf is the financial score, Fm is the lowest price and F the price of the proposal under consideration.	<b>40</b>

## 10. Intellectual Property

The Ministry of Environment will have copyrights of all data, photos, videos and information collected for the purpose of this consultancy. The Ministry of Environment will have the full rights to all products, drafts and final deliverables of the consultancy. The consultant will not have any right to the use of any component of this consultancy including the raw and synthesized data outside the scope of this consultancy without prior written consent from the Ministry of Environment.

## 11. Additional information

Environment Department of the Ministry of Environment has overall responsibility of the management of the consultancy. The consultant is expected to work closely with the Ministry during the course of the assignment.

The consultant will be working independently using their own space and resources, however, where necessary Ministry will facilitate acquiring necessary permissions.

## 12. Application

The applicants shall submit their applications in a sealed envelope along with the following documents

- A commitment letter from the team leader who will be answerable to the Ministry on behalf of the team (Annex III)
- Work plan (example in Annex IV)
- Proposed methodology of the survey (detailed in Annex II)
- Financial proposal (inclusive of all taxes)
- Detailed Curriculum Vitas of the team members
- Proof of similar assignments, experience. All assignments completed above, MVR 35,000 value, should have a reference letter of completion attached.
- Copies of Accredited certificates
- Individuals applying should submit the ID cards of all team members.
- Consultancy firms applying should submit: Business registration and Tax registration

## 13. Submission

Applications must be submitted to the Ministry of Environment as hard copy before 1100hrs on 24 March 2021. Bids will be opened at the same time in the location. The application should be titled as follows:

**“Consultancy services to conduct ecological surveys of 16 sites of Ari Atoll”**

*Procurement Unit*

*Ministry of Environment*

*Green Building, Handhuvaree Hingun,*

*Maafannu, Male’, 20392,*

*Republic of Maldives*

For further information email to [procurement@environment.gov.mv](mailto:procurement@environment.gov.mv), (CC) [environment@environment.gov.mv](mailto:environment@environment.gov.mv), before 20 March 2021

## Annex I

### SITE DETAILS

	Name of the survey site	Atoll	Type of the area	GPS Location of the boundary points	Estimated area of survey (ha)
1	Gangehi Maavaru and Gangehi Kandu	North Ari Atoll	Potential Protected area (Marine)	4°12'24.58"N, 72°44'13.97"E 4°12'31.41"N, 72°43'42.21"E 4°13'40.58"N, 72°43'53.23"E 4°13'32.10"N, 72°44'26.34"E	219
2	Velidhoo-Dhigga and Genburu Gau	North Ari Atoll	Potential Protected area (Marine)	4° 8'41.53"N, 72°48'15.40"E 4° 9'14.09"N, 72°50'43.98"E 4°11'14.13"N, 72°50'18.55"E 4°10'5.27"N, 72°46'55.21"E	1961
3	Maalhos Thila and Ranfaru	North Ari Atoll	Potential Protected area (Marine)	3°58'59.91"N, 72°42'50.83"E 3°58'58.49"N, 72°42'43.87"E 3°59'6.81"N, 72°42'34.73"E 3°59'23.80"N, 72°42'32.80"E 3°59'29.48"N, 72°42'49.79"E 3°59'20.46"N, 72°42'51.63"E 3°59'13.93"N, 72°42'44.33"E 3°59'5.78"N, 72°42'46.04"E	34
4	Fushi / Ukulhas Fushi (Sand Bank and House Reef)	North Ari Atoll	Potential Protected area (Marine and Terrestrial)	4°12'57.72"N, 72°53'20.57"E 4°12'39.08"N, 72°53'5.12"E 4°14'22.90"N, 72°51'9.43"E 4°14'39.39", 72°51'23.74"E	340
5	Kashibeyru thila	North Ari Atoll	Existing Marine Protected Area	4° 6'26.68"N 72°55'43.95"E 4° 6'29.66"N 72°57'38.46"E 4° 4'26.48"N 72°57'35.45"E 4° 4'26.49"N 72°55'42.14"E	75
6	Maayaa Thila	North Ari Atoll	Existing Marine Protected Area	4° 6'11.35"N 72°51'19.19"E 4° 4'51.75"N 72°52'25.82"E 4° 3'47.24"N 72°51'7.24"E 4° 5'4.16"N 72°49'56.47"E	81
7	Orimas Thila (Magau Thila)	North Ari Atoll	Existing Marine Protected Area	3°58'58.21"N 72°55'14.07"E 3°57'13.20"N 72°57'1.78"E	225



				3°57'28.87"N 72°55'15.70"E 3°57'18.80"N 72°58'24.94"E	
8	Mushimasmigili thila (Fish Head)	North Ari Atoll	Existing Marine Protected Area	3°56'42.34"N 72°54'38.56"E 3°56'31.85"N 72°55'31.50"E 3°55'51.55"N 72°54'27.82"E 3°55'39.26"N 72°55'19.40"E	87
9	Ali Koi Island and House Reef	North Ari Atoll	Potential Protected area (Marine and Terrestrial)	3°56'30.49"N, 72°52'53.70"E 3°56'34.72"N, 72°52'35.59"E 3°56'42.91"N, 72°52'41.12"E 3°56'39.34"N, 72°52'56.51"E	15
10	Kalhahan'dhi Huraa and Maavaru Faru	South Ari Atoll	Potential Protected area (Marine)	3°48'28.77"N, 72°43'8.82"E 3°47'39.44"N, 72°42'44.61"E 3°47'41.25"N, 72°42'3.79"E 3°48'34.58"N, 72°42'3.12"E	264
11	Lonuboi Island and House Reef	South Ari Atoll	Potential Protected area (Marine and Terrestrial)	3°35'55.99"N, 72°54'16.78"E 3°35'50.28"N, 72°53'52.22"E 3°36'13.37"N, 72°53'46.22"E 3°36'19.34"N, 72°54'13.44"E	60
12	Bulhaa Lhohi Island and House Reef	South Ari Atoll	Potential Protected area (Marine and Terrestrial)	3°44'45.71"N, 72°43'33.98"E 3°44'33.87"N, 72°43'24.14"E 3°44'9.37"N, 72°43'55.56"E 3°44'22.45"N, 72°44'6.50"E	62
13	Kuda Rah Thila (Pink Shark Thila)	South Ari Atoll	Existing Marine Protected Area	3°34'13.01"N 72°54'50.79"E 3°34'0.68"N 72°55'43.06"E 3°33'9.51"N 72°55'29.90"E 3°33'21.04"N 72°54'38.23"E	200
14	Ariyadhoo Island and House Reef	South Ari Atoll	Potential Protected area (Marine and Terrestrial)	3°28'2.68"N, 72°51'33.02"E 3°28'4.09"N, 72°51'2.95"E 3°28'52.00"N, 72°51'4.52"E 3°28'52.34"N, 72°51'25.78"E	119
15	Rangali Kandu (Faruhuruvalhibeyru)	South Ari Atoll	Existing Marine Protected Area	3°35'46.17"N 72°42'26.70"E 3°35'58.82"N 72°42'58.03"E 3°35'19.76"N 72°43'27.09"E 3°36'4.71"N 72°43'33.10"E 3°36'28.59"N 72°44'14.71"E 3°35'19.76"N 72°43'27.09"E 3°35'19.76"N 72°43'27.09"E	900
16	Hurasdhoo Island and house reef	South Ari Atoll	Existing Marine and Terrestrial Protected Area	3°40'26.97"N 72°45'35.51"E 3°40'27.16"N 72°47'6.75"E 3°39'28.25"N 72°47'8.27"E 3°39'29.25"N 72°45'34.18"E	600

Note: The GPS locations of the boundary of points represents the outer boundary extreme points and does not specify the exact location of the survey. The information regarding methodology of the survey and key questions of the survey are detailed in Annex II.





# Annex II

## PROPOSED METHODOLOGY OF THE SURVEY

The interested parties are required to submit the draft methodology of the survey, along with the expression of the interest. The parties can use the following reference documents to develop the methodology of the survey.

1. The draft “Guidelines for coral reef and small island vegetation surveys in the Maldives”. The document can be accessed from the link <https://www.environment.gov.mv/v2/en/download/11067>
2. The surveying protocol under the National Coral Reef Monitoring Framework (NCRMF). The document can be accessed from the link [coraldatabase.gov.mv](http://coraldatabase.gov.mv)

The above documents are reference documents and the consultancy team is required to submit site specific methodology, for 16 sites. The key questions that needs to be answered in the proposed methodology are:

### MARINE SITES

1. What is the current status of basic sedentary marine lifeforms and substrates in the area? The data collected should be presented quantitatively for abundance and diversity.
2. What is the current status of marine seabed mobile lifeforms in the area? The data collected should be presented quantitatively for abundance and diversity. Additionally, basic information on the behavior and conditions should be presented.
3. What is the current status of water column mobile life forms in the area? The data collected should be presented quantitatively for abundance and diversity. Additionally, basic information on the behavior and conditions should be presented.
4. Abundance and diversity of IUCN Redlist Species in the categories of ‘Endangered’ (EN) and ‘Critically Endangered’ (CR). Further information on the IUCN Redlist can be accessed from the link <https://www.iucnredlist.org/>
5. Abundance and diversity of protected species under the Annex 1 of Protected Species Regulation (2021/R-25) and Annex II Fisheries Regulation (2020/R-75)
6. Sea Water Quality of the area with parameter including but not limited to; temperature, pH, salinity, turbidity, phosphate, nitrate, ammonia, sulphate, BOD, Faecal Coliform and Total Coliform

### TERRESTRIAL SITES

1. What is the current status of vegetation cover / types in the island including shoreline vegetation assessment? The data collected should be presented quantitatively for abundance and diversity.
2. What is the status of migratory / other birds in the island? The data collected should be presented quantitatively for abundance and diversity. Additionally, basic information on the behavior and conditions should be presented.
3. What is the status of turtles nesting in the island? The data collected should be presented quantitatively for abundance and diversity. Additionally, basic information on the behavior and conditions should be presented.
4. What is the status of the mangroves or wetlands or bay areas in the island (if present)? The data collected should be presented quantitatively for abundance and diversity.
5. Abundance and diversity of IUCN Redlist Species in the categories of ‘Endangered’ (EN) and ‘Critically Endangered’ (CR). Further information on the IUCN Redlist can be accessed from the link <https://www.iucnredlist.org/>
6. Abundance and diversity of protected species under the Annex 1 of Protected Species Regulation (2021/R-25) and Annex II Fisheries Regulation (2020/R-75)
7. Water quality temperature, pH, salinity, turbidity, phosphate, nitrate, ammonia, sulphate, BOD, Faecal Coliform and Total Coliform
8. Shoreline assessment for erosion including but not limited to beach profiles and topography
9. Drone mapping , for othomosaic maps, digital surface maps (DSM) and Digital Terrain Model (DTM)

The consultancy team should also include a staff from Ministry/ EPA during the survey. The cost of this staff shall be included in the cost estimations of the consultancy.



## Annex III

### FORM: PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Dear Sirs:

I, the undersigned, offer to provide the “**consultancy services to conduct ecological surveys of sites in Ari Atoll**” in accordance with your Request for Proposal dated [Insert Date] and our Proposal. I am hereby submitting our Proposal; Our financial offer is for the sum of [Insert amount(s) in words and figures (Should quote the amount in Maldivian Rufiyaa)] which is inclusive of the local taxes.

I 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 my disqualification.

If negotiations are held during the period of validity of the Proposal, I undertake to negotiate within reasonable limits. My Proposal is binding upon me and subject to the modifications resulting from Contract negotiations.

I undertake, if my Proposal is accepted, to initiate the services and fulfil the requirements of the terms of reference.

If we are selected for the assignment, on behalf of the team, I agree explicitly that any intellectual property infringement, misuse of plagiarism of another’s work in any form or state will result in immediate termination of the contract.

I agree that all outputs and materials produced as part of this consultancy will be handed over to the Environment Department at the end of the contract and will become the Ministry of Environment’s sole property.

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

Yours sincerely,

Authorized Signature [In full and initials]: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_



## Annex IV

### : WORK SCHEDULE

	<i>[1st, 2nd, etc. are weeks from the start of assignment.]</i>												
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	...
Activity (Work)													
_____													
_____													
_____													