Geographic Information System consultant

1. Introduction

The Mesoamerican Reef Fund (MAR Fund) is a regional environmental fund whose primary goal is to protect the Mesoamerican Reef Ecoregion (MAR) shared by Belize, Guatemala, Honduras, and Mexico. Its mission is to drive regional funding and partnerships for the conservation, restoration, and sustainable use of the Mesoamerican Reef.

The MAR Fund is carrying out the Mesoamerican Reef Rescue Initiative (RRI). The objective of the Initiative is to increase the resilience and ability to recover of the Mesoamerican Reef -and of the environmental and cultural services it provides-, through capacity building, regulations, economic incentives and financial sustainability required for effective and timely restoration.

Four key strategies guide the initiative:

1. To ensure sustainable long-term funding for continuous and emergency restoration through the establishment of an Emergency Fund and other innovative mechanisms such as, for example, creating insurance mechanisms for reefs;
2. To support and develop reef restoration and rehabilitation in the region;
3. To develop alternative sources of income and new employment opportunities for local communities, based on resource conservation; and,
4. To promote the commitment of governments from all four countries in the region through the development of policies and regulations aimed at facilitating the restoration of reefs.

This innovative enterprise is carried out by the Mesoamerican Reef Fund (MAR Fund) and the Central American Commission on Environment and Development (CCAD), with the participation of the four countries that share the Mesoamerican Reef System, which conform the Technical Supervisory Committee of the Reef Rescue Initiative -TSC-

2. Context

In 2017 and 2018, MAR Fund commissioned the establishment of a Geographic Information System (GIS) baseline of the most vulnerable reefs in the MAR region. As a result, a GIS data base and a set of 278 maps and overlay scenarios, that correlate coral reefs to different activities, risks, and key threats in the region, were developed.

In 2020, with the purpose of obtaining new updated geospatial information, creating new maps for different analysis, and exchanging key information about vulnerable reef sites, MAR Fund and the TSC require the services of a consultant, to provide specialized assistance to MAR Fund in developing GIS products, data gathering and analysis, and map elaboration.

3. General objective of the consultancy

Provide assistance to MAR Fund in GIS data gathering, organization and analysis, and map elaboration.

Specific objectives:

a. Organize, improve and update MAR Fund's GIS files and maps.
b. Develop and update maps for analysis, for the MAR Region, as requested by the MAR Fund.
c. Provide support in the analysis of the percentage (%) of coral cover by reef type in the MAR region and by country.
d. Provide support for sharing maps and layers through websites and portals.

4. Main tasks and responsibilities of the consultant

4.1 Organization and update of GIS information

a. Apply the appropriate GIS techniques for the adequated maintanence of MAR Fund´s GIS database.
b. Collect updated GIS information (e.g. maps, images, shapes and others type of GIS files and layers) necessary for improving MAR Fund´s GIS database, and for updating and creating new maps.
c. Carry out the necessary interpolations so that all the digital information is in the same format.
d. Organize the reference files in Excel format with the names of the digital layers analyzed, by project and by source of information.

4.2 Update and develop thematic maps

a. Carry out the overlays of the digital layers, to prepare and update maps of the MAR Region, regional and by-country, as requested by MAR Fund.
b. Update if needed, the template for the preparation of regional and by-country maps.

4.3 Specific Analysis (in coordination with consultants and partners)

a. Identify and gather GIS and maps available regarding shipping lanes and navigation routes within the MAR Region.
b. Identify reef sites of highest vulnerability, by overlaying reef areas with navigation routes.
c. In discussion with MAR Fund, prepare maps of key reef sites for protection and alternative shipping routes.
d. Estimate de percentage (%) of reef coverage by reef type in the MAR region and by country.
e. Elaborate the charts and maps portraying the reef coverage analysis.
f. Prepare, in the required format, the GIS data for the MAR Region to be shared through the HRI geoportal.

4.4 Coordination with MAR Fund, consultants and key partners

a. Maintain constant communication and coordination with the Reef Restoration Initiative Coordinator, and with the MAR Fund´s technical team.
b. Share and discuss, periodically, with the MAR Fund´s tema, the maps and information gathered during the consultancy.
c. Contact several sources of information to gather and exchange GIS information and maps.
d. Contact governmental agencies and Ministries of Environment (e.g. Clearing House Mechanism - CHM-) of each country to: a) share maps of the MAR, b) exchange GIS information with MAR Fund, and c) link the MAR Fund´s portal with the CHM.
e. Identify and contact key actors to gather information and maps about navigation routes and sensitive reef areas (e.g. COCATRAM[1], Marine Secretariat & others).
f. Communicate with HRI[2] to share MAR Fund´s data base and maps through HRI´s geoportal.
g. Communicate with HRI to estimate the coral coverage analysis for the MAR, by country and by type of coral.
5. Coordinate with the consultants hired by MAR Fund –RRI, in order to develop maps in support of the consultancies (e.g. vulnerable reef areas and new safe navigation routes).
6. Participate at the regional meeting that will be conducted by MAR Fund, with the governmental authorities, to identify areas where new navigation routes may be needed, as well as areas of highest vulnerability to unintentional ship groundings.
7. Particpate at other meetings conducted by MAR Fund as necessary.

==Note: No travel or movilization to other sites of the country of residence or within the Region are considered for the consultancy.==

5. Expected products of the consultancy

The consultant will deliver, at least, the following products

1. Work plan of the consultancy and timetable to carry the activities and products described in the ToR.
2. GIS MAR Fund´s database updated and well organized, and uploaded in the MAR Fund´s website for sharing.
3. Flow charts describing how the GIS data is organized within the electronic files and in the MAR Fund´s website.
4. Final set of thematic maps and overlays, in JPG format, for the MAR Region and by country.
5. Final set of thematicmaps in an editable format.
6. At least, five GIS maps, one by-country and one regionally, with reef sites of highest vulnerability to ship groundings in the MAR, and overlaid with navigation routes.
7. At least, five maps, one by-country and one regionally, with final reef key sites.
8. At least, five maps, one by-country and one regionally, with the possible safe and alternative routes.

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[1] Central American Commission for Maritime Transportation
[2] Healthy Reef Initiative

9. At least, five maps, one by-country and one regionally, portrayinig the reef coverage by type of reefs.
10. Charts and maps portraying the reef coverage analysis by reef type in the MAR region and by country.
11. Data base with the organized data for estimating the reef coverage percentage analysis by reef type in the MAR region and by country.
12. Final selected GIS data uploaded in HRI's geoportal for building story maps.
13. Link the MAR Fund´s portal with the CHM portals, if aviable.
14. Reference files in Excel format with the names of the digital layers analyzed, by project and by source of information.
15. Montly technical reports incorporating activites and results.

6. Duration of contract

The contract will run for the date of signing the contract through December, 2020.

7. Workplace

The consultant's office in her/his country of residence.

8. Oversight

The monitoring and follow up of this activity will be carried out by the MAR Fund's Reef Rescue Initiative Coordinator.

The final products will be reviewed by the RRI Coordinator and will required the RRI Technical Committee approval.

9. Reports submission and format

- All final, revised and approved products, files and maps, must be delivered electronically, in both, Spanish and English. Sent via email to the Reef Rescue Initiative Coordinator (cruiz@marfund.org) with copy to (mlares@marfund.org).
- Documents will be delivered in Word Format only.
- Maps and charts will be delivered in JPG format at 300 dpi, with logos, coordinates and references for double-letter printing, and in editable format for Arc GIS, Arc View or QGIS.
- Databases will be delivered in Excel format only.

10. Payments

- Payments will be provided monthly upon satisfactory reception of products and results.
- The consultant will have to submit an invoice.

11. Key qualifications

a. Specialist or technician with minum experience of five years in Geographic Information Systems and remote sensors.
b. Proven ability to produce maps and GIS analysis similar to those requested in these terms of reference.
c. Desirable knowledge and experience in the MAR region and the Great Caribbean Basin.
d. Desirable knowledge and work experience on conservation and coastal marine resources.
e. Technical-scientific leadership, and ability to interact with diverse actors.
f. Bilingual (Spanish-English).

12. Documentation required for application

a. Résumé or short version of the CV in English or Spanish
b. Letter of Interest underscoring the experience in the topics of these Terms of Reference.
c. Sample of work conducted in accordance to the products of these Terms of Reference.

13. Deadline and contact

Send the required information to Claudia Ruiz cruiz@marfund.org with copy to mlares@marfund.org no later than 18/May/2020.