STRENGTHENING INSTITUTIONAL CAPACITY FOR A RESILIENT CARIBBEAN COASTAL AND MARINE ENVIRONMENT (RCCAME) PROJECT

GA238 /REG

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MARINE FORECASTER CONSULTANCY

REQUEST FOR EXPRESSIONS OF INTEREST

The Caribbean Institute for Meteorology and Hydrology CIMH has received financing from the Caribbean Development Bank (CDB) in an amount equivalent to one million, five hundred and forty-two thousand, and one hundred United States Dollars (USD1,542,100) towards the cost of "Strengthening Institutional Capacity for A Resilient Caribbean Coastal and Marine Environment (RCCAME) Project and intends to apply a portion of the proceeds of this financing to eligible payments under a contract for which this invitation is issued. Payments by CDB will be made only at the request of CIMH and upon approval by CDB and will be subject in all respects to the terms and conditions of the Financing Agreement. The Financing Agreement prohibits withdrawal from the financing account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of CDB, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than CIMH shall derive any rights from the Financing Agreement or have any claim to the proceeds of the Financing.

CIMH, the Executing Agency, now wishes to procure the services of a Marine Forecaster.

The objective of the consultancy is to enhance marine products produced by the CIMH and strengthen the delivery of marine related training and research across the region and in particular the member states of the CIMH and borrowing member countries of the Caribbean Development Bank.

The contract will be for a total of 42.5 man-days over a duration not exceeding six (6) months.

The CIMH now invites eligible individual consultants to submit Expressions of Interest indicating qualifications and experience required to provide these consultancy services.

Consultants shall be eligible to participate if:

a. the persons are citizens or bona fide residents of an eligible country; and
b. in all cases, the consultant has no arrangement and undertakes not to make any arrangements, whereby any substantial part of the net profits or other tangible benefits of the contract will accrue or be paid to a person not a citizen or bona fide resident of an eligible country. Eligible countries are member countries of CDB and is extended to countries eligible for procurement under the European Union (EU)-funded programme, which are not CDB member countries, in accordance with the EU Eligibility Rules (https://www.caribank.org/sites/default/files/2023-02/EU%20Eligibility%20Rules%20CARE%20Programme_Jan%202023.pdf). Consultants are advised to review the detailed eligibility criteria detailed in Section 4 and conflict of interest provisions in Section 5 of the Procurement Procedures for Projects Financed by CDB (January 2021), as published on CDB's website. In the assessment of submissions, consideration will be given to qualifications and experience on similar assignments.

All information must be submitted in English. Further information may be obtained from the first address below between 9:00 am and 4:00 pm Monday to Friday.

An electronic copy of the Expressions of Interest must be submitted to the following two addresses no later than **4:30 pm Barbados Time on November 13, 2026.** The subject line should read *"Expression of Interest – Marine Forecaster"*

Following the assessment of submissions, the most technically capable and appropriately experienced applicant will be invited to negotiate a contract to provide the consultancy services. The CIMH reserves the right to accept or reject late applications or to cancel the present invitation partially or in its entirety. It will not be bound to assign any reason for not engaging the services of any applicant and will not defray any costs incurred by any applicant in the preparation and submission of Expressions of Interest.

1. Dr. David A. Farrell,
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DRAFT TERMS OF REFERENCE

1. BACKGROUND

1.01 The Caribbean Institute for Meteorology and Hydrology (CIMH) is an Institution of the Caribbean Community (CARICOM) and the technical Organ of the Caribbean Meteorological Organization (CMO). The mandate of the CIMH is to assist in improving and developing the meteorological and hydrological services as well as providing awareness of the benefits of meteorology and hydrology for the economic well-being of the sixteen (16) CMO Member States. This is achieved through training, research, investigations, and the provision of related specialised services and advice.

1.02 In achieving its mandate, the CIMH has established an affiliation with the University of the West Indies, Cave Hill campus, where its primary responsibility is to deliver the B.Sc. programme in Meteorology in the Faculty of Pure and Applied Sciences. The CIMH is also recognised by the World Meteorological Organization as (a) its designated Regional Training Centre in the Caribbean for Meteorology and Hydrology and related disciplines, (b) its designated Regional Instrument Centre for the Caribbean, (c) a Centre of Excellence in Satellite Meteorology Training, (d) its designated Regional Climate Centre for the Caribbean and (e) the Pan American Node of the Sand and Dust Storm Warning Alerting and Assessment System.

1.03 The CIMH hosts and manages the Caribbean Centre for Climate and Environmental Simulations established within the last decade in recognition of the region's need for high-speed computing to support operational and research activities in meteorology, hydrology, climatology and marine science. In addition, the CIMH is the Climate Data Centre for CMO Member States and is recognised as the leading regional centre for research and development related to meteorology, hydrology, agro-meteorology and climate and their applications. More recently, the CIMH established the Regional Marine Forecast Centre to support operational marine forecasting across the region and to provide some of the science essential for improving marine governance and decision making.

1.04 The CIMH is active in such areas, including but not limited to environmental modeling, hydrological risk impacts forecasting and early warning system development. The CIMH has strong collaborations with other regional institutions such as the Caribbean Disaster Emergency Management Agency, the Caribbean Community Climate Change Centre, the Caribbean Centre for Renewable Energy and Energy Efficiency, the Caribbean Tourism Organization, the Caribbean Development Bank and the Caribbean Agriculture Research and Development Institute in addition to national organisations in CMO Member States. The CIMH also has strong links with the international community inclusive of donor agencies, universities, research and development centres and intergovernmental organisations.

1.05 Small Island Developing States (SIDS) are defined as largely coastal as they have a large coastal area to land mass ratio. This often means that SIDS have marine exclusion zones and related resources that are significantly greater than their land mass. As a result, the coastal and marine environment plays a critical role in the evolution of nearly all aspects of SIDS including their socio-economic development. The Caribbean region relies heavily on its marine ecosystem for its food security with fisheries providing a significant low-cost component of the daily protein diet of many persons. Marine related activities such as fisheries, tourism, recreation, shipping and mineral resource mining among others contribute significantly to the sustainable development of the region through jobs and revenue generated. Although the marine environment contributes significantly to regional economies, marine related and influenced natural and anthropogenic hazards pose significant threats to the sustainable development of the region. For example, an outcome of climate change is sea level rise which will inundate low lying coastlines and communities across the region

destroying lives and livelihoods in the process. This situation will be further exacerbated by storm surges and significant waves related to the passage of significant weather events through the region or north-westerly swells emanating from North America. Elevated sea surface temperatures provide the heat that drives many of the significant weather events across the region. Under future climates, increased sea surface temperatures and their increased occurrences compared to present day are anticipated to support intensification of severe weather events further exacerbating coastal inundation, coastal erosion and the destruction of coastal marine ecosystems and habitats leading to significant socio-economic impacts.

1.06 Caribbean states are heavily dependent on oil and gas imports to address their increasing energy demands. To address this problem and reduce the Region's dependence on external sources of energy, offshore oil and gas production in the Southern Caribbean has increased significantly with Guyana joining Trinidad and Tobago and Suriname in the offshore production and export of petroleum products. This increased industrial activity in the marine environment poses significant threats to marine ecosystems in the Caribbean given the northerly marine currents that transport water and sediment from South America to the Caribbean. These northerly currents are also responsible for the movement of significant freshwater plumes from South American rivers, in particular, the Amazon and Orinoco rivers, to the Caribbean. These plumes alter the chemical and physical properties of the marine environment in and around Caribbean islands leading to impacts to marine biodiversity including fisheries. With changes to the climate over the watersheds feeding these river systems, coupled with changes in land use in many of these watersheds, there is a growing concern related to the periodic and long-term evolution of marine water quality in the Caribbean and its long-term impacts on the region's biodiversity. Over the last two decades, these changes to marine biodiversity in the region are being seen with the increasing persistence and regularity of sargassum seaweed across the region which impacts fisheries, the usability of beaches for tourism and degrades air quality in coastal regions when it decays.

1.07 Improving marine governance processes in the Caribbean to sustainably manage the region's marine resources and ecosystems, requires human capacity, technological capacity and a range of data at varying spatio-temporal scales. To support addressing some of these areas, the Board of Governors of the CIMH and the Caribbean Meteorological Council approved the establishment of a Regional Marine Forecast Support Centre (RMFSC) to be supported and managed through the CIMH based on recommendations from a feasibility study executed by OEA Technologies in 2020 under the ACP-EU- CDB-NDRM programme. The specific aims of the RMFSC include (a) support for the development of capacity within National Meteorological and Hydrological Services (NMHSs) and other national institutions within CMO Member States to develop, deliver and interpret marine meteorological forecasts and associated impacts within their respective jurisdictions; (b) deliver in a sustainable manner marine forecast, monitoring and early warning supporting products and services for the wider Caribbean Sea and adjacent oceans at spatial and temporal scales that meet the needs of stakeholders including disaster management, fisher folk, coastal zone management, marine transport, security/search and rescue, and tourism; and (c) improve the understanding of deep ocean circulation processes and their role in influencing the region's climate systems and related food supply systems.

1.08 Under the ACP-EU-CDB-NDRM programme, staff at the CIMH also received training in marine forecasting and was provided with train-the-trainer material to build further capacity and enhance regional marine forecasting related training programmes. This capacity building effort led to the development at the CIMH of prototype operational marine forecasting applications including but not limited to deep ocean circulation, free surface and surface currents. Model development was subsequently enhanced in 2023 through technical visits to the Center for Ocean-Atmospheric Prediction Studies and HR Wallingford under the USAID funded Strengthening Disaster and

Climate Resilience programme that was executed by the CIMH. The outputs for the prototype marine applications are currently hosted by the CIMH and continue to be under development.

2. OBJECTIVES

2.01 The focus of this consultancy is to enhance marine products produced by the CIMH and strengthen the delivery of marine related training and research across the region and in particular the member states of the CIMH and borrowing member countries of the Caribbean Development Bank.

3. SCOPE OF WORK

The specific duties and responsibilities of the Consultant include:

(a) Assessing the operational workflows currently used for the marine model design, development and publishing.

(b) Enhancing the marine related products and services currently being produced.

(c) Increasing the number of marine products and services offered through the RMFSC at CIMH.

(d) Strengthening the CIMH's capacity for research and the delivery of CIMH training in marine forecasting to NMHSs and the stakeholders across the Caribbean.

4. QUALIFICATIONS AND EXPERIENCE

4.01 The Consultant is required to have postgraduate degree from a recognized institution in either Meteorology, Marine Science, Oceanography, Marine Meteorology or related disciplines. In addition, the Consultant must have:

(a) At least (5) years of experience delivering marine-related training to a broad range of stakeholders;

(b) Demonstrated experience developing marine forecasting products and/or services;

(c) Experience working with developing countries, particularly in the Caribbean.

(d) Excellent communication and interpersonal skills, with the ability to engage and collaborate with diverse stakeholders.

5. REPORTING AND DELIVERABLES

5.01 The Consultant will report to the Project Coordinator and is required to:

(a) Submit an assessment report on the current operational workflows for marine modelling at the CIMH, inclusive of recommendations for enhancement

(b) Develop at least one (1) new marine product and/or service based on the recommendations.

(c) Submit a report on the new marine product(s)/service(s) developed. The report must also detail possible areas of research and capacity building requirements to sustain and enhance new products and/or services.

(d) Develop an outline for a CIMH marine forecasting training module for the CIMH staff and identify a proposed programme for advanced study for a least one member of staff

6. DURATION

6.01 The contract will be for a total of 42.5 man-days over a duration not exceeding six (6) months. It is the expectation that a portion of the scope of work will be delivered in-person at CIMH in Barbados.