TERMS OF REFERENCE FOR CONTRACTORS/ CONSULTANTS

<table>
<thead>
<tr>
<th>Title of Assignment</th>
<th>Assessment of Climate Risk in Coastal Cities and Development of Tools for Informed Planning and Coordination part of the Project “Enhancing socio-ecological climate change resilience of marine and coastal systems in Lebanon.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Lebanon</td>
</tr>
<tr>
<td>Duration</td>
<td>50 weeks</td>
</tr>
<tr>
<td>From: October 16, 2020 To: October 31, 2021</td>
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**Background and Justification**

Lebanon is already facing and will continue to face, significant challenges as a result of climate change. The government of Lebanon has highlighted adaptation as a priority issue for the country and identified water, forestry & agriculture and biodiversity as priority sectors for adaptation (NDC).

Temperatures and precipitation extremes will intensify by the end of the century, causing the seasonal prolongation and geographical expansion of drought periods. Reduced rainfall and increased temperature will result in a decrease in snow level, a vital water source, which will negatively impact on Lebanon’s water supply, particularly during the period for high demand of water for irrigation and during summertime where the population of the country increases because of tourism. Intense rains will result in significant floods and infrastructure damages. The risk of forest fires will also increase significantly.

In addition, the Syrian crisis has resulted in an estimated 1.5 million refugees, increasing Lebanon’s population by 30% in just a few years and adding stress to the already-stretched economy and natural resources and hindering the country’s efforts to build a climate-resilient low carbon economy.

Recent studies show that climate change would impose significant direct damage costs from climate-related changes in net agricultural productivity, human health, the impacts of floods and storms on property, the value of services derived from Lebanon’s ecosystems, drought, etc. of about USD 320 million and cause Lebanon’s GDP to be about USD 1.6 billion, or 3%, smaller in 2020 than it otherwise would be. The forgone GDP would be about USD 14,100 million (14%) in 2040, and USD 115,700 million (32%) in 2080. The total cost, USD 1,900 million, in 2020 would be equivalent to about USD 1,500 per household, on average. These numbers suggest that the average cost per household would likely exceed average household annual earnings soon, which currently are about USD 12,000, with many households becoming impoverished.

Lebanon’s coastal strip is vulnerable to sea level rise, storm surges and increased sea surface temperatures. The majority of the country’s population and economic activity is concentrated in the coastal zone, including Lebanon’s four largest cities (Beirut, Saida, Tripoli, Tyre) and ports, which together contribute more than 74 percent of GDP. Critical infrastructure, roads, the national airport, commercial and recreational harbours, beach resorts, historical/archaeological monuments, diverse ecosystems and natural reserves (Palm Islands, Tyre Coastal Nature Reserve) are all located in the coastal region.

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There are several key climate related impacts particularly affecting the Lebanese coast including such as Sea Level Rise. It is estimated that sea level will rise to approximately to 30-60 cm in the next 30 years. This will increase erosion of sandy beaches threaten important infrastructure, increase intrusion of saltwater and affect important natural ecosystems. Water availability in the Mediterranean Basin will be reduced as a consequence of precipitation decrease, temperature increase, and population growth. Ongoing climate, environmental and socioeconomic changes pose threats to food security in Lebanon. Water scarcity, increasing drought periods, soil degradation and erosion will great affect agricultural production. Climate change and acidification significantly impact the fisheries sector. Ocean acidification will result in a decrease in the biomass of calcifying plankton organisms such as coccolithophorids. Shifts in plankton composition will provoke changes in the abundance on organisms feeding directly on plankton and then on all levels of the food web.

**Scope of Work and Objectives.**

Under the direction of Marine Programme Manager, the Team will do the following but not limited to:

1. Map major climate hazards that occurred in coastal cities based in available literature
2. Assess resources of the local government and other stakeholders in addressing climate risks including early warning and early actions, in high risk cities along the coast
3. Develop a platform for climate change risk and planning in Lebanese coastal cities to highlight priorities, needs and coordination potential

**Work relationships:**
The Team shall report to IUCN Marine and Coastal Zone Management Unit, Lebanon.

**Deliverables**

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Date</th>
<th>Measurable Outputs of the Work Assignment / Quality Control Measures</th>
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</thead>
<tbody>
<tr>
<td>Detailed methodology and work plan summarizing selected sites, adopted tools and techniques, and timeline</td>
<td>4 weeks from contract signature</td>
<td>Well-identified and described report and content.</td>
</tr>
<tr>
<td>Major climate hazards that occurred in coastal cities based in available literature</td>
<td>14 weeks from first deliverable</td>
<td>- Identify potential impacts of climate variability on key sectors, and highlight their physical impacts.</td>
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<td>- Propose set of potential actions to address the impacts.</td>
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<td></td>
<td>- Assessing strengths and weaknesses of the local government and other stakeholders in addressing</td>
</tr>
<tr>
<td>A report, assessing current government strategies and plans regarding climate variabilities and risks</td>
<td>14 weeks from second deliverable</td>
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climatic challenges including early warning and early actions

Lebanon Climate change Platform

18 weeks after third deliverable

Provide the necessary tools and information to establish an online platform for “Lebanon Coast Cities Climate Change Impact” a national online platform for knowledge sharing and setting climate priorities and needs. The online interface will help coordinate efforts in combating climate change. The platform will be hosted on IUCN server and will have a dedicated page.

Duration and Schedule

The time duration for the implementation of the activities within this assignment starts upon the signature of the contract for a period of 50 weeks and ends no later than October 31st, 2021.

Qualifications of Successful Candidate

Personal resume indicating all past experiences in Vulnerability and Socio-economic Impact Assessment
The applicant must have a background in socio-economic analysis
Proper knowledge of Lebanese’s natural environment and socio-economic sector
Proper knowledge of Lebanese laws and policies related to climate change
The successful team must meet or exceed the below:
Team Leader, this role is integral to ensuring coordination of tasks and quality of technical deliverables. This role serves as the primary point of contact for assignment with IUCN, and relevant government officials.
Advanced degree in climate science and working knowledge of climate projections for Lebanon.
Experience coordinating research activities with multiple personnel, timelines, and stakeholders.
Experience in Lebanon and fluency in Arabic and English preferred, French is a plus.

Climate Data Specialist(s): The climate specialist will prepare a baseline assessment of climate trends at the resolution of the available data, as well as assess future climate risks for the same. They will also work with the socio-economic specialists to define relevant thresholds for the analysis of climate change and provide these data to the socio-economic specialist.
Advanced degree in climate science with demonstrated experience in climate analysis and modelling.
Robust experience working in and an emphasis on Lebanon and the Mediterranean region.

Payment Schedule
The Team will submit a financial offer based on three instalments. Upon signature of contract with the selected Team, the Team must submit an invoice. The Team is responsible to submit relevant invoices with the deliverables and payment will be made upon satisfactory completion of each of the deliverables.

**Due to the current pandemic and the associated flight risks, international applicants will be disregarded**

**Nature of penalty clause in contract**

If the fieldwork, reports and documents are not submitted according to, the deliverables and timeframe stated in this TOR, the payments would be withheld.

IUCN ROWA reserves the right to withhold all or a portion of payment if performance is unsatisfactory, if work/outputs is incomplete, not delivered or for failure to meet deadlines. All materials developed will remain the copyright of IUCN and IUCN will be free to adapt and modify them in the future.

**How to apply**

Submit CVs of the Team, a strong justification for your application and a financial proposal with a brief methodical note. Also, include the financial proposal for undertaking the assignment. Please, remember, this is an assignment part of project. Submit to ziad.samaha@iucn.org by no longer than October 6, 2020, 13:30 Beirut time. Consider your application unsuccessful if you do not hear from us.