

## Memorandum of Understanding on Strengthening Cooperation between the CRFM and CARDI

This Memorandum of Understanding (hereinafter referred to as MOU) is made between the Caribbean Regional Fisheries Mechanism (hereinafter referred to as **CRFM**) and the Caribbean Agricultural Research and Development Institute (hereinafter referred to as **CARDI**) (hereinafter jointly referred to as the “**Parties**” and each separately as “**Party**”).

### PREAMBLE

**Whereas:** The CRFM is an Inter-Governmental Organisation established by the Member States of the Caribbean Community (hereinafter referred to as **CARICOM**) with the aim to promote and support sustainable development, management and conservation of the living marine and other aquatic resources within the jurisdiction of Member States;

**Whereas:** The New Zealand Institute for Plant and Food Research Limited (hereinafter referred to as **PFR**) is a Crown Research Institute established under the Crown Research Institutes Act 1992, New Zealand and having its registered office at Mount Albert Research Centre, 120 Mount Albert Road, Auckland, New Zealand;

**Whereas:** The Ministry of Foreign Affairs and Trade of the government of Her Majesty the Queen in right of New Zealand (hereinafter referred to as **MFAT**) has entered into an agreement with PFR to provide support for the implementation of a project titled “Caribbean Sargassum Product Research and Development” (Activity # ACT-0100292) (hereinafter referred to as the **Project**), the aim of which is to mitigate the environmental and economic impacts of Sargassum seaweed influx in affected Caribbean countries through the creation of technologies and value-chains for marine biomass.

**Whereas:** The CRFM and PFR have entered into a collaborative agreement and have been working in partnership since 2020 to facilitate the implement the Project in the Caribbean region, and have successfully completed phase 1 activities of the Project which included raw material safety testing and identification of potential products that may be derived from the Sargassum seaweed, and are desirous of exploring the development and use of fertilizers and soil enhancers by farmers and households in the CARICOM Member States;

**Whereas:** The CRFM and PFR recognize the need to collaborate and cooperate with other national and regional organizations and laboratories in the Caribbean with expertise, experience and capacities in areas that can support and contribute to the achievement of the outputs and objectives of the Project;

**Whereas:** CARDI was established by the Member States of CARICOM in 1974 with the aim to contribute to agricultural development by conducting research and by exposing farmers and other persons involved in agriculture to appropriate technologies;

**Whereas:** CARDI has experience, expertise and capacity in areas of interest that coincide with and reinforce those of the CRFM and PFR, which can provide synergy with, and add value to the implementation of the Project;

**Whereas:** The Parties to this MOU acknowledge that there are other institutions and laboratories participating in the Project and implementing other related activities that will, along with the activities specified herein, contribute to the achievement of the outputs and objectives of the Project.

**Whereas:** The Parties acknowledge and agree that the nature of the research to be conducted under this MOU involves inherent uncertainty, and the expected results and outputs may vary or be subject to unforeseen circumstances, and therefore the Parties shall maintain a flexible approach throughout the research process. In this regard, PFR may, in consultation with the Parties, at certain stop/go points, require adjustments to be made to the planned activities and budget, or determine not to proceed with the Project, in which case this Agreement to undertake the Project will terminate; and

**Whereas:** The Parties have agreed to enter into this MOU to reflect their mutual intention to cooperate, coordinate and combine their resources, experience and expertise to ensure proper networking between the Parties to support the development and implementation of the activities with the aim of contributing to the development of prototype products from Sargassum biomass and mitigate the negative economic, social and environmental impacts of Sargassum in the Caribbean region.

Now therefore the Parties hereby agree on the terms of understanding as follows:

## **1 PURPOSE AND OBJECTIVES**

- 1.1. The overall purpose of this MOU is to facilitate closer cooperation and collaboration between CRFM, PFR and CARDI in fulfilling their common objectives by providing a framework which outlines the main areas and procedures for collaboration.
- 1.2. The overall objective of this MOU is to facilitate cooperation among the CRFM, PFR and CARDI in joint research and surveys to contribute to mitigating the environmental and economic impacts of Sargassum seaweed influx in affected Caribbean countries through the creation of technologies and value-chains for marine biomass.
- 1.3. The specific objectives of this MOU are to:
  - 1.3.1. support the development and field testing of a prototype liquid fertilizer and compost derived from Sargassum by farmers and other end users of such product;
  - 1.3.2. evaluate the use and efficacy of a liquid fertiliser or plant growth promoter and compost derived from Sargassum. This will include a comparative study using synthetic fertilizers that are commonly used by farmers in Barbados, and a control (no fertiliser), as well as a financial assessment to improve understanding of the cost of production;

- 1.3.3. evaluate and establish an efficient and cost-effective solar drying method which can manage large volumes of Sargassum;
- 1.3.4. conduct a survey of farmers and other growers to identify and improve understanding of current use of fertiliser and the factors that would facilitate the uptake of liquid fertiliser and composts derived from Sargassum across a range of production practices and crop growers in Barbados; and
- 1.3.5. promote and encourage the acceptance and use, by farmers and other growers, of liquid fertiliser and compost derived from Sargassum in a way that they become incorporated into farmers and grower practice, if the liquid fertilizer and compost are deemed suitable based on the results of the research conducted.

## 2. LEGAL INTENTION

- 2.1. This MOU is intended to be an expression of the individual and collective commitment of the Parties to work together in order to realize the shared objectives expressed herein.

## 3. MAIN ACTIVITIES

- 3.1. The main activities that will be undertaken by CARDI are summarized below, with further details provided in Annex 1 – Scope of Work, which forms an integral part of this Agreement.
  - 3.1.1. **Survey of farmers and growers:** conduct a survey of farmers, growers, and other potential end users of products developed by the Project by identifying and improving understanding of the current use of fertiliser and the factors that would facilitate the uptake of liquid fertiliser and composts derived from Sargassum across a range of production practices and crop growers in Barbados. The survey instrument and plan will be developed in collaboration with PFR and will be implemented by paid enumerators;
  - 3.1.2. **Provide inputs to facilitate the development of liquid fertiliser extract:** collaborate with the project partners including the Department of Biology and Chemical Sciences, UWI, Cave Hill Campus, by providing advice and feedback to assist with the development and testing of prototype liquid fertilizer products derived from Sargassum for use by farmers, growers and other end users of such products in Barbados;
  - 3.1.3. **Drying and storage of Sargassum:** assist with reviewing current solar drying systems being used in the agriculture and agro-industry sectors, evaluating the need for modifying current models, and recommending the selection of a solar dryer prototype to be used to dry Sargassum. The goal is to identify a suitable, efficient and effective solar dryer to manage large volumes of Sargassum for the production of liquid fertiliser and compost throughout the year, during and outside the high and low seasons for Sargassum.



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- 3.1.4. **Wash, Dry and store Sargassum for use in trials:** Wash, dry and store Sargassum for use in the formulation of compost in collaboration with the Fisheries Division or other relevant Department of the Government of Barbados; and evaluate appropriate methods and conditions for storing dried Sargassum for use in the manufacture of liquid fertilizer and compost.
- 3.1.5. **Evaluate liquid fertilizer and compost products in glasshouse or field trials:**
  - (a) collaborate on the formulation of compost using: (i) the Sargassum residue remaining after the extraction of elements or compounds for liquid fertilizer; and (ii) Sargassum collected from the coastal waters for direct use in producing compost; and
  - (b) collaborate on work identifying and evaluating issues and factors that affect the use and efficacy of the liquid fertilizer and compost derived from Sargassum, including amounts, timings and approaches that increase or maintain yields of different crops, reduce heavy metal uptake by different crops, and maintain food and soil health;
- 3.1.6. **Promote use by growers and evaluate product efficacy:** assist with designing and implementing field trials in different districts and soil types of Barbados to identify any issues affecting the fertiliser and compost use and efficacy.
- 3.1.7. **Dissemination of information:** cooperate in good faith with regard to the dissemination of information pertaining to the project and any scientific, technical, and outreach activities undertaken pursuant to this MOU.
- 3.1.8. **Monitoring and reporting:** cooperate with ongoing monitoring requirements including attending Project team meetings, providing weekly and / or bi-monthly short reports on progress and results as they occur during the activities.
- 3.1.9. **Collaborate with experts from PFR and CRFM:** collaborate with experts from PFR and CRFM to plan and implement the activities. Although CARDI will work in close collaboration with the above-mentioned personnel, it is understood that CARDI is responsible for ensuring the successful delivery of the outputs of this assignment.
- 3.2. The Parties may, in consultation with each other and with PFR, adapt or modify the activities, methodologies or experimental procedures during the course of the Project if it is deemed necessary to address new developments, unforeseen challenges or optimize the research process and achieve the planned objective. Any adaptations or modifications to the activities or methodologies shall be based on scientific rationale and documented in writing and signed by the authorized representatives of both Parties.

- 3.3. The Parties shall exercise good faith efforts to collaboratively address any uncertainties, challenges, or changes that arise during the course of the Project. They shall work together and with PFR as needed to find mutually agreeable solutions and make necessary adjustments while maintaining the overall objectives of the Project.

#### **4. FUNDING**

- 4.1. Funding to undertake the activities mentioned in the Scope of Work will be provided by PFR through the CRFM. The budget set forth in Annex 2 to this MOU represents the maximum amount of funding to be made available by the CRFM to CARDI to undertake the planned activities set forth in the Scope of Work (Annex 1).
- 4.2. The Parties agree that the Budget for this research and development project which is presented at Annex 2 is an estimate based on the best available information at the time of execution of this MOU and is subject to change as circumstances may warrant.
- 4.3. If the Parties determine that funds budgeted for a particular activity under the Project are not required, the Parties may, by mutual agreement, revise the budget accordingly in collaboration with PFR.
- 4.4. Funds provided must be used exclusively for the provision of the services and activities in accordance with the Scope of Work (Annex 1) for which the funds are provided.

#### **5. INSTITUTIONAL COORDINATION AND COMMUNICATION**

- 5.1. The Parties agree to designate a contact person to whom the information necessary for the good implementation of the MOU will be communicated. Parties will notify each other promptly in case there are any changes.
- 5.2. The Contact Points from each organization, supported by such other persons as the Parties may nominate, shall form the Steering Group, responsible for overseeing the application of this MOU and for any other tasks that may be agreed.
- 5.3. The Steering Group will determine and regulate its own rules of procedure, frequency of meetings, and manner of record keeping.
- 5.4. The Parties agree to maintain open and transparent communication throughout the duration of the Project. This includes promptly notifying each other of any significant developments, unexpected findings, or changes in circumstances that may impact the expected outputs and outcomes or require adjustments to the original expectations.



## 6. CONFIDENTIALITY OF INFORMATION

- 6.1. The Parties will share information of mutual concern and interest relating to the objectives of this MOU and ensure that activities conducted during the course of this collaboration will be transparent and publicly accountable.
- 6.2. Notwithstanding any other provision in this MOU, the Parties shall keep all Confidential Information confidential, to safeguard the interests of the originators of such information.
- 6.3. "Confidential Information" includes any documents, materials, models, marketing, financial, and investment plans, contacts, advice, recommendations, drawings, plans, diagrams, specifications, technical material, techniques, compounds, compositions, substances, seeds or any other physical matter in any way containing, representing or embodying any of the foregoing or any other information given, whether in written or other material forms, by or on behalf of one Party to the other or vice versa, when such information is designated by one Party or PFR as confidential. Each Party shall use its best efforts to ensure that the amount of information designated as Confidential Information is kept to the minimum necessary for the accomplishment of the goals of this Agreement.
- 6.4. In the event that the Confidential Information must be disclosed pursuant to a judicial order or requirement of law, the Party to whom such order is directed will immediately notify the other party of such order or requirement and shall take all reasonable steps to limit such disclosure, and vice versa.
- 6.5. Notwithstanding anything herein to the contrary, no obligation of confidentiality applies to any Confidential Information that:
  - 6.5.1. The receiving party already knew at the time of disclosure and which can be evidenced by the receiving party's business records;
  - 6.5.2. That was generally available to the public prior to the disclosure or become generally available to the public after such disclosure (other than as a result of the breach by the receiving party of its obligations hereunder);
  - 6.5.3. The receiving party independently developed, provided that the receiving party can show that such development was accomplished by it or on its behalf without the use or any reference to the Confidential Information and which development can be evidenced by its relevant business records; or is disclosed by mutual agreement of both parties.
- 6.6. Each Party will respect the provisions on confidentiality described herein during the term of this MOU and for a period of 5 years following its termination.

## 7. PUBLICATIONS, TITLE AND USE OF INTELLECTUAL PROPERTY

- 7.1. In the case of publications and any other written and / or visual documents the following needs to be implemented:



- 7.1.1. Under the provisions of this MOU, the Parties may jointly produce documents, reports, studies, photographs, videos, and maps, as well as product-specific documents (hereinafter collectively referred to as the "Work(s)"). Unless otherwise agreed to by the Parties in writing, the copyright and other intellectual property rights in any such Work will belong to PFR, CRFM and CARDI. In all cases of co-authorship, the Parties and PFR are hereby authorized to use the Work, with prior authorization from the other, for all publications.
- 7.1.2. Neither Party shall publish or otherwise distribute the Work of the other Party, or completed jointly, without the prior written consent of the other Party and credit given to the other Party for such Work.
- 7.1.3. The names and logos of the Parties and PFR are intellectual creations, which are protected by trademarks and / or copyrights; as such, unless used for editorial or information purposes in accordance with the purpose of this MOU, they may not be used by either party for any purpose without the prior written permission of the other Party.
- 7.1.4. All Publications, Media/Press Releases and any other information and data prepared pursuant to or developed in connection with this MOU must be mutually agreed to by both Parties. All publications shall acknowledge the contributions of the parties to the MOU and PFR, unless such acknowledgement is not desired by the contributing Party or PFR.
- 7.1.5. The Parties and PFR will jointly consider whether it is appropriate to effect the sharing of any benefits arising from the Works with other relevant stakeholders.

## **8. ASSETS**

- 8.1. Where relevant, the transfer and ownership of any property or assets, including equipment and software, procured or acquired under this MOU as part of the collaborative programme will be agreed upon by the Parties at the time of expiration or termination of the Project, subject to the specific terms and conditions on which such assets were procured or acquired.
- 8.2. When appropriate, a formal title of transfer of assets must be given to each Party at the time of reassigning the asset.

## **9. DISPUTE RESOLUTION**

- 9.1. Any dispute concerning the interpretation or application of this MOU shall, if possible, be settled by direct negotiation between the Parties.
- 9.2. If the dispute cannot thus be settled within a period of six weeks, it shall upon the request of either Party be submitted to the Secretary General of CARICOM for final resolution. The Parties agree to accept the decision of the Secretary-General as final and binding.

## **10. APPLICABLE LAW**

- 10.1. This MOU and any document or arrangement relating thereto will be governed by general principles of law, to the exclusion of any single national system of law.

- 10.2. The Parties agree to comply with all applicable laws, regulations, and policies including those related to the protection of personal data, and anti-bribery and anti-corruption in connection with performing their responsibilities under this MOU. The parties agree that their respective employees, officers, directors, and agents will not offer, pay, promise to pay, or authorize the payment of any money or thing of value will be offered, given, or promised, directly or indirectly, to any government official, for the purposes of: (i) influencing any act or decision of such government official to fail to perform his official functions, and (ii) or inducing such government official to use his influence with the government or an instrumentality, in order to assist CRFM or CARDI or PFR in obtaining or retaining business for or with, or directing business to, any person.

## **11. REVIEW AND AMENDMENT**

- 11.1. This MOU may be subject to review, modification or amendment by agreement of the Parties in writing at any time.
- 11.2. Any Party may propose a review, modification or amendment of this MOU at any time where the need arises.
- 11.3. Any revision, modification or amendment agreed to by the Parties shall form part of this MOU. Such revision, modification or amendment shall come into force on such date as may be determined by the Parties.

## **12. TERMINATION**

- 12.1. Either Party will have the right to terminate this MOU by giving thirty (30) days written advance notice to the other Party. Upon receipt of the termination notice, the other Party will take all necessary action to complete outstanding commitments relating to the purpose of this MOU and the Parties shall endeavor to bring all activities to smooth closure prior to the expiration of the notice of termination.

## **13. DISCLAIMER**

- 13.1. None of the Parties shall be liable for activities carried out by the other Party under this MOU.
- 13.2. The Parties make no warranty, either express or implied, with respect to the merchantability or fitness of the products formulated or evaluated for a particular purpose.

## **14. FORCE MAJEURE**

- 14.1. Neither the CRFM nor CARDI shall be liable under or be deemed to be in breach of this Agreement for any delays or failures in performance of this MOU which result from Force Majeure.





14.2. For the purposes of this MoU, Force Majeure means an event that is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

**15. ENTRY INTO FORCE AND DURATION**

15.1. This MOU shall enter into force on the date of signing by the Parties hereto and shall remain in effect for a period of three (3) years.

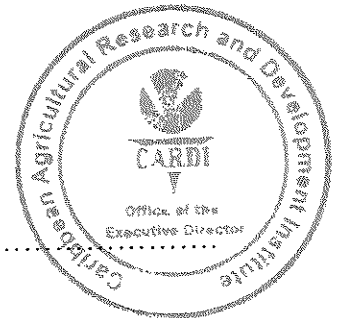
IN WITNESS, WHEREOF, the undersigned, being duly authorized thereto, have on behalf of the Parties signed three originals of this MOU on the day below written.

**FOR THE CARIBBEAN AGRICULTURAL RESEARCH  
AND DEVELOPMENT INSTITUTE**

*A.H.*  
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Date: *2/6/2023*  
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Ansari Hosein, Executive Director



**FOR THE CARIBBEAN REGIONAL FISHERIES MECHANISM**

*Milton Haughton*  
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Date: *2 June 2023*  
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Milton Haughton, Executive Director

ANNEX 1: SCOPE OF WORK

ANNEX 2: BUDGET AND DISBURSEMENT SCHEDULE

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