**Title of Assignment**
National consultant to Develop a National Fisheries Spawning Calendar for Lebanon, under Project “Enhancing socio-ecological climate change resilience of marine and coastal systems in Lebanon.”

**Location**
Lebanon

**Duration**
13 Months
From: March 31, 2020 To: April 30, 2021

**Background and Justification**

Fish reproductive biology is crucial for fishery management, especially in developing countries such as Lebanon, where managers rely on size at first maturity and the onset and duration of spawning season for managing fisheries. Despite the importance of fish biology, the lack or scarcity of fishery data in Lebanon leads to overexploitation of the stocks and management failure in some cases. Spawning season has a temporal scale, with most fishes exhibiting one or two spawning seasons a year. The success of reproductive activities depends on the match between spawning season and the best conditions for larval survival. Hence, it is fundamental to have basic biological data in order to conduct a reliable management system.

Through the project “Enhancing socio-ecological climate change resilience of marine and coastal systems in Lebanon.” Funded by the Royal Norwegian Embassy in Beirut, grant LBN-18/0016 and based on a Letter of Agreement with the Ministry of Agriculture in Lebanon, IUCN ROWA will prepare the spawning calendar for the most targeted species. Based on the previous assignment of a peer reviewed and published checklist of Marine Bony and Cartilaginous Fish of Lebanon, IUCN ROWA seeks to establish a one-year programme to prepare an accurate spawning calendar for the most targeted native species in Lebanese waters.

Thus, this consultancy was proposed based on the national need and requested by the Department of Fisheries and Wildlife at the Ministry of Agriculture with the main objective of compiling and analysing all available information (published or not) on reproduction for marine fishes in Lebanese waters. This assignment will not only depend on available information but will also run laboratory tests on fish species and analyse information on length at first maturity and spawning season for Lebanese marine fishes and how this information can be useful for fisheries management as well as marine conservation.

**Scope of Work and Objectives.**

Under the direction of Marine Programme Manager at IUCN ROWA, the consultant will develop an accurate, scientifically sound spawning calendar for the most targeted native fish of Lebanon based on the following but not limited to:

1. Literature review of relevant documents
2. Regular species check at laboratory to assess general data, length at first maturity and reproductive-load
3. Support the spawning calendar with the following:
   - Data collection: Sampling strategy/design, including spatial and temporal coverage and sampling intensity
   - Age-length stock structure: Length stock composition, Age-length key, Sex ratio
   - Maturity staging: Macroscopic maturity staging, Microscopic maturity staging, Validation and methodological calibration
Fecundity: Total spawners, Partial spawners
Maturity ogives and spawning proportion: Methods: estimating maturity ogives, Validated maturity ogives, Combined vs separated maturity ogives, Ogives in hermaphrodites

4. Include the status of the species according to last updated version of the IUCN Red List if applicable
5. Must include all native fish species of commercial value target by professional or recreational fishermen.
6. Provide recommendations for follow up and next steps in the form of an outline draft action plan.
7. Provide good quality photos of laboratory tests, with focus on develop gonads to be used in publication and reports.

**Work relationships:** The consultant shall report to Marine and Coastal Zone Management Unit, Mira Husseini and Ziad Samaha

**Deliverables**

**March 31, 2020 – April 21, 2020**
1. Provide a detailed methodology, plan of work and list of native fish species of high commercial values

**April 22, 2020 – November 30, 2020**
2. First Report on the Species assessed and progress made so far. The report must include data covering the following: data collection: sampling strategy/design, including spatial and temporal coverage and sampling intensity
   - Age-length stock structure: Length stock composition, Age-length key, Sex ratio
   - Maturity staging: Macroscopic maturity staging, Microscopic maturity staging, Validation and methodological calibration
   - Fecundity: Total spawners, Partial spawners
   - Maturity ogives and spawning proportion: Methods: estimating maturity ogives, Validated maturity ogives, Combined vs separated maturity ogives, Ogives in hermaphrodites
3. Present the finding and discuss them in a closed meeting with Ministry of Agriculture, and relevant national fisheries experts.

**December 1, 2020 – March 31, 2021**
4. Final Report on all the species assessed. The report must include data covering the following: data collection: sampling strategy/design, including spatial and temporal coverage and sampling intensity
   - Age-length stock structure: Length stock composition, Age-length key, Sex ratio
   - Maturity staging: Macroscopic maturity staging, Microscopic maturity staging, Validation and methodological calibration
   - Fecundity: Total spawners, Partial spawners
   - Maturity ogives and spawning proportion: Methods: estimating maturity ogives, Validated maturity ogives, Combined vs separated maturity ogives, Ogives in hermaphrodites

**April 1, 2021 – April 30, 2021**
5. Based on the final approval of the report, the consultant will have to prepare detailed spawning calendar for all the species assessed
6. Disseminate the information in public workshop in the presence of the Department of Fisheries and Wildlife at the Ministry of Agriculture

**Payment Schedule**
The consultant is asked to submit an invoice with each of the above mentioned the deliverables and payment will be made upon satisfactory completion of each deliverable.

**Qualifications of Successful Candidate**

Personal resume indicating all past experience in the field of Mediterranean Fish,
Minimum requirement of doctoral studies in fish biology,
Minimum experience of proven 10 years of fish research and studies
Mandatory experience in fish process at laboratory
Contact details (email and telephone number)
Brief description of why the individual considers him/herself as the most suitable for the assignment, a methodological note, on how they will approach and complete the assignment.
Financial proposal

**Logistics Arrangements**

IUCN ROWA will provide the following arrangement:
Fresh locally caught fish from Lebanese fishermen and/or landing sites
Fish will be delivered frozen in zip-lock bags with date and landing site.
Alcohol 70 (if needed)
Jars and containers (if needed)
Experimental fishing trials to capture certain species that are not landed (if needed and must be justified)

Marine and Coastal Zone Management Team in Lebanon must be granted access to the laboratory for documentation and monitoring.

**Nature of penalty clause in contract**

If the reports and documents are not submitted according to the deliverables and timeframe stated in this TOR, the payments will 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 the required documents as listed above under “Qualifications of Successful Candidate” and a strong justification for your application to ziad.samaha@iucn.org before March 20 2020 13:30 Beirut time. Consider your application unsuccessful if you do not hear from us.