



## TERMS OF REFERENCE FOR CONSULTANCY

### Developing macroalgae/kelp as a blue carbon ecosystem

Languages Required:	English
Proposed Starting Date:	Dec 15, 2020 (TBD)
Proposed End Date:	Mar 1, 2021 (TBD)
Posting date:	28 October, 2020
Closing Date:	15 November, 2020

#### 1. Consultancy Objective

Conservation International and the Blue Carbon Initiative are seeking a qualified consultant to evaluate and summarize the current state of knowledge of the capacity of macroalgae (including kelp) ecosystems to sequester and store carbon. This assessment will be used by the Blue Carbon Initiative to provide a starting point for establishing the viability of macroalgae as a blue carbon climate mitigation tool and hence the potential for applying climate policy, carbon market mechanisms and other related approaches to actions in this ecosystem.

#### 2. Background

When protected or restored, coastal blue carbon habitats – mangroves, seagrasses and tidal marshes – sequester and store globally significant amounts of carbon, known as blue carbon. When degraded or destroyed, these ecosystems emit this blue carbon into the ocean and atmosphere, becoming sources of greenhouse gases. Over the last decade Conservation International (CI), with our partners in the Blue Carbon Initiative, have been building the networks and tools to reverse the ongoing global loss and accelerate restoration of blue carbon habitats by recognizing the climate importance of these ecosystems. These developments have spanned science, international and domestic policy, and established blue carbon as a viable commodity on carbon markets. The success of blue carbon as a tool to promote the conservation and restoration of key coastal habitats has raised the question - are there other marine ecosystems that should be recognized for their role in climate mitigation?

One of the more promising potential additions to the blue carbon family of ecosystems is kelp and other macroalgae. With the kelp farming industry growing at an increasing rate (examples include China, South Korea, and Nordic countries amongst others), there is interest in how both kelp farms and conservation and restoration of wild kelp ecosystems may lead to climate mitigation opportunities. At

the same time, within the scientific community there is ongoing debate about the extent to which kelp can be considered blue carbon at all. In order to meet the definition of a blue carbon ecosystem that provides climate mitigation benefits, it must be determined that the system can (1) affect the levels of green-house gases (GHG) in the atmosphere enough to influence climate; (2) be responsive to human activities that can either increase GHG emissions (e.g. habitat degradation) or decrease GHG emissions (e.g., habitat restoration and conservation), and (3) the ecosystem needs to reside within jurisdictional areas eligible for policy and management action. For kelp, both farmed kelp and wild kelp, these questions largely remain unanswered and conflicting data has left many in the science, policy, and industry sectors questioning whether or not kelp provides a meaningful climate solution.

Conservation International (CI) has more than a decade of experience in blue carbon conservation and restoration and is the established global leader in defining and leveraging blue carbon value for climate mitigation. CI has implemented effective blue carbon restoration and conservation in the Philippines, Costa Rica, Liberia, Panama, Colombia, Ecuador, Suriname, Brazil, Indonesia, Fiji, Timor Leste, China, and New Caledonia. In 2018, CI partnered with Apple on the first carbon market project in mangroves in Colombia using the methodologies designed specifically for blue carbon ecosystems. Additionally, CI advises governments in key countries on blue carbon related climate mitigation strategies. CI is also currently leading, with partners, the development of Guidelines for including blue carbon into countries Nationally Determined Contributions to the Paris Accord.

In addition to CI, thought leadership for the proposed project will come from the Blue Carbon Initiative. The Initiative was launched by CI, IUCN, and Intergovernmental Oceanographic Commission (IOC)-UNSECO in 2010. It brings together global mangrove, saltmarsh, and seagrass experts to establish the climate importance of these ecosystems and builds the essential science needed for including them in climate policy, financing, and management actions. This included working with the Intergovernmental Panel on Climate Change (IPCC) to create international guidelines for countries to include blue carbon in their GHG accounting and to develop blue carbon specific methodologies for the carbon market. In total, CI and the Blue Carbon Initiative have written more than 200 scientific papers which have directly impacted policy and project development. This includes international climate negotiations resulting in blue carbon ecosystems specifically being recognized for their climate value in the Paris Climate Accord. CI was also at the inception of the International Partnership for Blue Carbon, a partnership of national governments and supporting organizations that focus implementing blue carbon policy that is informed and actionable. CI and the Blue Carbon Initiative remain as technical advisors to the Partnership.

### **3. Activities and Deliverables**

The purpose of this consultancy is to provide an assessment of current knowledge of carbon dynamics in wild and farmed macroalgae ecosystems as a key input into evaluating the potential of macroalgae (including kelp) as a climate mitigation tool. Specifically, the consultant will

- A. Conduct a comprehensive assessment of the peer-reviewed and gray literature and summarize the current state of knowledge of carbon in macroalgae ecosystems including:
  - a. the carbon cycling, sequestration and storage in macroalgae systems, including the dynamics and pathways for macroalgae-related carbon transport and long-term storage in the deep sea;
  - b. the global distribution and characteristics of wild kelp ecosystems, variations in carbon storage and associated pathways for those ecosystems, the impacts of different anthropogenic stressors on carbon sequestration and storage, and the possible carbon benefits related to the mitigation of those anthropogenic impacts;

- c. the global distribution and characteristics of kelp farming and the variations in carbon cycling and storage in those different systems, including the role of fertilizers, and the carbon associated with kelp harvesting - both emissions related harvesting and avoided emissions related to substituting kelp for other higher carbon footprint alternatives).

*Deliverable: A written report, annotated with a full bibliography and a library of the literature reviewed (in pdf format). A full draft report will be due two weeks before the final contract date so that CI can provide review and feedback.*

- B. Identify at least 30 individuals, projects and organizations with globally recognized expertise and experience relevant to carbon in wild and farmed macroalgae/kelp globally.

*Deliverable: A written list of the leading individuals and organizations with contact details and a short summary of relevance to carbon in macroalgae/kelp ecosystems and/or farming.*

#### **4. Period of performance and level of effort**

It is expected that the work will commence no later than 15<sup>th</sup> December 2020 and will end no later than 1<sup>st</sup> March. The assignment will begin with initial video-conference consultation with CI to better understand the requirements of the work. Additional videoconference meetings will be held to provide input and monitor progress.

#### **5. Qualifications and experience**

The expertise and experience that CI is seeking for successful completion of the consultancy is listed below.

- Proven knowledge of carbon dynamics on coastal ecosystems.
- Proven research skills and access to academic and other literature.
- Excellent written and verbal communication skills in English.
- Competence in the use of standard Microsoft Office applications (Word, Excel, Access, PowerPoint).

The duties outlined for this consultancy may be carried out by one or more individuals.

#### **6. Compensation**

CI will issue a fixed-price contract for this work. Offerors should include their daily or hourly rate, inclusive of all applicable fees and taxes expressed in US dollars in their proposal to CI. Per the consultant's proposal and subsequent negotiations, the contract will include a set of fixed payments based on submission of deliverables Prior to commencement of work, a Service Agreement will be prepared by CI for signature by both parties.

#### **7. Evaluation and Basis for Award**

An award will be made based on:

- Personal qualifications (25 points)
- Experience with similar assignments (25 points)
- Proposed methodology, timeline, and cost (50 points)

#### **8. Submission of an application**

Enquiries and applications should be submitted to Conservation International, by 15 November 2020. Applications should be limited to three pages, include the consultant's fee proposal per section 6.

For more information, please contact [marine@conservation.org](mailto:marine@conservation.org).