



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

GA238 /REG - STRENGTHENING INSTITUTIONAL CAPACITY FOR A RESILIENT CARIBBEAN COASTAL AND MARINE ENVIRONMENT (RCCAME) PROJECT

CLIMATE MODELLER 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 consultancy services for a Climate Modeller. The objective of the consultancy is to complete the downscaling of regional climate models for varying Representative Concentration Pathways (RCPs) and to further advance capacity development efforts. These efforts aim at enhancing climate modeling skills and developing a cadre of regional professionals capable of efficiently utilizing the ensembles for sectoral and other applications.

The duration of the assignment is expected to approximately 37.5 man-days over a duration not exceeding eight (8) months.

The CIMH now invites eligible individual consultants to submit Expressions of Interest, in the form of a Curriculum Vitae (CV) and a cover letter, indicating their qualifications and experience required to provide these consultancy services. Please see the attached Terms of Reference for further details on the 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 non-member countries that meet the eligibility criteria for procurement under the European Union (EU)-funded programme, in accordance with the [EU Eligibility Rules \(https://www.caribank.org/sites/default/files/2023-02/EU%20Eligibility%20Rules%20CARE%20Programme_Jan%202023.pdf\)](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 ([Procurement Procedures for CDB financed projects_Jan 2021-final_0.pdf](#)).

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 December 15, 2025**. The subject line should read “*Expression of Interest – Climate Modeller*”

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,

Principal

Caribbean Institute for Meteorology and Hydrology (CIMH)

Husbands

St. James, BARBADOS

Email: procurement@cimh.edu.bb.

2. Procurement Policy Unit

Caribbean Development Bank (CDB)

P.O. Box 408 Wilkey

St. Michael, BARBADOS

Tel: 246-539-1600

Email: procurement@caribank.org



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

GA238 /REG - STRENGTHENING INSTITUTIONAL CAPACITY FOR A RESILIENT CARIBBEAN COASTAL AND MARINE ENVIRONMENT (RCCAME) PROJECT

DRAFT TERMS OF REFERENCE

CLIMATE MODELLER CONSULTANCY

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 Long-term climate change and increasing climate variability represent fundamental challenges that individually and collectively threaten the long-term sustainable development of Caribbean states. Over the last two decades, it has become abundantly clear that the Caribbean region will have to focus significant effort and resources adapting to climate change and increasing climate variability through, in part, the building of resilience in climate sensitive sectors such as agriculture, disaster risk management, water resources management and health among others. Given the limited human and economic resources of the Caribbean region, the region's adaptation strategy must be well designed and efficiently implemented to maximize the return on investment. Germain to achieving this outcome are high-resolution short-term and long-term climate projections that are appropriately scaled to address sectoral planning and development concerns down to the community level.

1.06 Increased temperatures and a drier climate, punctuated by more intense extreme rainfall events have the potential to (i) disrupt the production of renewable energy (e.g. solar, hydropower) while simultaneously increasing energy demand (e.g., for cooling); (ii) disrupt food security by reducing yield of traditionally grown crops and animal protein due to heat stress and reduced water availability; (iii) deteriorate public health, occupational health and wellness/wellbeing outcomes; (iv) disrupt trade, tourism product and foreign direct investment if resilience strategies aren't implemented. Building sectoral resilience requires an assessment of risk of which the first step is risk identification. This can be achieved in part through the development and application of high-resolution ensemble of future climate predictions aimed at sectoral applications. Under ACP-EU-CDB-NDRM Programme, the CIMH and the Climate Studies Group Mona (CSGM) collaborated to commence the development of high-resolution ensemble climate predictions for the Caribbean. The effort included the determination of (a) the storage requirements for boundary data and other pre-processed files, (b) the optimal size for the model domains, (c) storage requirements for model outputs, (d) the most efficient virtual machine configuration and (e) computational effort. RegCM4 downscaled for GFDL (RCP 8.5), HadGEM (RCP 4.5, 2.6 & 8.5) and CNRM (RCP 4.5) were completed for about 20-km resolution domain using a computational platform rented from a commercial cloud computing service. Downscaling to the 10 km remains to be completed in addition to the development and application of weather research forecast for climate to generate a multi-model ensemble.

2. OBJECTIVES

2.01 The focus of this consultancy is to complete the downscaling of regional climate models for varying Representative Concentration Pathways (RCPs) and to further advance capacity development efforts. These efforts aim at enhancing climate modeling skills and developing a cadre of regional professionals capable of efficiently utilizing the ensembles for sectoral and other applications.

3. SCOPE OF WORK

3.01 The specific duties and responsibilities of the Consultant include:

- (a) Review of the climate model outputs generated under the ACP-EU-CDB-NDRM programme engagement with CSGM.
- (b) Advance the climate model development activities that commenced under the ACP-EU- CDB-NDRM programme towards the availability of downscaled climate projection data for sectoral applications, including postprocessed outputs of socio-economic sector-relevant climate indices.
- (c) Strengthening the application of climate modelling outputs within the Caribbean through the delivery of training to across National Meteorological and Hydrological Services (NMHSs) and research institutions.

4. QUALIFICATIONS AND EXPERIENCE

4.01 The Consultant is required to have a post-graduate degree (with strong preference being given to candidates with PhD degrees) in either Atmospheric Science, Climate Science, Climate Modelling or related disciplines.

In addition, the Consultant must be able to demonstrate:

- (a) more than five (5) years of experience applying and downscaling regional climate models;
- (b) more than five (5) years delivering training in climate modelling to a broad range of stakeholders;
- (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;
- (e) proficiency in English is essential.

Further assets would be:

- (f) the Consultant is proficient in Spanish;
- (g) the Consultant has a publication record in high-impact, peer reviewed literature;
- (h) the Consultant has demonstrable experience in post-processing regional climate projections to calculate future timeseries of pertinent climate indices of climate-related hazards (such as flood potential, heat impact potential, drought impact potential, etc).

5. REPORTING AND DELIVERABLES

5.01 The Consultant will report to the CIMH Climatologist, and the following deliverables are required:

- (a) Inception report inclusive of proposed training outline.
- (b) Assessment report of the review of existing climate models and products.
- (c) Technical Report on the climate model development and application.
- (d) Technical Report on model output data access, post-processing techniques and climate indices calculation.
- (e) Report on training inclusive of training materials, participant list and pre- and post- evaluation.

6. DURATION

The contract will be for a total of 37.5 man-days, over a duration not exceeding eight (8) months.