

## Call for tender n°18\_SPA/RAC

# Marine survey in Albania in the framework of the GEF Adriatic Project

## Patok-Rodoni Bay

### Biodiversity (Habitat and species), NIS, Eutrophication, Hydrography, Contaminants and Marine litter

E01 Biodiversity (Habitat and species), E02 NIS, E05 Eutrophication, E07 Hydrography, E09 Contaminants and E010 Marine litter, and their common indicators (CI) relevant for this study.

**Call for tender/SPA-RAC/ GEF Adriatic/IMAP/Albania n°18/2019\_SPA RAC**

# TECHNICAL SPECIFICATIONS

## 1. Background

### 1.1. The SPA/RAC

The Specially Protected Areas Regional Activity Centre (SPA/RAC) was established by the Contracting Parties to the Barcelona Convention in order to assist the Mediterranean countries in implementing the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). Tunisia has been hosting the Centre since its establishment in 1985. The Centre works under the auspices of the UN Environment/ Mediterranean Action Plan (UNEP/MAP) - Barcelona Convention Secretariat, based in Athens, Greece.

SPA/RAC's main objective is to contribute to the protection, preservation and sustainable management of marine and coastal areas of particular natural and cultural value and threatened and endangered species of flora and fauna in the Mediterranean.

For more information, please consult: [www.spa-rac.org](http://www.spa-rac.org).

### 1.2. GEF Adriatic Project:

The project, financed by GEF, is jointly implemented by SPA/RAC, PAP/RAC and UNEP/MAP Coordinating Unit, in collaboration with relevant institutions of the participating countries.

The Contracting Parties to the Barcelona Convention have been engaged, at their 18th Ordinary Meeting, into the implementation of the ecosystem approach (EcAp) to the management of human activities in the Mediterranean, with the ultimate objective to achieve a Good Environmental Status (GES) of the Mediterranean Sea. The EcAp is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.

Moreover, the implementation of the EU Marine Strategy Framework Directive (MSFD 2008/56/EC) by the EU Member States, presents crucial opportunities in the region and needs for the application of the EcAp throughout the Mediterranean region ensuring that the MSFD and EcAp mutually strengthen and build on each other, with the common ultimate aim to achieve GES of the Mediterranean Sea.

### 1.3. IMAP/ECAP and MSP

The activities of the present call for tenders are within the framework of the IMAP, the ICZM Protocol and the MSP Decision ([Decision on the MSP Conceptual Framework](#)).

Contracting Parties decisions (Decision IG.17/6 on "Implementation of the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment" and the Decision IG.20/4 on "Implementing the Ecosystem Approach Roadmap") reflect the wish to strengthen cooperation and seek synergies with the EU initiative, the MSFD, to achieve a shared vision of "a healthy Mediterranean with marine and biological ecosystems that are productive and biologically diverse for the benefit of present and future generations".

Additionally, Marine Spatial Planning (MSP) is based on the allocation of marine space in order to achieve sustainable development, including the protection of marine biodiversity and the conservation of marine resources, along with social and economic objectives, by overcoming the single-sector approach that focuses on a particular use of the sea.

According to the European Commission (EC), MSP fulfils four objectives:

- Reducing conflict on access to maritime space;
- Reducing cumulative impact of maritime activities on the environment;
- Reducing coordination costs for public authorities; and
- Improving certainty and predictability for private investments.

In the Adriatic Sea, implementing the Ecosystem Approach and improving sub-regional management capacity through Marine Spatial Planning aim to restore its balance.

#### **1.4. Call for Tender funds**

The activities of the present call for tenders are financed partially :

- by The Project “Implementation of Ecosystem Approach in the Adriatic Sea through Marine Spatial Planning” (GEF Adriatic project), which, among other goals, sets to develop National Integrated Monitoring and Assessment Programme (IMAP) for Albania and Montenegro.
- by UNEP/MAP SPA/RAC funds provided by UNEP/MAP MEDPOL.

## **2. BIDDING REQUIREMENT:**

This call for tender is open to firms having experience in mapping, characterization, and monitoring of marine key habitats and biodiversity in the Mediterranean, the use of technology such as the ROV, as well as the measures of physical and chemical marine parameters and the assessment of marine threats such as marine litter and contaminants. The aim is to collect IMAP data, analyses data and describe the study areas, assess its Good environmental Status and provide key elements to be taken into consideration for future MSP within these areas.

The study consists of a Field Survey (Biodiversity, Marine Habitat, Hydrography and Pollution) of Patok-Rodoni Bay in Albania.

Particularly, it consists of:

- Collecting all available data on (Biodiversity, MPAs, Fisheries, Aquaculture, Touristic activity, Socioeconomic, hydrography, contaminants, marine litter, marine traffic, coastal agriculture and legal framework) related to one pilot area in Albania: Patok Rodoni Bay.
- Implementing a field data collection (Biodiversity, Pollution, Hydrography) via a scientific vessel and a scientific team
- Assessing the Ecological status of the study area
- Providing reports and GIS maps related to the data collected within the present call for tender.
- Providing on the Job Training
- Providing a video report of the field survey
- Providing high resolution underwater pictures and video

The firm team of experts must include at least:

- **A Project leader:** with experience in at least one of the following fields: marine conservation, marine biology, Oceanography, Marine Living Resources, Aquatic ecosystems fisheries, or equivalent field
- **Expert 1:** Experience in at least one of the following fields: marine and coastal biodiversity, marine conservation, marine biology, fisheries, coastal zone management or equivalent field
- **Expert 2:** Experience in at least one of the following fields: hydrology / bathymetry / oceanography or equivalent field
- **Expert 3:** Experience in at least one of the following fields: aquatic contaminants/eutrophication/marine litter/ chemical oceanography or equivalent field.
- **Expert 4:** Experience in ROV piloting with at least one of the following fields: marine conservation, marine biology, biology, oceanography, Marine Living Resources, Aquatic ecosystems fisheries, or equivalent background.
- **Expert 5:** Experience in GIS applied to the mapping of the marine environment, marine and coastal areas or equivalent field.

It is preferable that at least one expert be Albanian speaker to facilitate the field exchanges with the various target audiences and particularly the local stakeholders within the framework of the implementation of the present study.

At least one member of the team of experts should have proven experience in assessing the vulnerability of marine ecosystems to anthropogenic pressures (e.g. fisheries, marine traffic, pollution, intensive touristic activities).

N.B:

- An expert (including the project leader) may be proposed to cover at most 2 specialties,
- More than one expert per specialty can be proposed except for the project leader,

### 3. OBJECTIVE OF THE ASSIGNMENT, SCOPE and DURATION

#### 3.1 Objective of the Assignment and scope:

The data collection will be processed via an **international consulting team of experts with a vessel**, equipped with necessary research equipment's (for measuring physio-chemical, biological, hydrographical parameters, contaminants, etc.).

**The survey includes samples of water, sediments and species which should be analyzed within accredited laboratories (Albanian and/or international).**

The international consulting team will have a close continuous consultation with the SPA/RAC GEF Adriatic Project Officer and the GEF National Coordinator in Albania within the Albanian Ministry of Tourism and Environment for the smooth running of the field surveys and involvement of the Albanian National institutions and the national team of experts which elaborates the national knowledge gap and the national IMAP.

All collected data shall be processed and prepared in formats that will be compatible with existing national environmental data bases, SPA/RAC data bases and to the IMAP INFO/MAP system, since all data should be transferred and integrated within these databases.

**SPA/RAC and the local authorities do not have boats suitable for the use of ROV, the Single Beam Echosounder and the collection of physical and chemical sea water and sediments**

**parameters. It is imperative to include in the offer the appropriate boat(s) to perform fieldwork.**

The purpose of the field study is to complement the existing knowledge on the state of marine environment in Albania by collecting and processing the data based on selected IMAP Ecological Objectives (EO):

- E01 Biodiversity (Habitat and species),
  - o **Common Indicator 1:** Habitat distributional range; and
  - o **Common Indicator 2:** Condition of the habitat's typical species and communities

And at the extent possible as indicated within the terms of references of the actual Call for tender:

  - o **Common Indicator 3:** Species distributional range, related to marine mammals, seabirds, marine reptiles;
  - o **Common Indicator 4:** Population abundance of selected species, related to marine mammals, seabirds, marine reptiles;
  - o **Common Indicator 5:** Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates), related to marine mammals, seabirds, marine reptiles.
- E02 NIS,
  - o **Common Indicator 6:** Trends in abundance, temporal occurrence and spatial distribution of non- indigenous species, particularly invasive non indigenous species, notably in risk areas in relation to the main vectors and pathways of spreading of such species
- E03 Fisheries,
  - o Only the variability of fish assemblages (in terms of species richness, density and at the extent possible biomass) will be assessed within this call for tenders.
- E05 Eutrophication,
  - o **Common Indicator 13:** Concentration of key nutrients in water column
  - o **Common Indicator 14:** Chlorophyll-a concentration in water column
- E07 Hydrography,
  - o **Common Indicator 15:** Location and extent of the habitats impacted directly by hydrographic alterations
- E09 Contaminants
  - o **Common Indicator 17:** Concentration of key harmful contaminants measured in the relevant matrix
  - o **Common Indicator 18:** Level of pollution effects of key contaminants where a cause and effect relationship has been established
  - o **Common indicator 21:** Percentage of intestinal enterococci concentration measurements within established standards
- E010 Marine litter
  - o **Common Indicator 23:** Trends in the amount of litter in the water column including microplastics and on the seafloor.

The Survey should be done in the most efficient way, following a risk-based approach, on the above priority indicators and locations, bringing the most added value. The objective is to provide qualitative and quantitative (as possible) data on the pilot site of Patok-Rodoni Bay in Albania, assess its environmental status, enabling to support the IMAP Monitoring programme and providing on-job training to the local teams to rise their capacity for their autonomous national future monitoring.

The field survey is based on the national knowledge gap assessment and National Monitoring programme developed within the GEF Adriatic Project. It will consist on:

- complement the existing knowledge on the state of marine environment in Albania by collecting and processing the data based on selected IMAP Ecological Objectives in Patok-Rodoni Bay taking as a baseline several studies previously implemented and the ongoing monitoring programmes and projected ones, particularly, developed within the GEF Adriatic project
- provide on the job trainings to local experts and representative of national institution in Albania on the monitoring methodologies to be used for EO1 Biodiversity (Habitat and species), EO2 NIS, EO5 Eutrophication, EO7 Hydrography, EO9 Contaminants and EO10 Marine litter, and their selected common indicators (CI) relevant for this study. The training will be provided to a maximum number of 20 participants. The training will be done onboard. The training will be provided in Patok Rodoni Bay. According to the vessel capacity and its technical characteristics as well as the weather conditions, the number of participants to be trained could be adjusted and revised in common agreement with the Albanian representatives and authorities. The training could be provided in separate days
- support the ongoing national monitoring programme in Albania
- provide data to be integrated within a data base at national and regional level.

The provider will also provide GIS Maps. The aim of the GIS Maps is to spatially describe the collected data and to show, to the extent possible, the identified interconnection and interaction among the different human activities and marine ecosystem in the study area.

GIS Maps including different layers will be elaborated by the provider: the different layers must be set for biodiversity (habitat, bathymetry, vulnerable zones and habitat, protected areas), hydrography, pollution and, when possible, include data related to fisheries, ports, marine traffic routes, anchoring areas/commercial vessels stand by areas, no fishing zones areas, aquaculture, offshore activities, pollution hotspots, most frequented coastal areas, marine infrastructures, etc.

### **3.2 Duration:**

The maximum time allocated for carrying out the study is 160 days starting from the date of signature of the contract, including the deadlines for handing in the final documents:

The study should be conducted over 3 phases as follows:

- Phase I, Collection of available data and elaboration of the Inception report (40 days)
- Phase II, Field data collection and laboratory analysis (100 Days)
- Phase III, Validation meeting and Final study report and deliverables submission (20 days)

## **4. Study Area of PatokRodoni Bay**

The proposed area for the scientific monitoring is the marine area in front of the Patoku lagoon (see Figure 1).

(South-Western Point 41° 35' 22" 19° 26' 35")  
(North-Western Point 41° 40' 17" 19° 26' 35")

(North-Eastern Point 41° 40' 16" 19° 34' 19")



Figure 1 : Proposed Area of Patok-Rodoni Bay

The area includes the Cape of Rodoni, the Rodoni Bay, Patok Lagoon and the river of Ishmi and Mat. The total area proposed is approximately 90 km<sup>2</sup>.

The bay is impacted by the two existing rivers (Ishmi and Mat) that contribute with water, sediments and pollution in this area.

The area is known for its relevant biodiversity and include protected areas in the related coastline; the area is also an important forging and nesting site for sea turtles.

The hydrography of the area had to be analysed and correlated with the physical disturbance within the coastlines due to the anthropogenic activities and influence of man-made structure.

Previous studies show sedimentation impact on the *Posidonia* meadows which need to be assessed within this survey as well as for other benthic habitats.

The area is also impacted by contaminants and marine litter. The area is approx. 45 km from the main Albanian port (Durrës). The survey vessel could be moored in Durrës port during the field survey in Patok-Rodoni Bay.

Additional details, from literature, related to the area are described below:

The coastline, represented by Tortonian sandstone-clay banks, is an erosive area and generally barren. Very poor vegetation dominated by *Crithmum maritimum*, *Elymus pycnanthus*, etc. grows up in some segments.



In the Infralittoral stage, it is known there is a biocenosis of the *Posidonia oceanica* meadows (=Association with *Posidonia oceanica*). Three species of seagrasses are reported for this area: *Posidonia oceanica*, *Zostera noltii* and *Cymodocea nodosa*. *Posidonia oceanica* meadows represent the most important underwater community. In this area *Posidonia oceanica* grows mainly on mattes, but it is also present in sand and rocky bottoms. The entire bottom is covered by sediments that are also present in suspension, what results in a moderate water clarity.

The upper depth limit of *Posidonia* meadows is at 3 meters. The lower limit of the meadows reaches a depth of 17-20 m and it includes different environmental conditions and bottom types, with meadows extremely diversified in terms of physiognomy (continuous and patchy meadows).

On the rhizomes and the bottom covered by dense shoots of *Posidonia* there is a well-developed sciafilic community dominated by algae like *Sphaerococcus coronopifolius*, *Peysonelia squamaria*, *Utricularia macrophysa*, *Pseudolythophyllum expansum* and *Flabellia petiolata*. On dead mattes grow up photophilic algae like *Padina pavonica*, *Halopteris scoparia* and *Acetabularia acetabulum*.

Among mollusks, as the most common species in *Posidonia* meadows of Rodoni bay were reported gastropods a, *Clanculus cruciatus*, *Clanculus corallinus*, *Homalopoma sangunium*, *Jujubinus exasperatus*, *Jujubinus striatus*, *Calliostoma conulum*, *Tricolia tenuis*, *Bittium reticulatum*, *Cerithium vulgatum*, *Hexaplex trunculus*, *Columbella rustica*, *Nassarius incrassatus*, *Hypseldoris tricolor* and bivalves *Pinna nobilis*, *Callista chione*, *Parvicardium exiguum*. Different bryozoans (mainly *Electra posidoniae*), hydrozoans (mainly *Plumularia*) and some sciafilic algae live as epiphytes on *Posidonia* rhizomes in this area.

### **Rodoni cape**

**Location:** Cape Rodoni is located in the District of Durrësi and is oriented E-W for the northern part with a length of about 8 km and WNW-ESE for the southern part which is about 7 km long.

**Physical features:** This rocky promontory culminates at 269 m in Draçi and at 160 m on the western tip where is located a military station. The extremity of the cape lacks forested vegetation. The southern part which is more abrupt, is covered by forest and farmed areas with reservoirs in the valleys. The northern part has a milder relief close to the sea and is occupied by farmed lands. Inland valleys can enclose some reservoirs.

**Geology:** The main part of the cape is composed of neogenic formations, mainly from Tortonian (clays and conglomerates) and from Helvetian periods (clays and some limestone). Numerous fossils can be found in the area, in particular oyster beds, gastropods and lamellibranchs corresponding to lagoon deposits. Basaltic formations are found in the southwestern sublittoral section.

**Marine environment:** is characterized by gentle submarine slopes with some rocky outcrops. The flora is composed of seagrass meadows of *Posidonia sp.* and *Fucus virsoides*; the other algae sampled and identified in the area are *Plocamium cartilagineum*, *Digonea simplex*, *Rhytiphloea tinctoria*, *Vidalia volubilis*, *Halopteris scoparia*, *Dilophus fascicola*, *Padina pavonica*, *Cystoseira adriatica*, *C. barbata*, *C. corniculata*, *C. stricta var. spicata*, *Sargassum vulgare*, *Cladophora prolifera*, *Halimeda tuna*, *Udotea petiolata* (Kashta, 1986). The fauna numbers a great diversity of fishes and sponges. The crustacean decapods sampled in the area are the following: *Gennadas elegans*, *Solenocera membranacea*, *Sicyonia carinata*, *Sergestes arcticus*, *S. sargassi*, *Lucifer typus*, *Plesionika heterocarpus*, *Lysmata seticaudata*, *Alpheus ruber*, *Athanas nitescens*,



*Processa canaliculata*, *P. edulis*, *Palaemon serratus*, *Crangon crangon*, *Pontophilus spinosus*, *Philoceras spinosus*, *P. bispinosus*, *Pontocaris cataphracta*, *Nephrops norvegicus*, *Scyllarus arctus*, *Jaxea nocturna*, *Callianassa subterranea*, *Upogebia pusilla*, *Paguristes oculatus*, *Pagurus arrosor*, *P. cuanensis*, *Anapagurus chiroacanthus*, *Eupagurus excavatus*, *E. prideauxi*, *Galathea intermedia*, *G. nexa*, *G. strigosa*, *Munida rugosa*, *Pisidia longimana*, *Dromia personata*, *Ethusa mascarone*, *Medorippe lanata*, *Calappa granulata*, *Ebalia cranchii*, *E. tuberosa*, *Ilia nucleus*, *Carcinus aestuarii*, *Liocarcinus depurator*, *L. vernalis*, *Pilumnus spinifer*, *Pinnotheres pisum*, *Goneplax rhomboides*, *Parthenope macrochelos*, *Maja squinado*, *Lissa chiragra*, *Inachus communissimus*, *I. dorsettensis*, *Macropodia rostrata* (Vaso and Gjiknuri, 1993).

Terrestrial environment: The vegetation is composed mainly of oak and pine forest, Mediterranean maquis, planted trees (pines), farmed and deforested areas. On the northern side at the basis of the peninsula, the dunes are characterized by psamphilous associations of: *Caxile maritima*, *Xanthium strumerium* (Mullaj, 1989).

Human activities: The area is only accessible by trails, which are sometimes in dreadful condition, particularly when it rains (slimy toboggans of marls). Farming activities are more important in the northern part. Local people still have a sense of traditional village hospitality. Rural population is scattered with 20-50 inhabitants/km<sup>2</sup> (World Bank and the government of Albania, 1992 a). In the southern part, only the bottom of the valleys are developed if not drowned by artificial lakes. The rest of Rodoni peninsula is mainly reforested (30 years old), however some sections have been burnt recently. Small settlements can be seen such as Biza, Draçi and Shetaj. Mussel and oyster farming is projected in the northern coast of the peninsula (Flloko, pers. comm.). Archaeological and historical remains (antiquity and medieval), shipwrecks have been located in the area.

Cultural features: Rodoni cape encompasses a fortress constructed during Scanderberg period (15th century) on the remaining of an ancient Illyrian fortress.

Main issues: Fire, roaming cattle, collect of fuelwood cause deforestation. Dynamite fishing is less important than in other places for there is an active control and penalty (according to coast guards). A coastal road would give an easy access and thus threaten this particular area if it were not under control. Looting of archaeological resources (pillaged by foreign divers) has been reported, in particular at the extremity of the cape.

Potentialities: The marine environment is biodiverse and of good quality. Underwater archaeological resources have been reported. It is a well-preserved area suitable for ecotourism with typical traditional farming villages which have kept a good sense of hospitality. This area could be a biosphere reserve with traditional farmed lands serving as buffer zones.

## 5. TECHNICAL SPECIFICATIONS

### 5.1. TASKS

Data collection and processing will be based on specific requirements and indicators relevant for the selected IMAP Ecological Objectives: **EO1 Biodiversity (Habitat and Species)**, **EO2 NIS**, **EO5 Eutrophication**, **EO7 Hydrography**, **EO9 Contaminants** and **EO10 Marine litter**.

The collected data should enable the assessment of the Good Environmental Status of the study areas and provide key indicators and/or decision-making tools which could be used for future development of Marine Spatial Planning within the study area with an identification of the main marine activities and vulnerable zones within the area as well as a description of the

existing interactions and conflicts among the different human activities and the marine ecosystems.

A holistic analysis should be done taking into consideration the biodiversity and the pollution data within the study area in order to provide its main interactions and identify the hotspot and vulnerable zones.

The means of implementation are detailed within the Methodology chapter.

## 5.2. METHODOLOGY AND PHASES

The study should be conducted over three phases as follows:

### **Phase I: Available knowledge – Inception report**

This phase is necessary to collect and analyse all the available studies related to selected areas of Patok-Rodoni Bay, in particular, those relating to **Marine Biodiversity and habitats, Pollution**, Fisheries and hydrography and will be based on the National Data GAP assessments reports and the Draft National Monitoring programmes elaborated by the GEF Adriatic national team of experts and which will be provided by SPA/RAC after the assignment of the tender.

During this phase, the provider must perform the following tasks:

- Make an appraisal of the various studies carried out in the selected area of Patok-Rodoni lying between the coastal and the offshore areas and related to the marine habitats and biodiversity in this area, and marine activities as well as hydrography and pollution, along with all available monitoring data on the status of marine environment of this area. This will allow to create a baseline of the study area and to carefully plan the activities to be carried out based on the identified of gaps in relation with IMAP Ecological Objectives 1, 2, 3, 5, 7, 9 and 10.
- Assess the pertinence and impacts of these studies as regards the conservation objectives regarding biodiversity and the reduction of the pollution impacts, with the view of their use to support field survey in the Patok-Rodoni Bay and future realization of national IMAP based monitoring programme. Identify the main national stakeholders/institutions and their responsibilities in the framework of field survey realization considering proposed National IMAP based monitoring programme;
- Assess the pertinence and impact of these studies as a supporting tool for decision making to a Marine Spatial Planning implementation within the study area. For this purpose, the provider is aimed to collect the available data (technical and socio-economic) on the existing coastal and maritime activities within the study area (ports, fishery activities, touristic activities, aquaculture...). The aim is to provide relevant data as well as a map showing the several activities and their range of possible impact. The map is to be used to affine the sampling plan to be implemented by the Provider within the present call for tenders.
- Considering the findings related to realization of above listed tasks and in line with data sampling, processing and reporting methodologies and procedures required by IMAP and accordingly transposed into proposed National IMAP based monitoring programme, the provider will further prepare detailed field survey plan including the following:
  - o monitoring stations and transects to collect monitoring data for all indicated IMAP Common Indicators (the species to be monitored, the parameters to be monitored) included in the proposed national IMAP based monitoring programme in the area

of Patok-Rodoni as the geographical scope of this field survey; As a minimum, the list of monitoring stations include the transects and monitoring stations presented below in Phase II per each Common Indicator. (The provider have to consult the National knowledge Gap assessments and the National IMAP Monitoring programmes available at this link:

[https://drive.google.com/drive/folders/1fC5bWLstP\\_25kLYVANQcywohlsib\\_ba](https://drive.google.com/drive/folders/1fC5bWLstP_25kLYVANQcywohlsib_ba))

- procedures and methodologies for data sampling, processing and assessment;
- the resolution and the scale of the maps to be produced;
- data base organization along with software to support its integration into national monitoring data base of Albania, considering the principles and requirements of IMAP Pilot Info System;
- Tools and needed equipment to carry out the field survey;
- proposal of division of responsibilities between provider and eventual national institutions for data processing upon being sampled during field survey;
- plan for data compilation into the data base by the provider;
- proposal for data assessment by the provided in line with IMAP requirements.

## **Phase II (Field survey, laboratory analysis):**

This phase encompasses the field surveys and assignments and will lead to the elaboration of the GIS maps required in the context of the study.

This important phase consists of:

### **A. EO1: MARINE HABITAT (Common Indicator 1: Habitat distributional range and Common Indicator 2: Condition of the habitat's typical species and communities)**

#### **A.1. Spatial distribution of habitats**

- Geophysical survey with:

Single Beam Echosounder (SBES) survey: A detailed bathymetric map for the Patok-Rodoni Bay should be realized. Some areas may be more investigated (e.g. seamount or canyons). The equipment required to perform the survey should be, at minimum, a digital single beam echo-sounder operating at dual frequency (200 and 30 kHz) and data acquisition line intervals should not exceed 200 m. The system shall be connected with the navigation software that will receive the depth data, matching them with position and time (time stamping) for further elaborations. In the first instance, the SBES survey shall be carried out along the planned lines. At the end of each day of survey, collected data shall be checked for QA/QC. To achieve statistical reliability, if needed, further SBES survey lines shall be planned and acquired. The data acquisition should be performed using an inertial station to correct the bathymetric data from the swell and waves effect. Depths must be corrected from tide effect.

- Remotely operated vehicle (ROV):

An ROV guided from the vessel, coupled to a surface GPS and equipped with USBL (Underwater Positioning System), should be used.

The ROV will be used according to transects as indicated in figure 6:

- transect perpendicular to the coastline: they will allow to define the distribution of the species and water physical and chemical parameters according to a profile going from the coastline to the deepest depth; These transects should be parallel with a maximum equidistance of 5 km. Each transect may start from the coast.
- Transects parallel to the coastline: they will allow to better define the coastal ecosystems (including benthic species distribution) and to assess the human impact (pollution, hydrological alteration) as well as the ecosystem variances close to the coastal rivers, wetland and urban and ports areas.

An additional transect (red transect in figure 6) may be done by the provider for data calibration purposes (optional transect).

The approximative length of all transects (cumulative) is about 75 Km.

During the field survey the ROV should be maintained at a constant height above the seabed that maintains a good field of view while attempting to avoid disturbing the substratum.

The transects in figure 6 are shown as the suitable methodology. **The provider can propose an equivalent methodology in which transects should be set in order to cover the most representative biocenosis and allow to define the species distribution and their interconnection and interrelation with human activities and pressures and sea water parameters.** In this case, the provider should explain how the equivalent proposed methodology will be implemented within the same initial planned budget and how the quality and the quantity of the data will be the same.

The provider may use divers when needed if the ROV doesn't allow collection of some data in some areas. Similar Quality and the quantity of the data should be insured in this case.

The use of a side-scan sonar by the provider is optional and will be considered as an asset. If the provider plan to use a side scan sonar, he should indicate it within the technical proposal. **The costs related to the side scan sonar use within this survey had not been taken into consideration within the financial estimation of the present tender.**



**Figure 6:** Proposed Transects for field survey within Patok-Rodoni Bay

The minimum requirements expected of the ROV are:

- Max depth: at least 100 m (Max depth in the study area is about 75 m for offshore stations)
- Equipped with an acoustic positioning system (USBL)
- Digital camera
- Strobe
- High definition video camera
- Navigation camera
- Depth sensor
- Conductivity sensor
- Compass

The camera imaging, lighting and recording modes should be adjusted to ensure that the highest quality image can be maintained throughout the dive.

The processed data must be analyzed to identify and characterize the major geomorphological and biological characteristics of the study area and provide related maps by extrapolating the data when needed. An in-situ preliminary analysis by the experts within the boat of the data collected by the ROV and the SBES will allow a better planning of the punctual sampling station for all the Ecological Objectives to be monitored.

## **A.2. Habitats characterization**

A specific field survey shall be planned to in-deep/*in-situ* study (direct methods) several biological features to complement the quantitative and qualitative characterization of habitats and associated species located in the study area (e.g. Posidonia meadows and coralligenous biocenosis, dark habitats). Depending on the features of the study area, some more techniques must be applied to in-deep investigate specific sub-areas such as:

- Van Veen grab for the sampling and the assessment of soft bottom communities. The van Veen grab sampling is made in order to have an idea regarding the type of the soft bottom and the mean species found. Minimum 2 samples/study area is requested. If the study area is completely covered by rock bottom. No sampling needed;
- Samples collected directly by the ROV if it is equipped with the needed tools (Jaw grabbers, laser beams...). Samples can also be collected by scuba divers. The sampling must be only in case of species which were difficult to identify by direct observation or from the ROV video. Sampling must be limited as much as possible. Species with difficult identification could be limited to genus level.
- High-resolution semi-quantitative analyses of photos taken within random quadrats to calculate the coverage of each identified taxonomical unit (quadrats could be set directly by the ROV or by a scuba diver);
- Photographic documentation for qualitative habitat description (a minimum total of 100 shots in JPG and RAW format, 16 megapixels for all habitat types).

Whenever possible, a small number of samples shall be collected for taxonomical identifications. This approach usually simplifies the process and limits the impact of sampling activities on the study area.

**B. E01: Marine species (Marine mammals, Sea Birds and Marine reptiles; Common Indicator 3: Species distributional range, Common Indicator 4: Population abundance of selected species and Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates)**

- Special attention will be driven to the presence and frequency of Endangered Marine mammals (to consider the recent observation of monk seal), seabirds and sea turtles during the field survey. The observed species have to be identified (picture when possible, Species with difficult identification could be limited to genus level) and, at the extent possible, provide data related to their position/body size/ sex...).
- At the extent possible, identification of potential hot spots for the above species as well as the identification and description of observed sources of negative interaction: noise, light, overfishing, fishing, habitat/breeding/nesting site loss, marine litter, ghost nets... have to be provided
- Data from ROV and/or diving may allow additional report on the above species.

**C. E02. NIS (Common Indicator 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas, in relation to the main vectors and pathways of spreading of such species)**

This task will be implemented in parallel with E01 activities. All observed NIS species during the E01 data collection will be carefully reported with georeferencing and qualitative and quantitative data at the extent possible. Special attention will be driven to particularly invasive species to be completed by underwater diving or underwater video/picture.

The below table define the most likely to invade Albania NIS and for which, the provider should pay attention during the field survey.

Table 1. The most likely to invade Albania invasive species with pathways other than the Suez Cannal (unaided)\*, ranked according to their assessed impact, in decreasing order (after Horizon Scanning methodology).

(Source: EO2 NIS National MONITORING PROGRAMME, 2019; GEF Adriatic)

Species	Name in English	Overall impact on biodiversity score	Overall impact on ecosystem services score
<i>Amathia verticillata</i>	Spaghetti bryozoan	100	300
<i>Codium fragile</i>	Green fleece	64	256
<i>Mnemiopsis leidyi</i>	Sea walnut	64	256
<i>Ciona robusta</i>	Tunicate	64	254
<i>Anadara transversa</i>	Transverse arc	60	120
<i>Pterois miles</i>	Lionfish / Devil firefish	36	144
<i>Garveia franciscana</i>	Rope-grass hydroid	36	144
<i>Styela clava</i>	Asian clubbed tunicate	36	144
<i>Clytia hummelincki</i>	Hydrozoan	36	108
<i>Megabalanus tintinnabulum</i>	Titan Acorn Barnacle	36	108

**NB: Within the field survey, some species might be recorder for first time in Albanian water. In this case, at least a picture should be provided to confirm a species record.**

#### D. Fish population

The provider is meant to make an analysis of the underwater videos recorded by the ROV and eventually by visual census made by Divers according to the various structures of key habitats in Patok-Rodoni Bay.

The results should present the variability of fish assemblages (in terms of species richness, density and at the extent possible biomass). A particular attention is to pay to the presence within the area of vulnerable and endangered cartilaginous species. These species should be carefully reported and described.

#### E. E05 Eutrophication (Common Indicator 13: Concentration of key nutrients in water column and Common Indicator 14: Chlorophyll-a concentration in water column)

The monitoring of eutrophication is to be built on the existing monitoring system of UNEP/MAP MED POL Monitoring programme and it is recommended to be extended along the transects to the open sea and include the stations that will serve as the reference stations.

As the national monitoring stations for Eutrophication are outside the study areas, only 3 stations (within one of the 2 transects southern and northern the study area in figure 7) must be assessed (to be decided in phase 1):

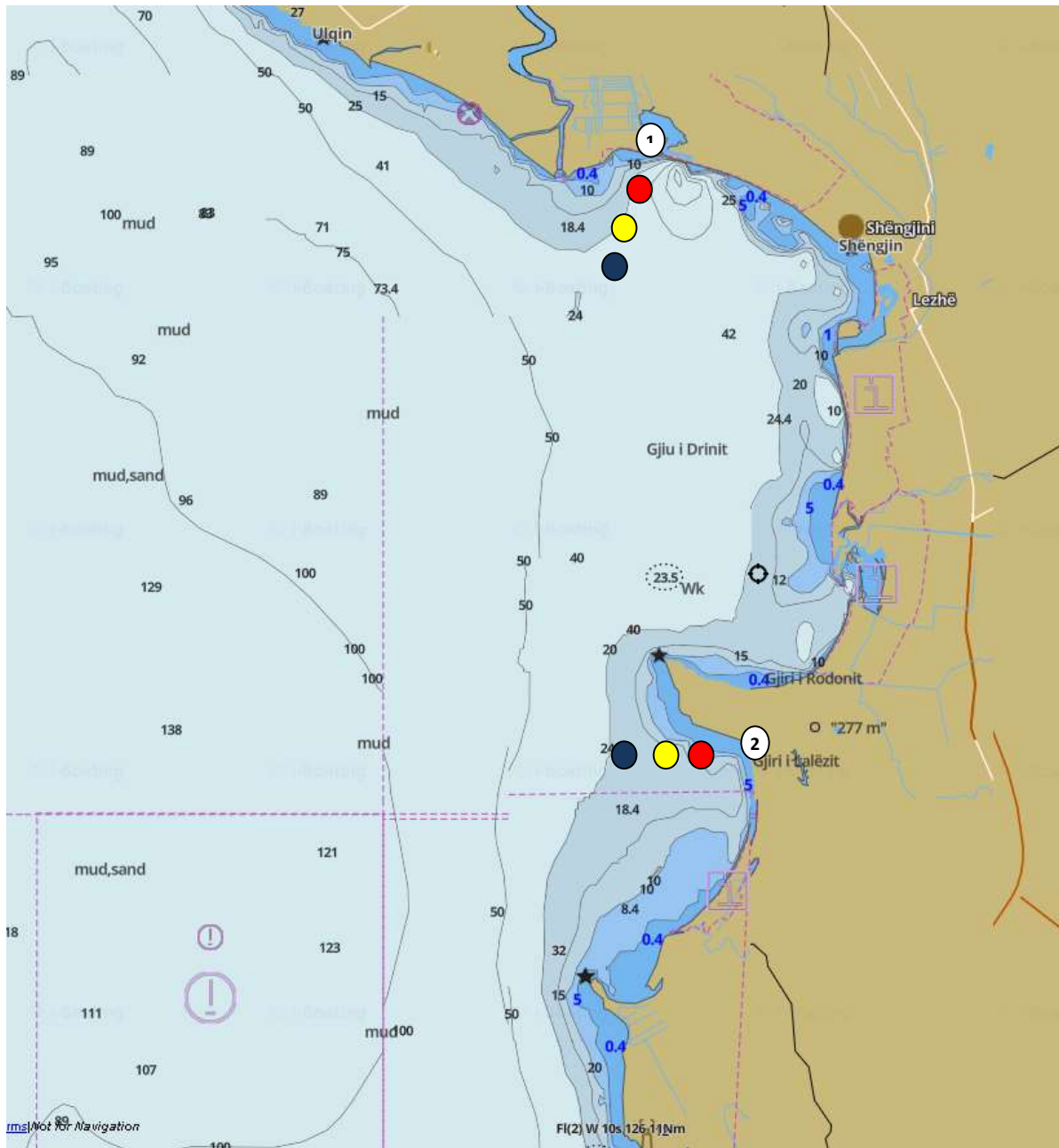


Transect	Station Code	Station Location?	Longitude / Latitude	Description
<b>Velipoja (Shkodra Prefecture)</b>				
1.	E05-11 E05-12 E05-13	Laguna Vilunit (Vilun Lagoon)	19.4459832E 41.8584546N	This station has been selected near the Vilun Lagoon close to the channel connected with pumping station. Located to east of the Velipoja town and west of Vilun Lagoon. The measurement profile will be in north-south direction.
<b>Lalzi Bay (Durrsi Prefecture)</b>				
2.	E05-21 E05-22 E05-23	Kepi i Rodonit (Rodoni Cape)	19.5069551E 41.5390043N	This station has been selected in the north part of Lalzi Bay, and just in the south of Rodoni Cape. Lalzi Bay is a large and new beach with numerous buildings, bars and restaurants along the coast. The measurement profile will be in east – west direction.

A particular attention will be driven for marine areas including water inputs from rivers and wastewater evacuation.

Water typology is to be considered (UNEP(DEPI)/MED IG.22/Inf.7).

- Water sampling should be performed by Nansen or Niskin bottle sampler at all stations and depths.
- For chlorophyll a sampling is recommended the use of the non-transparent sampling bottles



**Figure 7:** Map of stations in the Shkodra and Durrsi Prefectures

● 1 km from land ● 5 km from land ● 10 km from land

### **E.1. Parameters**

The survey will be done in a way to complement the existing national data. Data sampling, processing and assessment will be ensured by provider, with contribution of competent institution/accredited labs (preferably National) in line with detailed plan for field survey to be prepared by provider as explain in Phase I.

To collect data related to E05 and assess the direct and indirect impacts of nutrient and organic matter enrichment, the provider in close collaboration with competent institutions/accredited laboratories (preferably National), will be responsible for sampling at below specified monitoring stations in sea water at 3 different depth (0, 5 m and 2 m above

bottom) according to the station position, along with data processing and assessing by applying listed methodologies and sampling frequency as listed:

- Temperature, salinity and density: Could be measured on vessel by using modern CTD multi-parameter high precision probe.
- Transparency: could be measured on vessel by the Secchi disk or according to ISO 7027:1999 Water Quality-Determination of Turbidity
- Concentration of Dissolved oxygen content: could be measured near the bottom (under the euphotic layer/oxycline). Could be determined by titration with thiosulphate as stated in ISO (5813, 1983.) or by Oxygen sensors (on vessel).
- Concentration of orthophosphate (PO<sub>4</sub>-P), total phosphorous (TP), nitrate (NO<sub>3</sub>-N), nitrite (NO<sub>2</sub>-N), Ammonium (NH<sub>4</sub>-N), total nitrogen (TN) and orthosilicate (SiO<sub>4</sub>-Si) in the water column at three relevant depths (typically 0, 5 and 10 m) : could be measured photometrically with an in-situ Auto Analyzer or using spectrophotometry. Samples may need to be analyzed immediately after sampling on the research vessel or they could be preserved for later analysis in research laboratories. All sampling activities as short-term (minute, hours) or long-term (days) storage of samples guidance in relation to sampling, storage and handling of samples (ISO 5667-9 [1], ISO 5667-14 [2] and ISO 5667-3 [3]) should be taken in consideration.
- Composition and abundance of phytoplankton community – Samples could be collected on vessel via Niskin bottle/Nansen sampler and/or plankton nets and preserved to be analyzed by the method of sedimentation after UTERMÖHL and counting on the inversed microscope. Special attention will be driven to eutrophication/pollution indicative species.
- Concentration of chlorophyll-a: could be performed by using Spectrophotometry (ISO 10260 (1992) or by fluorometric method

Considering the above, Provider must prepare detail plan for field survey as indicated in phase I.

#### **F. E07: Hydrography (Common Indicator 15: Location and extent of the habitats impacted directly by hydrographic alterations)**

- The aim is to provide a preliminary map of the hydrologic natural dynamic of the surveyed area of Patok-Rodoni bay and link it with the marine habitat and biodiversity dynamic of the area as well as contaminants and marine litter distribution. Sites impacted by hydrology alteration will be identified at the extent possible, e.g. fractionated Posidonia meadows, leaves with high epiphyte density, areas with high concentration of marine litter, area with high concentration of sediments, coastal areas with high erosion...
- Measurement of key hydrographic properties (temperature, salinity/conductivity, transparency, turbidity, suspended matter, etc.) are to be measured on vessel (from the surface to the bottom by using modern CTD multi-parameter high precision probe)
- Data on bathymetry/depth variation, courants, waves, tide/sea level will be collected at the extent possible.

As some parameters to be measured are similar for E05 and E07, they will be measured one time for each station and reported for each related Ecological objective.

## G. EO9: Contaminants

The monitoring of Contaminants is to be built on the existing monitoring system of UNEP/MAP MED POL Monitoring programme.

### G.1. Common Indicator 17: Concentration of key harmful contaminants measured in the relevant matrix

To collect data related to EO9 and assess the direct and indirect impacts of pollutants, the provider in close collaboration with competent institutions (and possibly national laboratories), will be responsible for sampling at below specified monitoring stations in sea water at 3 different depth (0, 5 and 2 m above bottom), along with data processing and assessing by applying listed methodologies and sampling frequency as listed.

The survey will be done in a way to complement the existing national data. Data sampling, processing and assessment will be ensured by provider, with contribution of competent institution/accredited labs (preferably national) in line with detailed plan for field survey to be prepared by provider as explain in Phase I (Samples are to be analyzed by accredited laboratories, at National level or outside).

To fully comply with IMAP requirements, contaminants should be selected in accordance with UNEP (DEPI)/MED WG.444/5, Directive 2000/60/EC, EC Regulation 853/2004 and 1881/2006; with all amendments. Specifically, for biota (tissue and species), sediments, contaminants that should be analysed and monitored are listed as below:

**BIOTA:** In marine organisms, the whole soft tissue or dissected parts according sampling and sample preparation protocols, and primarily in bivalve species and/or fish:

- Trace/Heavy Metals (TM): Total mercury (HgT), Cadmium (Cd) and Lead (Pb)
- Organochlorinated compounds (PCBs, Hexachlorobenzene, Lindane and  $\Sigma$ DDTs)
- Polycyclic aromatic hydrocarbons (US EPA 16 PAHs Compounds)
- Lipid content, flesh fresh/dry weight ratio for normalisation purpose

**SEDIMENTS:** In coastal and offshore sediments (<2mm particle size fraction):

- Trace/Heavy Metals (TM): Total mercury (HgT), Cadmium (Cd) and Lead (Pb)
- Organochlorinated compounds (PCBs, Hexachlorobenzene, Lindane and  $\Sigma$ DDTs)
- Polycyclic aromatic hydrocarbons (US EPA 16 PAHs Compounds)
- Aluminium (Al), Total Organic Carbon (TOC) in the <2mm particle size fraction for normalization purpose for TM and OCs, respectively. The <63 $\mu$ m sediment fraction is recommended to be complementary for metals.
- The liophilization ratio (dry/wet sediment ratio)

Thus, according to the methodologies described at UNEP(DEPI)/MED WG.444/5, the procedures are as follows:

- **Sampling:**

- Sediments are recommended to be sampled by a box-corer or gravity corer (coated in plastic internally for the heavy metals samples); alternatively, a metal Van Veen grab sampler (with top lids) could be also used. The later guarantees a minimal disturbance

of the top sediment layer. Superficial sediments (up to 2 cm depth) should be selected in muddy or clay areas preferably.

- Shellfish samples (mussels, *Mytilus galloprovincialis* and/or other commercially important bivalve species) should be collected manually (off the shore or off a boat) or with help of divers, depending on the working conditions. Fish samples could be obtained using fishing boat or at the fishing ports, provided enough and reliable information on capture's location, depth and date of sampling. Commercially important species of fish should be selected in accordance with the E03.
- Analysis. Analytical methods for every type of contaminants are as follows:
  - Trace/Heavy Metals (TM) and Aluminium: Spectrometry, Mass Spectrometry
  - Organic Compounds: Gas or Liquid Chromatography (GC/LC) coupled to a variety of detectors, such as Electron Capture Detectors (ECD) or Mass Spectrometry (MS).
  - TOC: Elemental Analyzer
  - Particle fractions: in-house mesh validated methods (for <2mm) and/or geological standard sieving methods.
- Indicator units:
  - Trace/Heavy Metals (TM) and Aluminium: mass/dry or wet weight mass of sample, according MEDPOL Database Format Protocols. The dry/wet mass ratios should be calculated and reported.
  - TOC: Elemental Analyser (as %)
  - Particle fractions (as %)

In the Albanian Environmental Monitoring Plan for 2019, together with monitoring stations for bathing waters, there are 28 monitoring stations defined for the control of nutrients in sediments and water samples along the coastline, with a frequency 1 or 2 times per year (See National Monitoring Programme

[https://drive.google.com/drive/folders/1fC5bWLstP\\_25kLYVANQcyywohlsib\\_ba](https://drive.google.com/drive/folders/1fC5bWLstP_25kLYVANQcyywohlsib_ba) ).

Within this field survey, the station to be monitored will be done for sediments and for bivalve species (such as *Mytilus galloprovincialis*) and/or fish (such as *Mullus barbatus*) and will be as follow:

**Table 2.** Proposed coordinates and codes of monitoring stations for CI17 and CI18 in the study area

Station CODE	Location	Station Type	Longitude	Latitude	Sampling Matrix
AL201C_Pa1	PATOKU LAGOON	Long term	19.576822	41.624095	B, S
AI201C_RC1	RODONI CAPE	Long term	19.447051	41.584303	B, S
Station 3	To be proposed by the provider in phase 1 and agreed				B, S

B: Biota; S: Sediment

**In order to have a better profile of contaminants in Adriatic Sea, a couple of off-shore stations should also be included (the same as the ones proposed for E05). The position of the two offshore stations must be proposed by the provider in phase 1 and agreed.**

Considering the above, Provider must prepare a detail plan for field survey as indicated in phase I.

## G.2. Common Indicator 18: Level of pollution effects of key contaminants where a cause and effect relationship has been established

The selection of the sampling sites for the monitoring of biological effects in the marine environment should consider the same particularities as for the CI17.

According to the methodologies described at UNEP(DEPI)/MED WG.444/5, the expected procedures are as follows:

- Analysis-Analytical methods for every parameter are as follows:  
*Lysosomal Membrane Stability (LMS): Biological techniques (neutral red retention), including microscopy*  
*Acetylcholinesterase (AChE): Biochemical techniques, including spectrophotometry*  
*Micronucleus assay: Biochemical techniques, including microscopy*  
*Additional parameters to be recorded are biometrics (size/length, age), biological parameters such as condition index (mussels), condition factor, gonadosomatic index, hepatosomatic index (fish) and data on temperature, salinity and dissolved oxygen.*
- Indicator units:  
*Lysosomal Membrane Stability (LMS): (retention) minutes*  
*Acetylcholinesterase (AChE) assay: nmol/min mg protein in gills (bivalves)*  
*Micronucleus assay: Number of cases, % in haemocytes*

## H. E010: Marine Litter (Common Indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor)

This survey will be done in parallel to the activities related to E01, E02, E05, E09 and particularly along at least 5 of the transects defined in E01.

Qualitative and quantitative data on marine litter presence in the water column and seafloor in the pilot site can be provided by direct observation from the vessel (on sea surface) and the ROV.

Microplastics Samples can be undertaken by manta trawl net or equivalent method for the sampling of microplastics on the sea surface.

Sampling/direct observation should include station close to sites with inputs from rivers and wastewater evacuation. Area with accumulation of marine litter in the seafloor and ghost nets identified within diving and/or ROV surveys must be reported: marine litter nature, abundance, and position.

At least 500 m of beaches (to be selected in phase I) inside the study area must be also prospected in order to allow comparison of the marine litter in shores and in the water column.

## I. Summary of the field work sampling stations

The below table 4 show a general summary description of the above parameters to assess.

**Table 4.** Sampling stations and means of implementation of the field study in Patok Rodony Bay

Designation	Means of implementation	Sampling stations
E01, E02 and E03 (Spatial distribution of habitat+habitat)	Vessel, ROV, Single Beam Echosounder (SBES), scuba diving, etc... along	Transects in the study area

characterization+Marine Species+ NIS +Fish Population activities)	transects as indicated within the present ToRs  + laboratory analysis	
E05 Eutrophication (CI13 and CI14)	Vessel, CTD multi-parameter high precision probe, Secchi disk, Oxygen sensors, in-situ Auto Analyzer or using spectrophotometry (for orthophosphate, total phosphorous, nitrate, nitrite, Ammonium, total nitrogen and orthosilicate), Niskin bottle/Nansen sampler and/or plankton nets, etc. + laboratory analysis as indicated within the present ToRs	3 stations (within 1 transects southern or northern the study area) + 2 offshore station
E07 hydrography (CI15)	Vessel, CTD multi-parameter high precision probe, as indicated within the present ToRs	Same stations as E05 and E09
E09 Contaminants (CI17)	Vessel and the described biota and sediment sampling equipments + laboratory analysis as indicated within the present ToRs	3 stations + 2 offshore station
E09 Contaminants (CI18)		3 stations
E010 Marine Litter	Vessel, ROV, scuba diving, manta trawl, foot prospection, etc... as indicated within the present ToRs	Along at least 5 of the transects defined in E01 and at least 500 m of shores in the study area

## J. Training

During phase II, an on-job training will be provided for a maximum of 15 participants from of national institutions in Albania (representatives of the Ministry of Tourism and Environment, other competent national institutions, research institute and laboratories, National Experts...)

The aim of the training is to provide onboard on the job training on the methodologies, protocols and sampling material used to collect data within the survey and related to the different CI of the present Study.

The provider will produce the needed training materials for the in-situ training activities.

The training will be provided in Patok Rodoni Bay. It should be one-day training. According to the vessel capacity, the training could be performed for all participants during the same day or to be provided on separate days for different groups of participants.

**The provider should include in its technical offer, the vessel maximum number of onboard participants per day as well as a preliminary description of the proposed training.**

Taking into consideration the vessel capacity and its technical characteristics as well as the weather conditions during the survey, the number of participants to be trained could be revised in common agreement with the Albanian representatives and authorities.

Travel and accommodation fees of the trainees will be covered by the trainees themselves or their respective organizations.

Onboard catering fees to the participants during the training have to be provided by the provider.



## K. Reports and deliverables

The field study report will include:

- a summary description of the study area,
- the parameters adopted (particularly the geodesic),
- the methodology adopted, and the equipment used, including the boat and in-board/laboratory equipments,
- the main results of the assignments with an interpretation of all the maps related to biodiversity as well as the physical, chemical and biological parameters (including laboratory analysis), species abundance/presence, figures and tables,
- geo-referenced notes and remarks from the field activities,
- the route taken and sampling points of each visit,
- the back-up photo and video cover (including underwater by ROV and Divers) of the progress of the study and the study area, with continuous position of the underwater camera given by the USBL device, as previously specified,
- lists of habitats and species (particularly vulnerable and endangered species and habitats and those characterizing the biocenoses as well as species which are first time recorded in Albania) within the study areas,
- the main conclusions of the results
- recommendations for the monitoring of the area
- recommendation of the management and conservation measures of the area including Marine Spatial Management
- several GIS maps (shapefiles) ready to be put online via the SPA/RAC platform on biodiversity (<http://data.medchm.net>) and InfoRAC IMAP Pilot Info System.
  - the map of biocenoses/facies/associations identified in the study area (different details and resolution according to the aims of the job),
  - the bathymetric map of the marine and coastal zone of the surveyed area of Patok-Rodoni Bay lying between 0 and 50 m down,
  - the geomorphological map of the study area,
  - the hydrological map of the superficial water of the study area
  - a map showing the contaminants, the eutrophication and the marine litter parameters and highlighting the related hotspots and the identified sources of pollution
  - maps of sensitivity of habitats to eutrophication, hydrology alteration and pollution
- photographic and video coverage of the field activities:
  - photographic coverage both of the progress of the study and of the marine species and habitats (a selection of 100 photos will be provided for the various communications needs with the following features: dimension: 5000x3000; format: JPG; density: 16 megapixels (minimum))
  - 3 minutes video coverage summarizing the study implementation and results (including on-board and in-laboratory survey), with the following features: pixel report: 1/1 sq., extension/format: mp4; dimension: 1920/1080 full HD (minimum); frame: 25 p (minimum)
  - 2 digital copies (within an external hard drive) of all the video from ROV must be provided

**The provider will submit a draft field study report including photos, videos and GIS maps at the end of phase II**

## **Phase III Validation meeting and Final study report and deliverables submission**

The phase III includes the organization of the validation meeting and elaboration and submission of the final study report, GIS MAPs, Videos, photos and the translated executive summary of the field report.

**The final field report, GIS maps, Videos and photos** will be submitted by the provider according to the deadlines set within the present call for tender upon reception of the comments from SPA/RAC and following the validation meeting.

**A validation meeting** is to be planned with the representatives of the Albanian Ministry of Tourism and Environment at the end of this phase with the presence of the project leader and one or more representative/s from the firm involved. The validation meeting may be held in the Ministry of Tourism and Environment premises (Tirana).

The provider will have to organize the meeting in coordination with the Albanian representative of the Albanian Ministry of Tourism and Environment and SPA/RAC. Thus, the provider must include in its financial offer the cost of the validation meeting organization (meeting room, catering, simultaneous translation to Albanian, the provider representatives travel costs). The meeting agenda will be set by the provider in common agreement with SPA/RAC and the Albanian representative of the Albanian Ministry of Tourism and Environment.

**The final agreed report will be summarized (executive summary) and provided by the provider. This summary must be also translated to Albanian and provided by the provider. The translated version will be validated by the Ministry of Tourism and Environment.**

### **6. Particular remarks**

- 6.1. Language:** All Reports and maps within the actual study must be provided in English, in three copies in hard and electronic format. The English version of the final reports of the study agreed by the Albanian National authorities and SPA/RAC, should be translated in Albanian language and provided in three copies in hard and electronic format.
- 6.2. Materials and means of implementation:** The provider must mobilize every necessary equipment for the completion of the work in hand.
- 6.3. Miscellaneous costs:** Travel and accommodation costs, as well as insurance for the team and equipment, will be borne by the provider.
- 6.4. Documents for the permits:** To obtain in time the permits and necessary authorizations for the field work, the contractor must provide all the documentation required by the local authorities (detailed list of human resources, logistics, copy of ID documents, etc.) within 21 days since the signature of the contract. The process of granting the necessary permits can only start when all the required documents are handed over to UNEP/MAP- SPA/RAC. Any delay in the delivery of the said documents causing a budgetary impact on the provision will be charged to the provider. The steps necessary for obtaining the permits from the local authorities for carrying out the field work at sea will be the responsibility of the Albanian National Authorities and facilitated by the GEF National Coordinator. With the aim of facilitating and speeding up the steps of obtaining the permits, it is desirable to rely on local logistics (renting boat, diving equipment, ROV, etc.).
- 6.5. Authorities may require the presence of a national representative on the vessel during all (or part) of the survey.**

## **7. MAXIMUM BUDGET**

A maximum budget of 160 000 US Dollars is available for this call for tender. Any financial offer exceeding this budget means that the bid will be eliminated.

## ADMINISTRATIVE SPECIFICATIONS

### Article 1 - Conditions for participation in the tender

The service provider firm must have proven competence in mapping, characterization and monitoring of marine habitats and sea water physical/chemical parameters (preferably in the Mediterranean) and in the use of ROV.

Bids from a consortium of joint companies are authorized on condition that the leader is clearly identified in the consortium deed, an original copy of which must be included in the offer. **A consortium with local Albanian institution(s) will be considered as an asset in the evaluation of technical offers.** In case of a consortium with a local institution(s), a clear definition of the tasks to be undertaken by the local institution(s) (particularly for laboratory analysis) should be included in the bid.

### Article 2 – Content of the offer

The offers must include in separate files, a technical offer, an administrative folder and a financial offer.

#### Technical offer

It must contain:

1. The firm's references regarding similar studies<sup>1</sup>: Certificates: reception certificate, acceptance minutes or any other documentary evidence delivered by the study sponsors, must be provided as proof; the budget of similar studies mentioned as firm's reference must be indicated.
2. The CV of the proposed experts (signed/initialed by the expert on every page of the CV) with their background, qualifications, experience and references (including copies of their university diploma(s)).
3. A methodological note including the organization of the work, the planning and time schedule, the chronogram of intervention of the team members and the complete list of equipment to be used (ROV, craft, DGPS, towed camera, diving equipment, boats, water multi-parameters devices, manta trawl net, laboratory equipment...).

#### Financial offer

The financial offer must be expressed in tax-free prices in US Dollars; VAT must be added. It will include all costs related to the performance of the service.

The financial offer must **be sent separately** (in a separate file) and include the following documents:

1. Submission letter, using the template attached in Annex 1;
2. Estimated details of global tender price, using the template attached in Annex 2

#### Administrative Folder

The administrative folder should also include the following administrative documents:

1. A tax certificate, valid on the offer submission date, proving that the firm has no outstanding tax obligations.
2. A certificate proving that the tenderer is registered in the commercial register.
3. A statement delivered by the social security body to which the provider is affiliated

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<sup>1</sup> Could be considered as a similar study, any study leading to the mapping of marine and coastal habitats, ecological status assessment of a sea area, ecological study of a marine and coastal area, MPA ecological study, hydrology study, sea pollution assessment, coastal human activity impact assessment.

- stating that all dues have been paid and which is valid on the date of submission.
4. A sworn statement of non-bankruptcy.
  5. A sworn statement that the firm is in no situation that could in any way be incompatible with the mission or compromise independence in carrying out the mission.
  6. A sworn statement from each of the members of the work team, who are not staff members, confirming that they are willing to participate in the work team to carry out this mission.
  7. Call of tender signed (date, signature of all pages and signature and stamp of the provider firm at the end of the document).

If the original administrative documents are not in English, it should be provided with additional copies translated into English by a sworn translator.

Should any of the administrative documents 1 to 7 be missing, the provider will be contacted to complete the offer documents within a period of seven days. If after a period of seven (7) days, the documents are still not complete the offer will be eliminated.

### **Article 3 - Submission of offers**

**Offers must be received electronically in 3 separate files (technical offer, administrative folder and financial offer) in the same Email at the following e-mail address: [car-asp@spa-rac.org](mailto:car-asp@spa-rac.org), before 17 December 2019, 23h59 Tunisia time (GMT+1).**

E-mails should have the following subject:

**"Call for tender/SPA-RAC/ GEF Adriatic/IMAP/Albania n°18/2019\_SPA RAC"**

Proposals received after this deadline will not be considered.

### **Article 4- Additional information:**

In the event that certain tenderers have information to request or have questions about one or more parts of the bidding documents, they should refer to the customer by e-mail address at [car-asp@spa-rac.org](mailto:car-asp@spa-rac.org), with copy to Anis ZARROUK ([anis.zarrouk@spa-rac.org](mailto:anis.zarrouk@spa-rac.org)) and Daniel Cebrian ([daniel.cebrian@spa-rac.org](mailto:daniel.cebrian@spa-rac.org)) in order to obtain the necessary clarifications before ten (10) seven days before the deadline of the submission of the offers.

The answers will be sent by email and published on the SPA/RAC website. Where appropriate, addenda to the call of tenders may also be added to it by SPA/RAC, in order to clarify the understanding of the tender documents or to bring changes to the information concerning the workplaces, the project, the terms of reference, the agreement or the other tender documents.

No answer will be given to verbal questions and all interpretation by tenderer of the tender documents that has not been subject of an addendum will be rejected and cannot imply the responsibility of the client.

### **Article 5 - Definition, consistency and variation of prices**

The services provided as part of this assignment consist of an overall fixed and non-revisable cost.

### **Article 6 – Tender validity period**

Any bidder who submitted a tender will be bound by his tender for 120 days starting from the day following the deadline fixed for receiving the documents. During that period the prices and information proposed by the bidder will be firm and non-revisable.

### **Article 7- Terms of payment**

Payment for the mission will be made as follows:

- 20% after validation of phase I and submission of the final version of all deliverables related to this phase and their approval by SPA/RAC
- 40% after achievement of the field survey, laboratory analysis, the training and reception of the draft report of the study and its annexes including the GIS Maps and their validation by SPA/RAC
- 30% after the submission and validation of the final version of all the reports, documents and deliverables including GIS maps photos and videos. And the delivery of the provisional acceptance without reservation.
- 10% after the final acceptance delivery.

## Article 8- Offer evaluation procedure

### 8.1 Evaluation of technical offers

Only offers with complete administrative documents will be subject of technical evaluation. The evaluation committee will first examine the technical offers and will attribute a score to each offer according to a scale of 100 points maximum, based on the following criteria:

- 1- Firm's general experience and technical references (20 points).
- 2- Evaluation of the proposed project team and it's experience (55 points)
- 3- Methodology, organization and implementation schedule (25 points)

Criteria		Notation	
<b>1- Firm's general experience and technical references. Working experience in the Mediterranean is an asset.</b> (references presented by the competing firms will be assessed according to their nature, number and date delivered)	<b>a- Nature and number of similar jobs, references delivered by study sponsors must be provided as proof</b>	Nature and number of similar studies justified.	<b>15 points maximum</b> (4 points/reference, 1 additional point/reference in the Mediterranean; or 1,5 additional point/reference in Albania)
		No similar studies	0 points (in this case the offer is eliminated)
	<b>b- Date the most recent studies were carried out</b>	Less or equal to 5 years	<b>5 points maximum</b> (1 point/study)
		Between 5 and 10 years	0,5 point/study
Over 10 years		0 points	
<b>2- Evaluation of the proposed</b>	<b>a- Project leader</b>	Experience in similar studies	<b>8 points maximum</b>

<p><b>project team and it's experience in the Mediterranean is an asset</b> (assessment will be based on the number of similar studies the proposed specialists have contributed to and the nature of their qualifications).</p>			<p>(2 points/ as project leader in similar study, 1 additional point/similar study as project leader in the Mediterranean or 1,5 additional point/ similar study as project leader in Albania)</p> <p>or</p> <p>0.5 point/ similar study as expert</p>
		No similar study	0 points (in this case the offer is eliminated)
		MSc degree in marine conservation, marine biology, biology, Oceanography, Marine Living Resources, Aquatic ecosystems fisheries, coastal zone management or equivalent field	<b>4 points</b>
		Below MSc degree or in field far from the one requested	0 points
	<p><b>b- Expert 1</b> <b>Field of experience:</b> Marine and coastal biodiversity</p>	Experience in similar studies	<b>5 points</b> maximum (2.5 points/ similar study)
		No similar study	0 point
		MSc degree in marine conservation, marine biology, fisheries, coastal zone management or equivalent field	<b>3 points</b>
		University degree and at least 4 years of related professional experience	<b>1.5 points</b>



		None of the above or in field far from the one requested	0 point
	<b>b- Expert 2</b> <b>Field of experience:</b> Geophysics/hydrology/ hydro-biology	Experience in similar studies on hydrology / bathymetry / oceanography or equivalent	<b>5 points maximum</b> <i>(2.5 points/ similar study)</i>
		No similar study	0 points
		MSc degree in Marine Geophysics/hydrology or equivalent field	<b>3 points</b>
		University degree and at least 4 years of related professional experience	<b>1.5 points</b>
		None of the above or in field far from the one requested	0 point
		<b>d- Expert 3</b> <b>Field of experience:</b> Marine and coastal pollution, hydrobiology	Experience in aquatic contaminants/ eutrophication/ marine litter / chemical oceanography or equivalent
	No similar study	0 point	
	MSc degree in chemical engineering / chemistry / biology / hydrology / oceanography or equivalent field	<b>3 points</b>	
	University degree and at least 4 years of related professional experience	<b>1.5 points</b>	
	None of the above or in field far from the one requested	0 point	
	<b>d- Expert 4</b> Field of experience: Remote Operational Vehicle	Experience in ROV piloting in similar studies	<b>6 points maximum</b> <i>(2.5 points/ similar study, 0.5 additional point/reference in the Mediterranean</i>
No similar study		0 points	

		University degree in marine conservation, marine biology, biology, Oceanography, Marine Living Resources, Aquatic ecosystems fisheries, coastal zone management or equivalent field	<b>5 points</b>
		University degree and at least 4 years of related professional experience	<b>2.5 points</b>
		None of the above or in field far from the one requested	0 points
	<b>d- Expert 5</b> <b>Field of experience:</b> , GIS mapping	Experience in GIS studies (sea and/or land)	<b>5 points maximum</b> <i>(2.5 points/ similar study)</i>
		No similar study	0 points
		MSc degree in geomatics, computer engineering, environmental science or equivalent field	<b>3 points</b>
		University degree and at least 4 years of related professional experience	<b>1.5 points</b>
		None of the above or in field far from the one requested	0 point
<p><b>Each expert (including the project leader) can not hold more than 2 positions. In this case, his CV will be evaluated separately for each position following the above criteria.</b></p> <p><b>In case the bidder proposes more than one expert per position, each CV will be evaluated separately, and the lowest score given will be the one attributed to that position.</b></p>			
<b>3- Methodology, planning time schedule, chronogram of intervention of the team, and complete</b>	<b>a- note</b>	<b>The methodological</b>	Methodology clearly presented, well developed and meets the terms of reference and the study's objectives
			12 points  3 additional points will be attributed if the methodology includes the contribution of

list of equipment to be used for both field survey and laboratory analysis			at least one Albanian institution in the study <b>(15 points max)</b>
		Methodology more or less well developed but meets the terms of reference and the study's objectives	7.5 points  2.5 additional points will be attributed if the methodology includes the contribution of at least one Albanian institution in the study <b>(10 points max)</b>
		Methodology poorly developed and meets more or less the terms of reference and the study's objectives	3.5 points  1.5 additional points will be attributed if the methodology includes the contribution of at least one national Albanian institution in the study <b>(5 points max)</b>
		Methodology not clearly presented and does not meet the terms of reference and the study's objectives or no methodology presented	0 points
	<b>b- Planning, time schedule, chronogram of intervention of the team, and list of equipment to be used</b>	Realistic planning clearly presented, coherent with the chronogram of intervention of each expert and the time schedule considering the requested time for reports validation and the list of equipment to be used	<b>10 points</b>

		Realistic planning but more or less well presented, fairly coherent with the chronogram of intervention, the time schedule and the list of equipment to be used	5 points
		Planning unclearly presented, doesn't respects the deadline, or no planning, or no chronogram, or no time schedule and no list of equipment to be used presented.	0 point

Any offer that has not attained the minimum score of 80 points will be eliminated. In the event no offer obtains 80 points or more, the offer processing will be canceled.

### 8.2 Evaluation of the financial offers

Once the technical evaluation has been completed, the financial offers of the offers that have not been eliminated during the technical evaluation will be opened and examined.

The evaluation committee will check that the financial offers do not contain any obvious arithmetical errors. Any possible obvious arithmetical errors will be corrected, and the corrected figures will be taken into consideration.

The evaluation committee will then proceed to a financial comparison. The lowest financial offer will receive 100 points. The other offers will be attributed a score based on the following equation:

**Financial score = (amount of the lowest offer/amount of the offer in question) x 100**

### 8.3. Conclusions of the evaluation commission

The choice of the best offer is achieved by weighting the technical and financial scores using a distribution key of 80/20 basis. To this end:

- The technical score will be multiplied by a coefficient of 0,80.
- The financial score will be multiplied by a coefficient of 0,20.

The weighted technical - financial scores thus calculated will be added to ascertain the offer with the best technical and financial score.

If two offers obtain the same technical-financial scores, preference will be given to the firm in the following order:

- having obtained the best technical score
- having obtained the best total score for experience and qualifications of experts.
- having obtained the best score for methodology.

### Article 9-- Deadline for the execution of the mission

The maximum time allocated for carrying out the study is 160 days as from the date of signature of the contract, including the deadlines for handing in the final documents and deliverables according to the following timeline:

<b>Deliverables</b>	<b>To be submitted</b>
<b>Phase I</b>	
Phase I 1st draft report	30 days maximum from the contract signature
Phase I Final report	10 days maximum from the reception of comments and request for revision from SPA/RAC
<b>Phase II and phase III</b>	
Draft report of the field survey and GIS Maps, Videos and Photos	140 days from the contract signature
Final report of the study and GIS Maps and Final Videos and photos and executive summary of the final report of the study translated in Albanian	20 days maximum from the reception of the SPA/RAC comments on the Draft report of the field survey, GIS Maps, Videos and Photos

The evaluation of the draft deliverables (reports, maps, etc.) will be carried out by SPA/RAC within a maximum of 15 days from the submission of the deliverables by the provider.

The meeting in Albania to present the study results will be organized at least 15 days after the 2nd Drafts report of the field survey study submission by the provider to the SPA/RAC.

The evaluation of the final deliverables (reports, maps, etc.) will be carried out by SPA/RAC within a maximum of 15 days from the submission of the deliverables by the provider.

**Article 10 - Monitoring, control and validation of the work**

The service provider will work under the supervision of a steering committee composed of SPA/RAC, the Albanian GEF Adriatic Project Coordinator and the MSP Pilot project coordinator. The service provider will submit the deliverables for each of the phases. The service provider will submit in the final version of deliverables 10 days after steering committee has made its observations and comments on the draft report and the validation meeting.

**Article 11- late penalty fees**

If the service provider does not complete the services for which he is responsible within the contractual deadlines as per article 9, a penalty of one two-hundredth (1/200) of the total contract amount (including taxes) for each calendar day of delay, will be imposed as of right and without prior notice.

The late penalty amount will be deducted from the settlement amount.

The penalty amounts are capped at 10% of the total contract amount, inclusive of taxes. When this cap level is reached, SPA/RAC reserves the right to terminate the contract to the service provider’s detriment, in conformity with article 16 below, without the service provider being able to raise any opposition or claiming any compensation whatsoever.

**Article 12-Copyright, ownership of documents**

All materials produced, including maps and photos, within the scope of this contract are intended for free distribution and will be the property of the Albanian Ministry of Tourism and

Environment and UNEP/MAP-SPA/RAC and the names and logos of the Albanian Ministry of Tourism and Environment, the UNEP/MAP, the UNEP/MAP-SPA/RAC, the GEF Adriatic Project and the GEF will appear as appropriate; mention will be made of the financial support provided by GEF.

The material produced from the implementation of this contract can't be sold or used in any way or any form for commercial purposes; the contrary will put the provider under the relevant legal coercive measures.

#### **Article 13-Arbitrage, dispute settlement**

Every dispute arising from or in connection with this contract execution shall be solved by way of amicable negotiations by the parties. This agreement is deemed to have been made in Tunisia and to be subject to Tunisian law. In case of dispute, the Court of Tunis is competent.

#### **Article 14-Liability & insurance**

The SPA/RAC does not accept any liability for acts of third parties, accidents, sickness, losses of any kind, however caused arising during the implementation of the specific actions and the production of the relative outputs expected. The bidder confirms that their selves or any involved staff will be covered by appropriate insurance.

#### **Article 15: Force majeure**

Force majeure means any event outside the control of a Party so that it is impossible for one party to carry out his obligations or the implementation of these obligations becomes so difficult that it is considered to be impossible to carry them out under such circumstances.

The party which invokes force majeure must inform his co-contractor within seven (07) days of its occurrence so that the contractual deadline will be suspended with a joint agreement between the parties for the period which is covered by the case of force majeure.

SPA/RAC has a right to assess the circumstances of the impediments invoked by the holder as a case of force majeure to see if they are convincing and should this not be the case, then the days of discontinued work will be accounted for as days of delay.

Failure by either Party to fulfill any of his contractual obligations does not entail a contract termination or failure to fulfill his contractual obligations if such a failure is due to a case of force majeure, if the Party that finds himself in such a situation has done the following

- a. has taken all the reasonable precautions and measures to allow him to comply with the terms and conditions of the present contract; and
- b. has informed the other Party of the event as soon as possible. Any timeline given to a Party for the execution of his contractual obligation will be prolonged by a period which is equal to the period during which that Party was prevented from fulfilling his obligations.

Any timeline given to a Party for the execution of his contractual obligations will be prolonged by a period which is equal to the period during which that Party was unable to fulfill his obligations due to the case of force majeure.

#### **Article 16: Cancellation conditions**

SPA/RAC could cancel this contract in case of the no respect of the deadline of the execution in application of Article 9. Duration, deadlines and schedule for the implementation ; and in the case described in the article 11- Penalty when the amount is capped at 10% of the total amount of the contract or of the non-conformity to the content of the service listed in the technical

specification of the present tender documents. In case of cancellation, the payment will be done in proportion to the tasks already carried out.

#### **Article 17: Provisional and final acceptance**

The provisional acceptance is pronounced after complete completion of the services, that is, after the finalization of all the phases described in the article 9 and paragraph 5.1. Methodology and phases of the "Technical Specifications". The evaluation of the deliverables of the different phases (reports, maps, etc.) will be carried out by SPA/RAC according to the article 9. The provisional acceptance will be pronounced only in the case of complete conformity deemed conclusive by SPA/RAC and a provisional acceptance report will be signed jointly by the service provider and SPA/RAC. The service provider must correct any deficiencies identified by SPA/RAC in the completion of the different phases.

Final acceptance will be given two (2) months after the date of provisional acceptance without reservation of the contract. The final acceptance report will only be delivered once the service provider has fulfilled all his obligations resulting from the paragraph 5.1. Methodology and phases of the "Technical Specifications" and after corrections of any deficiencies signaled by SPA/RAC.

**ANNEX 1**

**SUBMISSION LETTER**

I, the undersigned ..... (Director) of  
.....recorded in the commercial register on .....under the  
number ..... Domiciled at .....  
After having taken due note of the dossier documents of the call for tenders N° .....  
launched by ....., pertaining to a mission of .....

I hereby pledge to execute the requested services in conformity with the provisions defined in the documents referred to, for the prices as established by myself without taking into account the taxes and knowing that the stamp duties and registration are to be covered by the insurer.

The total price of my bid amounts to ..... (.....) US Dollars

I take due note of the fact that you are not obliged to proceed with the tendering procedure and that I cannot claim a compensation.

I pledge that the conditions in my tender will remain valid for a period of one hundred and twenty days (120 days) starting from the day after the date for the deadline for the receipt of tenders.

SPA/RAC pledges to pay the amount after the signing of a convention into the bank current account of the Bank ..... In the name of .....Under the number of ..... RIB (BIC - IBAN) .....

In ....., on .....

(Name, first name and function )

Right for submission

(Signature and official stamp )



## ANNEX 2 - DETAILS OF GLOBAL PRICE

The consulting firm, in support of its bid, should provide a breakdown of each unit price according to the following model:

Designation	Unit price USD (W/D)	1 <sup>st</sup> phase		2 <sup>nd</sup> phase		3 <sup>rd</sup> phase		Total phases (1+2+3)	
		Duration	Sub-total	Duration	Sub-total	Duration	Sub-total	Duration	Sub-total
<b>Fees :</b>									
Project leader									
Expert 1									
Expert 2									
Expert 3									
Expert 4									
Expert 5									
<b>Sub-total 1</b>									
<b>Other costs</b>									
Travel and accommodation costs for meetings/field work									
rental / use of field equipment: diving equipment, nets, sampling equipment, physical and chemical measures instruments, etc.									
rental / use of Vessel(s) and ROV									
on board and laboratory sampling analysis									
<b>Sub-total 2</b>									

<b>Other costs necessary for the proper execution of the present call for tender</b>									
Training/Meeting costs									
Report printing/translation									
Video and photo compilation and production									
<b>Sub-total 3</b>									
<b>Sub-total/phase</b>									
								TOTAL	

Amount of bid, is fixed at the sum of .....In ....., on .....

(Signature and official stamp of bidder)