

TERMS OF REFERENCE

BARBADOS COASTAL RISK ASSESSMENT AND MANAGEMENT PROGRAM

BA-L1014; 2463/OC-BA

Public Consultation and Revision of the Draft Updated Integrated Coastal Zone Management Plan and Amendment of the Coastal Zone Management Act and Preparation of CZM Regulations Incorporating Disaster Risk Management and Climate Change Adaptation Principles

INTRODUCTION

1. BACKGROUND

- 1.1. The coastal zone of Barbados is the country's most valuable natural asset, and also its main economic asset. Sandy beaches, fringing reefs and other coastal ecosystems distributed along 97 km of shoreline, relatively calm waters (on the Caribbean coast) and a warm tropical climate create optimal conditions for a tourism industry that accounted directly and indirectly for 39% of GDP and 50% of total export earnings in 2008. More than half the island's population resides within 2 km of the coast, while more than 95% of all tourism-related physical plant is located at or near the coast. In addition, much critical infrastructure including water, electricity, natural gas and telecommunication installations, transportation nodes (road, air and sea), commercial, health, education and government facilities can also be found within the coastal zone. Access to the coastal zone is also critical for other traditional uses such as fishing and maritime transport. It is for these reasons that integrated coastal area management must be regarded as a critical activity, if sustainable development is to be achieved.
- 1.2. Due to its location and geology, Barbados is moderately exposed to, *inter alia*, hurricanes and tropical storms and, resulting directly from these events: storm surges and winds. The island is also highly susceptible to coastal beach erosion and cliff instability, either from specific storm events or from ongoing processes such as sediment transport and soil and rock slippage. In addition, low lying regions of the country, including those in the densely populated coastal zone, are often prone to inland flooding. The country's tourism plant and associated public infrastructure, which are concentrated in the coastal zone, are therefore associated with a high level of coastal risk¹.
- 1.3. To compound this, and as is the case of other highly vulnerable, low-lying, small countries in the Caribbean and elsewhere, Barbados finds itself confronted with the reality of global climate change and the resulting increased risk associated with climate-related disasters².

¹ In the context of this consultancy, coastal risk refers to the losses resulting from the occurrence of natural hazards and disasters, including those associated with climate variability and climate change, in the coastal zone.

² Barbados First National Communications to the United Nations Framework convention on Climate Change (UNFCCC), October 2001, 125 pp.

Regional projections suggest that climate change is exacerbating the disaster risk profile of Barbados by increasing the frequency and severity of existing coastal hazards as well as generating new hazards such as sea level rise; and increasing socioeconomic vulnerability. It is estimated that climate change in the Caribbean could result in an increase in damage equal to an additional 1 - 3% of GDP of the region in the worst case scenario³. In the context of the coastal zone, climate change has the potential to affect shoreline stability, the health of coastal and marine ecosystems, public infrastructure and private property in general. Coral bleaching, the intensification of beach erosion and encroachment of wetlands and lagoons associated with sea level rise could have serious implications for future development, recreational activities and land use in the coastal zone.

- 1.4. It is important to recognize that some of the negative impacts of climate variability and climate change are already being felt, as actual experience with coral bleaching would illustrate. In Barbados it is estimated that more than 65 % of local corals were affected by the 1998 coral bleaching outbreak episode, with *Diploria sp.* and *Siderastera siderea* being the species most severely impacted. Post-event monitoring showed that at one west coast site some 20% of bleached corals did not survive⁴. The more recent 2005 event was even more prolonged and severe. All reef habitats and nearly all taxa were impacted, with 70.6% of all colonies bleached on average⁵.
- 1.5. In its First National Communication to the UNFCCC, the Government of Barbados (GOBA) recognizes that one of the most serious challenges the country faces, as a result of changing climate, is sea level rise and its associated impacts – coastal erosion, inundation and saltwater intrusion – which are felt/evident mostly on the northwest, west and southwest coasts. The National Communication identifies the national Coastal Zone Management Plan as a key policy instrument that will provide guidance for climate change adaptation.
- 1.6. To date the Coastal Zone Management Unit (CZMU) of Barbados has made significant advances in ICZM, including achievements in coastal erosion control, resource conservation, institutional strengthening and capacity building; and these have provided a solid platform for the prudent and sustainable management of coastal and marine resources. Notwithstanding the progress made, against the background of emerging climate-related risks and recognizing that climate change has a number of implications for disaster risk reduction and management, the GOBA considers it both prudent and timely to adopt an integrated coastal risk management approach, expanding the CZM mandate as a necessary strategy for sustainable development. This approach incorporates risk management solutions into CZM that address current and future vulnerabilities as well as reflecting/and also reflect changes in environmental and socio-economic conditions over time⁶.
- 1.7. The CZMU is one of several agencies within the Ministry of Maritime Affairs and the Blue Economy with responsibility for the stewardship of coastal resources in Barbados.

³ Economics of Climate Adaptation, 2010

⁴ Status of Coral Reefs of the World, 2002, p.327. ISSN 1447-6185).

⁵ Oxenford, H., L. Nurse, R. Roach, A. Brathwaite, R. Goodridge, F. Hinds, K. Baldwin and C. Finney 2006: *Quantitative Observations of a Mass Coral Bleaching Event in Barbados, Southeastern Caribbean*. Climatic Change 87: 435-449.

⁶ Draft climate change adaptation and abatement policy, 2010. Government of Barbados.

Established in 1996, the CZMU is the institutional offspring of the Coastal Conservation Project (CCP), which was initiated in 1983 in an effort to characterize and manage beach erosion around the island. Specifically, the CZMU is primarily charged with the management of development within the coastal zone (in partnership with the Town and Country Development Planning Office), the monitoring and control of beach erosion, the monitoring and management of coral reef habitat, and maintaining an inventory of coastal structures and other resources. The Unit is divided into four principal sections:

- Coastal Planning – Evaluation and monitoring of coastal development applications and construction.
- Engineering – Monitoring of beach erosion/accretion, evaluation and design of coastal protection structures, monitoring of coastal processes, inventory of coastal structures.
- Marine Research – Monitoring of coral reef habitat, implementation of reef protection measures.
- Administration – Management of technical sections.

1.8. A major constraint for the CZMU has been the inability to develop, update and/or have access to high quality risk information that is critical for development decision making in the coastal zone. These include data on (i) coastal and nearshore processes and specific issues such as cliff and slope stability; and (ii) natural hazard risk, including hazard assessments, inventories of vulnerable infrastructure, property and population; and estimates of (i) probable losses to public and private assets; and (ii) associated data on climate change. The GOBA needs baseline data, modeling and regulatory tools to enhance the resilience of future development to present-day climate variability, disaster risk and projected climate change.

1.9. The approach that the CZM program in Barbados now seeks to embrace will incorporate many of the required and desirable elements discussed above, while building on the substantial achievements of the past.

Coastal Risk Assessment and Management Program

1.10. In order to address these challenges, GOBA requested support from the Inter-American Development Bank (IDB) to finance a **Coastal Risk Assessment and Management Program (BA-L1014/2463/OC-BA; CRMP)** aimed at building resilience to coastal hazards (including those associated with climate change) through improved conservation and management of the coastal zone. The Program's overall objective is to build capacity in integrated coastal risk management in Barbados incorporating disaster risk reduction and climate change adaptation in development planning, control and monitoring of the coastal zone. The CRMP consists of three inter-related components - **Component 1:** Coastal Risk Assessment, Monitoring and Management; **Component 2:** Coastal Infrastructure; and **Component 3:** Institutional Sustainability for Integrated Coastal Risk Management (ICRM). This consultancy falls under **Component 3** of the CRMP, which has the following thematic areas:

- i. Policy, Regulatory Environment: Update and approval of the Integrated Coastal Zone Management Plan incorporating DRM and CCA; preparation of regulations

under the ICZM Plan; development of two strategies and action plans for coastal climate change adaptation and for disaster risk reduction; and development of a cost recovery mechanism for coastal infrastructure;

- ii. Institutional Capacity Building: Training in enforcement for coastal zone inspectors; and technical support and training for the staff of the CZMU in risk modelling and assessment, data management and use of risk evaluation tools;
- iii. Stakeholder Communication and Education: Sensitization in DRM, CCA and ICZM for management and technical personnel of CZMU and strategic partners (Town and Country Development Planning Office, Department of Emergency Management, Ministry of Tourism and International Transport, Climate Change Unit, Drainage Division and Environmental Protection Department); development of a Policy for information sharing; and design and implementation of a communication strategy, including a public education and awareness campaign on disaster risk.

1.11 Public consultation is a fundamental part of the approval process for the Draft Integrated Coastal Zone Management Plan (ICZMP). This is a requirement of the Coastal Zone Management Act, Cap.394 where the Draft ICZMP and the order delimiting the coastal zone management area shall be presented to the Minister for approval, who then causes a public inquiry to be held. The customary practice is for public inquiry meetings to be held at several venues across the island to encourage a wide cross section of the Barbadian public to express their views on the policies outlined in the Draft ICZMP. However, in light of the Covid-19 pandemic a decision was taken by the Coastal Zone Management Unit and the Project Execution Team (PET) to eliminate in-person public inquiry meetings and focus on virtual meetings. It is envisaged that these several virtual meetings will be accessible to a wide variety of stakeholders while adhering to the Covid-19 protocols.

2. SPECIFIC OBJECTIVES OF THE ASSIGNMENT

2.1. The specific objectives of this assignment are:

- a) Implement a public consultation process for the Draft Update of the Integrated Coastal Zone Management Plan and the revised boundaries of the Coastal Zone Management Area, in accordance with the Coastal Zone Management Act, Cap. 394.
- b) Make amendments to the Draft Integrated Coastal Zone Management Plan and the revised boundaries of the Coastal Zone Management Area, incorporating comments from the public consultation.

3. SCOPE OF SERVICES AND REQUIRED TASKS

3.1. Under the Direction of the Project Manager, CRMP, the Consultant will:

- a) Following initial discussions with the management of the CZMU, prepare and submit an Inception Report outlining, but not limited to the following:
 - i) background and purpose of the assignment;

- ii) the proposed methodology and means of delivery;
 - iii) work plan with description of activities;
 - iv) evaluation tools to determine the effectiveness of the public consultation;
 - iv) schedule of activities including key dates, critical milestones and the critical path; and,
 - v) resources required for the completion of all tasks and activities.
- b) Prepare and submit a stakeholder engagement plan including the identification of all stakeholders and the strategy for the engagement of said stakeholders. Included in this stakeholder engagement plan shall be a schedule of public and sectoral meetings, and a national launch meeting.
 - c) Through discussions with the Unit and the PET, prepare and submit a communications strategy inclusive of a suite of communications materials.
 - d) Execute the communications strategy in order to raise the awareness of the public with respect to the main objectives and policies of the Draft ICZM Plan.
 - e) Conduct a national launch meeting at the beginning of the public consultation process as well the eight public and sectoral meetings.
 - f) Submit a public consultation report, which includes the comments from the national launch meeting and the public and sectoral meetings, and the evaluation of the effectiveness of the public consultation.
 - g) Following discussions with the Coastal Zone Management Unit, revise and submit the Draft Final ICZM Plan to include the comments from the public consultation phase as well any other required revisions.
 - h) Submit the Final ICZM Plan incorporating comments from the review by the CZMU.

4. CHARACTERISTICS OF THE ASSIGNMENT AND REQUIRED QUALIFICATIONS

- 4.1. Type of Consultancy: Lump-sum contract to be carried out by a firm.
- 4.2. Starting Date and Duration: Q4, 2020 – Q2, 2021. Approximately five (5) months.
- 4.3. Place of Work: Barbados and the consultant's place of residence.
- 4.4. Qualifications and Experience:
 - i. Land Use/Coastal Planner with experience in the formulation of policies related to ICZM, DRM, CCA, and a minimum of 10 years' experience in development planning in the Caribbean and/or other Small Island Developing States (SIDS).
 - ii. Coastal Engineer with eight (8) years' minimum experience in the assessment of the structural competence of coastal infrastructure;
 - iii. DRM/CCA Specialist with a minimum of eight (8) years' experience in incorporating DRM and CCA into policies related to ICZM which influences land use policy

- particularly in small island developing states. Expertise in the management of climatic and geologic hazards is required;
- iv. Mass Communication/Public Education Specialist with a minimum of eight (8) years' experience working on environmental education issues; and,
 - v. Geographical Information Systems Specialist with a minimum Master's degree in Spatial Management with a minimum of five (5) years' experience.

5. CLIENT'S INPUTS

- 5.1. The CRMP will provide the consultant with all relevant documentation required to facilitate the execution of the consultancy.

6. REPORTING REQUIREMENTS

- 6.1. The consultant is expected to deliver the following to the satisfaction of the CZMU and PET:
 - a) Inception Report within two weeks of the commencement of this contract.
 - b) Stakeholder Engagement Plan within two weeks from the commencement of this contract.
 - c) Submission of and execution of the Communications Strategy within 8 weeks from the commencement of this contract.
 - d) Completion of the National Launch Meeting and the eight public/sectoral meetings and submission of the Public Consultation Report within three months from the commencement of this contract.
 - e) The submission of the Draft Final ICZM Plan within four months from the commencement of this contract.
 - f) The submission of the Final ICZM Plan within five months from the commencement of this contract.
- 6.2. The consultant is required to submit monthly progress reports outlining, but not limited to the following:
 - a) activities completed and overview of evaluations conducted;
 - b) upcoming activities; and
 - c) project concerns and proposed mitigation measures.
- 6.3. All reports submitted for this Contract must be produced in English and submitted as: (i) an electronic file in Microsoft Word format that contains the complete version of the respective reports (including, as applicable, executive summary, cover pages, table of contents, appendices, figures, graphics and tables); and (ii) an electronic file in PDF of each completed report. These reports and files should be submitted to the Project Manager, CRMP, Coastal Zone Management Unit, Barbados.

7. PAYMENT SCHEDULE

7.1. Payment will be made on the submission and approval of the deliverables as described in paragraph 6.1 as follows:

- Inception Report – **10%**
- Stakeholder Engagement Plan- **5%**
- Submission and Execution of the Communications Strategy- **15%**
- Completion of the National Launch Meeting and the Public/Sectoral Meetings and submission of the Public Consultation Report- **25%**
- Draft Final ICZM Plan- **30%**
- Final ICZM Plan- **15%**

8. COORDINATION

8.1. The consultant will report directly to the Project Manager of the CRMP who will supervise the consultancy. Staff from the CRMP Project Execution Team (PET) will provide technical, administrative and coordination support to the consultancy.