

REQUEST FOR EXPRESSIONS OF INTEREST

Lebanese Republic

Lake Qaraoun Pollution Prevention Project

Consulting Services

Loan No. 8637-LB

The Government of Lebanon has received financing from the World Bank toward the cost of the Lake Qaraoun Pollution Prevention Project and intends to apply part of the proceeds for the cost of improving solid waste management in the Litani River and Qaraoun Lake watersheds. The Council for Development and Reconstruction (CDR) is in the process of hiring an independent consultant to work with LRA and ensure that the activities planned under Sub-component 3.2 are clearly defined and successfully implemented in an efficient manner. Contract duration is 6 weeks) and the details of the position are included in the Terms of Reference and summarized as follows:

Job Title: Technical Consultant for Litani River Authority (LRA)	Job reference: QC3C2a
<p>Duties and Responsibilities: The consultant will undertake the following three tasks as requested by LRA:</p> <p>Task 1: Water Quality Monitoring Support The main objective of this task is to help LRA establish a sound pollution monitoring system of Litani river for its abiotic and biotic components. This should be done in accordance with national regulations and international guidelines/best practices if national regulations are not established yet.</p> <ul style="list-style-type: none"> ▪ Check the assessments reports done by LRA and other national and international bodies to better understand the current capabilities of the LRA and the different roles of all stakeholders involved. ▪ Interview key players based on a methodology agreed with LRA and its partners, to better understand their current needs and objectives so that the written ToRs can meet the LRA expectations. ▪ Analyze the collected data to better understand the strengths and weaknesses of the current practices in order to draft the proper ToR. The analysis will pay particular attention to: (i) the sampling protocols including frequency and choice of sampling spots, (ii) quality control of analytical data issued, (iii) adherence to governance policies and regulations in Lebanon, (iv) international guidelines on managing major rivers (EU, EPA, ANZAC). The results of the analysis will include the following: <ul style="list-style-type: none"> ○ Sampling events: A description of the sampling methods and SOPs, sampling frequencies, the choice of sampling spots, Instruments used, samplers, preservation and transportation of samples, etc. ○ Analytical procedure: Writing of SOPs, Quality Assurance/Quality Control, proficiency testing, staff recruit and job description, purchase of instruments and material ○ Reporting and interpretation of data: Issuing of scientific reports on biotic and abiotic aspects of the river, publishing in international journals and on website, peer review ○ Provision of management system to link the activities from sampling to the analytical to the upper management: LIMS, GIS system to share data and for better monitoring ▪ Finally, prepare detailed ToR that can be followed by Firms who win the bids so they can implement it first in a simplistic and realistic approach which can open ways in the future for more improvement. These recommendations may then be used as a road map for the LRA. <p>Task 2 Clean-up Campaigns The LRA will design and initiate clean-up campaigns while raising the awareness of the</p>	

communities in the selected areas of interventions on the impacts of the current negative behavior and disposal practices.

The impact of awareness should be to the extent possible, monitored over time with a simple survey, at an agreed frequency, to assess the change in level of knowledge and engagement of stakeholders who benefitted from the campaign.

The Consultant shall develop the ToR to cover more specifically:

- Define the cleanup activities required at the river banks that can become an annual activity
- Establish a protocol for the clean-up activities to avoid any negative environmental and social impacts
- Assist LRA in coordinating with Qaraoun municipality Union and other concerned entities for the identification of a select number of hot spots to implement clean-up campaigns to be agreed upon based on proposed budget
- Develop a proposed workplan and budget for the proposed activities
- Identify the best use of communication material, including but not limited to social media and pamphlets, and define the scope of work a communication specialist to be hired to accompany the clean-up activities.

Task 3 Specifications for the Trash Skimmers

LRA has indicated its willingness to purchase through the LQPPP trash skimmers to be operated by the authority during and beyond the lifetime of the project. For that, in coordination with CDR and LRA the consultant will:

- Establish the specifications for trash skimmers that are suitable for the conditions in the Litani river and can be operated and maintained by LRA on the medium term
- Identify providers to seek offers
- Include in the specifications the need for provision of operational & maintenance training with contracts.
- Preparation and submission of the Bidding Documents for the purchase of trash skimmers.

Qualifications:

The Consultant will have the following qualifications and proven experience as a minimum:

Education qualification of the consultant:

- Postgraduate or other advanced university degree (at least M. Sc. or equivalent) in the area of ecotoxicology or any other relevant domain.

Experience of the Consultant:

- At least 10 years of professional experience in in the area of ecotoxicology or any other relevant domain • Demonstrated experience in conducting sampling events • Conceptual and practical knowledge of local policies
- Experience of working and collaborating with stakeholders including governments; local authorities • Demonstrated ability of analytical skills and data interpretation • Knowledge of sampling and analytical techniques and instrumentation

Languages

- Excellent written and verbal communication skills in English;
- Working knowledge of French and Arabic will be an added advantage.

Interested candidates are invited to express their interest through formally addressing the CDR at the address below, enclosing their CVs, not later than **Tuesday January 10th, 2023**.

Attention: The President of the CDR
Address: Council for Development and Reconstruction (CDR)
Tallet Al-Serail, Beirut (Beirut Central District), Lebanon
Tel. +961-1 980 096 / Fax +961-1 981 252 / 253

Lake Qaraoun Pollution Prevention Project

TERMS OF REFERENCE

Technical Consultant for Litani River Authority (LRA)

Design and Implementation Support of Water Quality Monitoring and Clean-Up Campaigns

A. PROJECT BACKGROUND AND OBJECTIVES

The Litani River is the principal artery of Lebanon. Rising from the Olleiq springs close to the city of Baalbeck, it flows for 170 km through the Beqaa valley and the Qaraoun Lake, before it reaches the Mediterranean Sea. The upper Litani River catchment extends over an area of 1,500 km² (10 percent of the Lebanese territory) and comprises 99 towns distributed into four administrative districts: Baalbeck, Zahlé, West Beqaa, and Rachayya.

The major water structure along the Litani River is the Qaraoun Dam, which forms the Qaraoun Lake. Qaraoun Lake is the largest artificial lake in Lebanon. It is situated in West Beqaa at an altitude of 800 m and covers an area of 12 km². The lake has a storage capacity of 220 million m³, of which 160 million m³ are used for irrigation and hydropower and the remaining for dry season storage.

The river and the basin received in addition to the rainfall (700 mm/year) loads of wastewater from industries (estimated at 4 million m³/year untreated effluents) and domestic water from 69 villages scattered all along its length (about 46 million m³/year of untreated sewage) and solid waste (650 tons per day). In addition to the waste effluents, the river receives excessive pesticides and fertilizers from agricultural activities. This led to a degradation of the water quality over the years.

In 2005, the Litani River Authority created the Environmental Unit and tasked it with the continuous monitoring of surface water quality. In 2010, The Ministry of Environment (MoE) commissioned a Business Plan to help the Government of Lebanon (GoL) identify the major sources of pollution in Qaraoun Lake and recommend appropriate solutions to mitigate them. The Business Plan identifies the two largest pressures as municipal wastewater and agriculture. Action on agriculture sources of pollution is needed to improve the overall surface water while continuing to contribute to the agriculture sector, a key sector, in the Beqaa Valley. Municipal wastewater priority actions identified relate to increasing the volume of wastewater treated in Zahlé, Iaat, Temninm El Tahta, Anjar/ Majdel Anjar/ Qabb Elias (hereafter referred to as Anjar Wastewater Treatment Plant -WWTP), Jeb Jannine where the population and economic activity are most dense. The proposed Lake Qaraoun Pollution Prevention Project intends to reduce water pollution to safeguard precious water resources

The Government of Lebanon is currently implementing, through the Council for Development and Reconstruction (CDR), the Lake Qaraoun Pollution Prevention Project (LQPPP) financed by a World Bank Loan, which supports the implementation of a number of actions identified in the Business Plan. The project is implemented in close collaboration with the concerned ministries and agencies, including the Ministry of Energy and Water, the Ministry of Environment, the Ministry of Agriculture, the Litani River Authority and Beqaa Water Establishment, which have technical oversight over their respective sectors and participate in reviewing engineering designs, consultants TOR, and deliverables, etc.

The development objectives of the project are to reduce the quantity of untreated municipal sewage discharged into the Litani River and to improve pollution management around Qaraoun Lake; and it includes the following components:

- **Component 1:** Design and construction of around 265 km of sewage networks to connect to Zahle WWTP, Anjar WWTP, and Aitanit WWTP.

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- **Component 2:** Promotion of Good Agricultural Practices (GAP), including Integrated Pest Management (IPM), and the use of sustainable production systems to reduce agrochemical pollution in the upper Litani basin.
- **Component 3:** Technical and environmental studies in Solid Waste Management (3.1). Capacity Building in the wastewater field for BWE and MoEW staff (3.2). Improving of the water quality monitoring network, water resources modeling and raising of awareness for the cleanup of the Litani River (3.3).

The detailed activities to be implemented under Component 3 by the Litani River Authority (LRA) are detailed under Sub-component 3.2 and summarized below:

- **Subcomponent 3.2: Improvement in Water Quality Modeling – LRA**

The LRA has been assigned the secretariat responsibility of the Qaraoun Committee that was established to follow up on the Roadmap for Combating Pollution in the Qaraoun Lake. To support the LRA in its secretariat role and building on the achievements of the USAID-funded Litani River Basin Management Support Program, this component focuses on (a) improving water quality monitoring network and water resources modeling; and (b) raising awareness for the cleanup of the Litani River.

B. OBJECTIVE OF THE ASSIGNMENT

The Project is therefore seeking to hire an independent consultant to work with LRA and ensure that the activities planned under Sub-component 3.2 are clearly defined and successfully implemented in an efficient manner. For that, the Consultant will more specifically define the detailed scope of work of each activity and develop the necessary terms of reference (ToR) for each task. The CDR may request the Consultant to assist LRA and the Project Management Unit (PMU) in the initiation of the activities and monitoring their implementation, whereas the contract may be extended with additional days (up to 20 days or as needed) to cover the support task.

C. DETAILED SCOPE OF WORK

Specifically, the selected consultant will undertake the following three tasks as requested by LRA:

Task 1: Water Quality Monitoring Support

The main objective of this task is to help LRA establish a sound pollution monitoring system of Litani river for its abiotic and biotic components. This should be done in accordance with national regulations and international guidelines/best practices if national regulations are not established yet.

- Check the assessments reports done by LRA and other national and international bodies to better understand the current capabilities of the LRA and the different roles of all stakeholders involved.
- Interview key players based on a methodology agreed with LRA and its partners, to better understand their current needs and objectives so that the written ToRs can meet the LRA expectations.
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 - Sampling events: A description of the sampling methods and SOPs, sampling frequencies, the choice of sampling spots, Instruments used, samplers, preservation and transportation of samples, etc.
 - Analytical procedure: Writing of SOPs, Quality Assurance/Quality Control, proficiency testing, staff recruit and job description, purchase of instruments and material
 - Reporting and interpretation of data: Issuing of scientific reports on biotic and abiotic aspects of

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- the river, publishing in international journals and on website, peer review
- Provision of management system to link the activities from sampling to the analytical to the upper management: LIMS, GIS system to share data and for better monitoring
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D. DELIVERABLES

The selected consultant shall submit the following deliverables in accordance with the proposed time frame:

Deliverable	Tentative deadline from Notification Date
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Task 1: Water Quality Monitoring Support	
1.1 Draft note describing the proposed approach, detailed scope of work, estimated budget and proposed workplan	Week 3
1.2 Final note describing the proposed approach, detailed scope of work, estimated budget and proposed workplan, addressing all comments	Week 5
1.3 Terms of reference of the service provider including the deliverables, the timeframe, the estimated level of effort and the qualifications of the service provider	Week 6
1.4 Implementation support and monitoring (Optional)	Starting at implementation of activities
Task 2 Clean-up Campaigns	
2.1 Draft note describing the cleanup activities, including the proposed clean-up protocols and communication/awareness activities	Week 4
2.2 Final note describing the cleanup activities, addressing all comments	Week 5
2.3 Terms of reference of the service provider including the deliverables, the timeframe, the estimated level of effort and the qualifications of the service provider	Week 5
2.4 Terms of reference of Communication Consultant for awareness raising activities	
2.5 Implementation support and monitoring (Optional)	Starting at implementation of activities
Task 3 Specifications and Bidding Documents for the Trash Skimmers	
3.1 Note on the specifications of trash skimmers and potential vendors	Week 2
3.2 Bidding Documents for purchase of trash skimmers	Week 5

E. LEVEL OF EFFORT AND DURATION OF THE CONTRACT

The consultant is expected to take 20 working days (including site visits) spreading over six weeks to produce the deliverables and starting upon signature of the contract. Up-to 20 additional days will be needed for monitoring implementation and remunerated according to actual time spent.

F. REPORTING

The Consultant will report administratively to the PMU and technically to LRA. The consultant will also work closely with the Ministry of Energy and Water, the Ministry of Environment, CDR and other entities as needed and as requested by LRA.

G. TERMS OF PAYMENT

Payment will be done upon completion of work and its approval by all parties and in accordance with the following schedule:

- 55% after completion, submission and acceptance of Task 1;
- 30% after completion, submission and acceptance of Task 2;

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- 15% after completion, submission and acceptance of Task 3.

H. REMUNERATION (To be completed and submitted by the Consultant in his/her EOI)

Description	Working Days	Remuneration (USD/day)	Total Remuneration (USD)
Deliverables (Mandatory)	20 Days		
Sub-Total Contract Amount USD (Lumpsum)			
Implementation support and monitoring (<i>Optional</i>) up-to 20 days	20 Days		
Sub-Total Contract Amount USD (<i>Optional and based on actual time spent</i>)			
Total Contract Amount USD			

I. QUALIFICATIONS & PREVIOUS EXPERIENCE

The Consultant will have the following qualifications and proven experience as a minimum:

Education qualification of the consultant:

- Postgraduate or other advanced university degree (at least M. Sc. or equivalent) in the area of ecotoxicology or any other relevant domain.

Experience of the Consultant:

- At least 10 years of professional experience in the area of ecotoxicology or any other relevant domain • Demonstrated experience in conducting sampling events • Conceptual and practical knowledge of local policies • Experience of working and collaborating with stakeholders including governments; local authorities • Demonstrated ability of analytical skills and data interpretation • Knowledge of sampling and analytical techniques and instrumentation

Languages Skills

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