Tender Document
Online Monitoring Station Maintenance and Operationalization
August 16th, 2023

The present tender document is posted in the framework of implementation of the Project: Mediterranean Forum for Applied Ecosystem-Based Management (MED4EBM). This is a partnership project funded by the ENI CBC MED Programme 2014-2020, under the Thematic Objective B.4 (Environmental Protection, Climate Change Adaptation and Mitigation), and Thematic Priority B.4.4 (Incorporate the Ecosystem-Based Management Approach to ICZM into Local Development Planning).

The Project aims at enhancing capacities of various stakeholders and institutional actors involved in the management of coastal and marine areas, and at establishing a cooperation and coordination platform for effectively implement ecosystem-based Integrated Coastal Zone Management (EB-ICZM). Governments and other ICZM stakeholders can benefit from this platform in taking informed decisions on planning and managing coastal resources and achieve effective coordination on the ground. The Project is implemented at 4 target areas in four different countries: Jordan, Italy, Lebanon, and Tunisia.

The Project does not aim at identifying management tools only, but rather have these management tools mainstreamed in actual Management Practice. The Decision Support System introduced by the Project is highly dependent on timely and reliable data. The Project's Target Area in Aqaba Jordan has two Online Monitoring Stations, which can supply indispensable valuable data on the coastal zone. The two stations however have some operational issues. The Royal Marine Conservation Society of Jordan (JREDS) as MED4EBM project partner, herby requests qualified enterprises to apply for a tender to provide maintenance and operationalization of the two existing Online Monitoring Stations.

Station I (Southern Station) is running on an embedded industrial PC with available ports (USB, RJ45, COM port RS 232) having all real-time collected sensors readings on a special software called (XMar2.0 Station) that is intended to manage all coming in data into readable files then all data files are sent on timely manner to the server-side over internet.

Station II (Northern Station) is running without an embedded industrial PC. It works on a special datalogger (Advantech ECU-1251) that collects sensors readings on a real-time basis to be transferred automatically to the land server-side using a networking switch device and router device over internet.

Empowered lives.
Resilient nations.

Data of the two online monitoring stations are communicated with the community on two separate public displays. Station I on the southern coast displays its data publicly at Aqaba Marine Reserve. Station 1 on the other hand displays its data publicly on a public display in the City of Aqaba

The present TOR focusses on Station I (Southern Station) which needs overall maintenance and operationalization including delivery of any supplies needed to secure full operationality of the Station and having regular data flow communicated to data server at Aqaba Marine Reserve and displayed on the Public Display there.

Required Knowledge and Technical Qualifications
Firms interested in bidding for this tender should have the following knowledge and qualifications.

- Knowledge of remotely operated real time data generating seawater monitoring stations
- Knowledge and proper handling and calibration of seawater quality sensors
- Ability to maintain the Station's Solar Energy System, examine the system and ensure its effectiveness and continuity of work.
- Knowledge of the operating systems
- Knowledge of information transfer, connectivity, and remote communication channels
- Ability to set up, follow up, and verify the data transfer process from the online monitoring station to the relevant server at Aqaba Marine Reserve
- Knowledge and maintenance capabilities and operationality of real time public display systems and their connectivity with data servers

Required Maintenance and Operationalization
The online monitoring station is currently out of order in terms reliable measurements, data flow to the server and data display on the public display. The required maintenance involves these three stages, and the bidder shall be responsible for supplying guaranteed operationality of the Station from stable and reliable data recording to data display on the public display, including providing new sensors where needed. The main indicators measured include:

1. Chlorophyll *a*: High sensitivity and presession concentrations in the range 0.01 – 1.5 $\mu g l^{-1}$
2. Dissolved Oxygen concentration and percent saturation: Typica; seawater DO concentrations.
3. pH: High sensitivity and precision in the range 8.00 – 8.50
4. Salinity: High sensitivity and precision in the range 40.50 – 42.00 PSU
5. Conductivity: High sensitivity and precision as indicator of salinity in the range 40.50 – 42.00
6. Seawater Temperature: High sensitivity and precision in the range 20.50 –28.00
7. Turbidity: Typical of Red Sea oligotrophic waters with low suspended matter concentrations
8. Water column depth as an indicator of tidal range
9. Bidders should provide detailed specifications of any spare parts or sensors included in the maintenance and operationalization process, as well as of documentation and necessary certifications of quality and compliance to standards and best practices of operational conditions in the Gulf of Aqaba seawater (Salinity: 40-41PSU; Temperature 20-30^{o}C). This includes the monitoring station stability underwater and preventing any movement that may result from sweater currents and affect the Station’s wellbeing including all sensors and impact on the readings.

Delivery and Payments

- The successful firm will be required to complete the maintenance and operationalization of the Online Monitoring Station within two weeks of being awarded the contract.
- Payment will be made within one week of successfully completing the required maintenance and operationalizing of the seawater online monitoring stations.