

TERMS OF REFERENCE

To promote assessment on carbon footprint and carbon neutral certification in the fisheries sector

Title: Internalizing climate action best practices in the fisheries industry, through a carbon footprint assessment, and the preparation of carbon mitigation recommendations for a small-scale fishing enterprise

Location: Belize

Duration: 90 days over a period of 4 months

1. Introduction

The ocean has the biggest industries, as it provides primary source of protein for 7.2 billion people, contributes to international seafood trade worth over US\$ 164 billion¹, and supports the vast marine species biodiversity of the planet. The ocean has the potential to produce blue food, including fish, shellfish, and seaweed, and plays a vital role in carbon storage; with 83% of the global carbon cycle is circulated through the ocean through mangroves and salt marshes providing carbon sinks in the form of blue carbon. Climate-related impacts will affect the marine ecosystem. Rising temperatures are changing the physical and the chemical properties of the ocean: changes in levels of oxygen, salinity, sea-level rise, hydrographic structure, currents, and ocean acidification. These changes may lead to shifts in abundance and distribution of fish population, increase in invasive species, changes in migration patterns of fish, and disruption of marine food webs.

Under the Paris Agreement, countries have agreed to keep the global temperature rise below 2⁰C. The IPCC's 2014 report noted that a concentration of greenhouse gases in the atmosphere of 450 ppm CO equivalent gives us a 66% chance to comply with the Paris Agreement's 2⁰C goal. However, the National Oceanic and Atmospheric Administration of the United States Department of Commerce (NOAA) reported that in 2020 we were already at 504 ppm CO₂e. Stopping the rise in temperature requires action by all industries and sectors, including fishing.

Although, fishing and aquaculture produces a lower CO₂ emissions per unit output compared to other protein sources, it contributes significantly to global CO₂ emissions, as fossil fuel is its main energy source for fishing vessels.

A seafood product's carbon footprint (synonyms with GHG footprint, GHG inventory) represents the amount of greenhouse gas (GHG) emissions released during its production, transport, and consumption, calculated as carbon dioxide equivalent (CO₂e), based on established methodologies². It takes into consideration all the emissions generated directly and indirectly; including fuel burnt directly to power fishing vessels, to purchase electricity for processing and refrigeration and the emissions from services and products brought from external suppliers. Geer et al., 2019 estimated that CO₂ emissions of the world's fishing fleet were in the range of 178-207 million in 2016, which was about 0.5% to the total global carbon emissions from human activities and 4% of emissions associated with food production. Another estimate of carbon footprint values for wild seafood products (per kg protein) ranges from 4 kg to 540 kg, compared to a range of 4 kg to 75 kg for aquaculture. The fishing industry can lower its fuel costs, reduce its greenhouse gas emissions, and decrease the damage it inflicts on marine ecosystems, by improved fuel utilization,

¹ <http://www.Climatechampions.unfccc.int/how-can-fishing-sustain-us/>

² Madin, E.M.P. and Macreadie, P.I. Incorporating carbon footprints into seafood sustainability certification and eco-labels. *Marine Policy* **57**(2015) 178-181.

deploy low carbon emitting technologies, and efficient fisheries practices management systems, to mention a few^{3,4}.

In response to the need to reduce GHG emission in the fisheries sector, the Caribbean Regional Fisheries Mechanism (CRFM) is keen to better understand the impact of small-scale fisheries on emissions. According to the UNs Framework Convention on Climate Change (UNFCCC) measuring carbon footprint is considered a keyway of contributing to the achievement of international climate action goals. It allows organizations to more accurately see where the main impacts on their carbon footprint are generated and, thus, to take appropriate actions to reduce it.

The CRFM is the key regional fisheries body for the Caribbean and has an extensive record of fisheries and marine resource conservation and management in the region and is committed to promoting and driving sustainable development solutions in fisheries that benefit from and contribute to gender equality, youth empowerment, and decent work in the Caribbean. The CRFM was formally designated as the Competent Agency for implementing the Caribbean Community Common Fisheries Policy (CCCFP). The aim of the Policy is to ensure effective cooperation and collaboration among Participating Parties in the conservation, management and sustainable utilisation of the fisheries resources and related ecosystems in the Caribbean region to secure the maximum benefits from those resources for the Caribbean peoples and for the region. The CCCFP is operationalized through the Third CRFM Strategic Plan, which speaks to reducing environmental impact, such as reduced energy consumption: Strategic Objective 4.1c. Increased use of renewable energy and energy efficient harvesting, processing, and cold storage systems, and reduction of the region's reliance on fossil fuels in fisheries and aquaculture. Therefore, policy makers, and Fisheries and Aquaculture Managers in CRFM Member States are committed to this action.

To achieve its strategic mandate, the CRFM seeks to procure the services of a consulting firm or consortium to conduct a carbon footprint assessment for the small-scale lobster fishery conducted by the National Fishermen Cooperative Society (NFCS) Ltd., located in Belize, a CRFM Member State, as a pilot initiative. This consulting firm or consortium will work with the National NFCS) Ltd., the second largest fishers' cooperative in Belize, with seafood processing operations in Belize City and receiving facilities for fish and shellfish in Belize City and Placencia, to conduct a carbon footprint assessment, carbon management plan, and certification which will assist NFSC and by extension, Belize in moving its fishery development path to a low-carbon/carbon-neutral operation, in support of its blue economy development policy and strategy⁵.

The target business organization, NFCS, was registered in 1967, and as of May 25th, 2017, has a membership of 257 producing (fishers) and 270 non-producing members. It is a cooperative business organisation that is controlled and owned by its members, and which works in the interest of its members. The organization is governed and managed by a managing committee (Board of Directors) elected by the membership. The cooperative produces lobster tails, lobster meat, finfish, and conch. The NFCS employs a staff of about 60 men and women within its processing and administrative facility during peak seasons and gross sales of about USD 5 million per season. However, much of this goes back into the cost of goods sold which includes paying for products purchased from fishers, and related processing expenses which stand at around 80% of gross sales. Beyond this, selling and other administrative expenses are further deducted reducing the profit margin even further. The NFCS, therefore, has a very narrow margin with which to operate and any increase in the Cost of Sale goods could significantly reduce an already low

³ Driscoll, J. & Tyedmers, P. Fuel use and greenhouse gas emission implications of fisheries management: the case of the New England Atlantic herring fishery. *Mar. Pol.* 34, 353–359 (2010)

⁴ Kristofersson, D. et al., Factors affecting greenhouse gas emissions in fisheries: evidence from Iceland's demersal fisheries. *ICES Journal of Marine Science* (2021), 78(7) 2385-2394

⁵ Belize Blue Economy Development Policy, Strategy and Implementation Plan 2022-2027 and the Belize Maritime Economy Plan.

margin. It is noted that achievement of a low carbon or carbon neutral certification could translate to increased access to funding opportunities and profit on the international market.

The NFCS currently partners with several NGOs and the Fisheries Department to promote sustainable fishing among its membership. Having been in existence for over 50 years, the NFCS has systems and processes that can handle the implementation of this project. Also, the managing committee meets regularly and has experience implementing projects, such as the adoption of an electronic catch documentation and traceability with the help of The Nature Conservancy to increase their operational efficiency and provide storied fish to consumers.

2. Purpose

The overall purpose of the consultancy is to contribute to the introduction of climate action (carbon accounting, mitigation, and innovation within the value chain for small-scale fisheries in the Caribbean, supporting the development of new comparative advantages that can lead to superior performance in market access, and to advance climate change and blue economy policy in the region.

3. Specific Objective

The main objective of this Consultancy is to support the internalization of climate action best practices of the National Fishermen Cooperative and its lobster value chain in Belize, through the elaboration of a carbon footprint assessment, and the preparation of carbon mitigation recommendations, that should lead to a climate certification of this process.

Either one of two potential certifications of a fisheries enterprises in Belize will be completed:

- Carbon Measured Certified: it will be granted to the beneficiary company after fulfilling a full certification cycle, which includes: (a) a full Scopes 1, 2 and 3 carbon assessment has been conducted; (b) the company has pledged to the United Nations, greenhouse gas emissions reductions ; (c) the company has set general guidelines that will support the elaboration for a Climate Mitigation Plan for 2030.
- Carbon Neutral Certified: will be granted to the beneficiary company after fulfilling the full certification cycle described above for Carbon Measured Certified, plus conducting the compensations of the company carbon footprint for Scopes, 1 and 2.

In addition, the consultancy aims to:

- Link the carbon mitigation recommendations to enhance small-vessels competitive advantages, market access and access to climate finance.
- Serve as a pilot project that should support institutional expertise development for climate action in the fisheries sector and explore replicability for other companies.
- Fosters information sharing amongst CRFM Member States.

4. Scope of Work

Under the general direction of the CRFM Executive Director, the Consultant will be contracted to undertake the assignment. The Consultant will work in close collaboration with the Deputy Executive Director, the Programme Manager, Fisheries Management and Development, the Advisor, Fisheries Management and Development, and the Statistics and Information Analyst in the delivery of the assignment.

Although the Consultant will work in close collaboration with the above-mentioned personnel, it is understood that the Consultant is responsible for producing the deliverable of this assignment and contribute to its outputs through direct information exchange with the beneficiary organization (specific fisheries organization/company).

The Consultant, working with the CRFM Deputy Executive Director, CRFM Programme Manager, Fisheries Management and Development, Advisor, Fisheries Management and Development, the Statistics and Information Analyst, the (beneficiary organization FOCAL POINT) and the Board of Directors at the National Fishermen Cooperative, Belize will:

1. Participate in a briefing session with the CRFM Secretariat, the Ministry of Blue Economy, and the Belize Fisheries Department to review the Terms of Reference and obtain clarifications and additional directions, if required.
2. Conduct a carbon footprint assessment based on ISO 14064 and GHG Protocol standards, that comply with international best practices.
3. Be available to share the project cycle, concepts, goals and results with a wider audience of stakeholders who act in the fisheries sector in Belize, and if necessary in other CRFM country members.
4. Prepare and submit a work plan to the CRFM Secretariat outlining the detailed activities and description of the methodology to be used to assess the carbon footprint of the fishery enterprise selected.
5. Collect data/information and assess the Carbon Footprint of the beneficiary organization. The scope of work could be either a Value Chain Approach, nor a Corporate Approach. The final decision on the scope of work should be taken once the beneficiary organization has been selected.
 - a. Explore best practice assessment methodology and identify the most suitable for small-scale fisheries.
 - b. Estimate the GHG emissions intensity profile for the selected fishery generated by the small-scale fishery; including quantify emissions, identify main sources of emission.
 - c. Calculate an approximation for the total carbon footprint for the small-scale fisheries using the latest climate science. A customized inventory calculation tool may be required.
 - d. Determine the fuel consumption/cost/carbon emission across the small-scale fishery fleet.
 - e. Prepare and submit Carbon Footprint Report which should include (but not limited to) analysis of current emission levels, an outline of the carbon emissions mitigation strategy based on best practices.
6. Make qualifying explanatory statements or recommendations on a potential declaration of achievement of neutrality and/or Carbon Measured Certification for the selected fishery.
7. Build capacity within the Belize Fisheries Department and the CRFM for the reduction of GHG emissions in Small-scale fisheries, including identifying potential reduction, planning and implementing actions towards reduction. The consulting firm or consortium will convene a webinar training session with local stakeholders.
8. Prepare a technical note about the relevance of climate action in the fisheries industries and value chain in the Caribbean which the CRFM Secretariat will disseminate to stakeholders on its social media.
9. Facilitate a regional workshop at the end of the climate action working cycle, which led to the climate certification, including best practice, processes and available tools.
10. Prepare and submit Final Consultancy Report to the CRFM Secretariat and the Belize Fisheries Department. A suggested format include – objective, methodology, achievements, problems encountered, conclusion, recommendations, Annexes (workshop reports, training/capacity building report(s) awareness items developed, photographs)

5. Target

The target audience for the assignment will be the NFCS, Belize, fishers registered to the Cooperative, and other key stakeholders that should participate as part of the capacity building that the assessment will contribute to.

6. Expected Outputs/Deliverables:

In collaboration with the CRFM Secretariat, the Consultant will deliver the following:

- i. Capacity building webinar session
- ii. Full carbon footprint assessment report.

7. Reporting

The consulting firm or consortium will produce the reports/deliverables as indicated above. Upon submission of each draft report the CRFM Secretariat will provide comments and inputs within 10 working days. The consulting firm or consortium is required to make the changes and re-submit the report in 5 working days.

All reports must be written in English and submitted as an electronic Microsoft Word document for review and final presentation. Final reports should be presented to the CRFM Secretariat, Princess Margaret Drive, Belize City, secretariat@crfm.int for distribution to the key stakeholders and other parties of interest. The approved final reports will be presented to the national government and the CRFM governing bodies (Forum and Ministerial Council).

8. Key Experts

The consulting firm or consortium identifies the team of Key Experts (consultants), including a designated team leader. The profiles of the key experts for this contract are as follows:

Key Expert 1: Team Leader

Qualifications and skills

- A Doctorate degree in environmental or natural science, Economy, Climate, Environmental Engineering, or a related field, or a Masters degree in these disciplines with at least 10 years practical experience.

General professional experience

- At least three (3) years of experience; or an equivalent combination of training and experience in carbon footprint assessment analysis and accounting
- Demonstrated ability to lead complex projects and manage multi-disciplinary teams; project management certification is considered an advantage.
- Previous experience in carbon assessment of ocean/blue economic sectors will be an asset.

Specific professional experience

- Experience collecting, manipulating, analysing, and interpreting scientific data.
- Experience preparing reports, presentations, and other communications.
- Experience with statistical analysis, including use of software such as R, Python, Stata or similar.
- Ability to work well within a close-knit, multidisciplinary team.
- Multi-lingual skills (English and Spanish) and multi-cultural or cross-cultural experience is highly desirable.
- Excellent organization and coordination skills and attention to detail.
- Ability to manage project deliverables and meet deadlines.

- Excellent communication skills via written, spoken, and graphical means, including the ability to communicate scientific results and practices to technical and non-technical audiences.

Key Expert 2: Carbon Footprint Assessment Specialist

- A Masters or undergraduate degree or higher in environmental or natural science, Marine/Fisheries Biology, Climate, Environmental Engineering, or a related field

General professional experience

- At least three (3) years of experience; or equivalent combination of training and experience in carbon footprint assessments analysis and accounting
- Demonstrated experience GIS and remote sensing data, as well as with using GIS software for mapping and analysis.
- Demonstrated ability to lead complex projects and manage multi-disciplinary teams; project management certification is considered an advantage.

Specific professional experience

- Experience collecting, manipulating, analyzing, and interpreting scientific data.
- Experience preparing reports, presentations, and other communications.
- Experience with statistical analysis, including use of software such as R, Python, Stata or similar.
- Ability to work well within a close-knit, multidisciplinary team.
- Multi-lingual skills (English and Spanish) and multi-cultural or cross-cultural experience appreciated.
- Excellent organization and coordination skills and attention to detail.
- Ability to manage project deliverables and meet deadlines.
- Excellent communication skills via written, spoken, and graphical means, including the ability to communicate scientific results and practices to technical and non-technical audiences.

Other Experts

The Company or consortium should submit CVs of other experts they will use during the assignment. However, CVs for experts other than the Key Experts will not be evaluated during the evaluation of this proposal but should be included in the tender.

9. Investment and Duration of Assignment

The total amount of the professional fees for this consultancy is USD 15,000 (fifteen thousand dollars). and will include all the specified activities.

The tasks shall be conducted and completed as follows: Task	Deadline for completion
Output 1. Approved working plan and briefing session with the CRFM Secretariat, Fisheries Department, CNFO, and other Fisherfolk Organisations in Belize and other relevant agencies such as the Regional Climate Change Centre	No later than 2 weeks after the start of the assignment

Output 2: Submission of Explanatory statements or recommendations on a potential declaration of achievement of neutrality and/or Carbon Measured Certification for the selected fishery	35 days after the start of the assignment
Product 3. (a) Capacity building webinar session – (b)Carbon Footprint Assessment Report and Certification.	60 days after the start of the assignment
Output 4: Regional workshop convened	70 days after start of the assignment
Output 5: Final Technical Report prepared	90 days after start of the assignment

10. Application and Selection Procedure.

10.1 Interested applicants are invited to submit their Curriculum Vitae (CV) and tax-inclusive price proposal inclusive of all other associated costs. Applicants must also submit a declaration of availability and a declaration of no conflict of interest.

10.2 Applications will be evaluated based on a Review of Curriculum Vitae. Once the CRFM has selected the applicant with the CV that best meets the requirement of the Terms of Reference, contracting will be dependent on a successful price negotiation between the CRFM and the selected applicant, within the limits of the budget approved for this activity.

10.3 Please submit your application in PDF format by 2 January 2024 to secretariat@crfm.int, and delmar.lanza@crfm.int.