

## **Section 7. Terms of Reference**

### **BARBADOS COASTAL RISK ASSESSMENT AND MANAGEMENT PROGRAM**

#### **BA-L1014; 2463/OC-BA**

### **Development of a Draft Updated Integrated Coastal Zone Management Plan, 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 in, or near the coast. 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: storm surges and winds. Also, it is 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, is therefore associated with a high level of coastal risk .

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 disasters . 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 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 scenario . 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 survive . 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 average.

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 – to be felt 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, 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 reflect changes in environmental and socio-economic conditions over time.

1.7. The CZMU is one of several agencies within the Ministry of Environment and Drainage with responsibility for the stewardship of coastal resources in 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 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 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 CZMU in risk modelling and assessment, data management; 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 (TCDPO, DEM, Ministry of Tourism, 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 public education and awareness campaign on disaster risk).

## **2. SPECIFIC OBJECTIVES OF THE ASSIGNMENT**

2.1. The specific objectives of this assignment are:

1) Update of the national ICZM Plan is to produce a policy document for the coastal zone that is able to address the existing bottlenecks and problems in land use development and planning within the coastal zone. The update shall be done in such a way that the coastal socio-economic system becomes more resilient with respect to coastal risks and optimally adapted to the probable impacts of climate change. Mainstreaming of comprehensive disaster management and climate change adaptation is therefore a key element that has to be taken into account in the update.

The Plan should provide updated management guidelines and implementation procedures which public agencies and private individuals can draw upon to achieve sustainable coastal zone use and development.

2) To prepare recommendations for the amendment to the Coastal Zone Management Act (1998), Draft Order and prepare regulations under this Act which would provide the legal basis under which the CZMU could carry out its functions to effectively manage the resources of the coastal zone while incorporating DRM and CCA.

## **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 the proposed methodology, work plan and schedule for completing the tasks described below.

### **Objective 1**

b) Review the existing ICZM Plan by:

i) Identifying and characterizing the inconsistencies and gaps within the three volumes, including those related to the implementation of Disaster Risk Management (DRM) and Climate Change Adaptation (CCA); and

- ii) Taking into account the most recent knowledge on the Barbados coastal zone including the results generated under Component 1 of the Coastal Risk Assessment and Management Program (CRMP), particularly Subcomponents- 1.2: Comprehensive Risk Evaluation; 1.3 Update of the System of Indicators of Disaster Risk and Risk Management for Barbados and; 1.4 Design and Implementation of a National Integrated Coastal Risk Information and Planning Platform;
- c) Based on the review noted in a) above prepare and submit a Baseline Knowledge Report outlining the strengths and weaknesses of the Plan and provide recommendations for improvements to the plan in order to incorporate DRM and CCA.
- d) Using a highly consultative process, convene a workshop (Workshop 1) in order to present the findings of the Baseline Report and to obtain comments and feedback on this report from the CZMU, key strategic partners and other stakeholders recommended by the CZMU.
- e) Prepare a report on the bottlenecks of plan implementation, including an assessment of enabling conditions regarding the institutional and legal framework.
- f) Prepare and submit a Draft Integrated Coastal Zone Management Plan by:
  - i) Reviewing and re-defining the boundaries of the coastal zone management area, using the outputs of Component 1 of the CRMP will be pivotal to the determination of the boundaries of this area. Consideration shall also be given to the recent proposal for the exploration for fossil fuels within the Exclusive Economic Zone of Barbados for the offshore boundary.
  - ii) Through discussions with the CZMU, prepare and submit a description of the re-defined boundaries of the coastal zone management area in a detailed written format as well as GPS coordinates, using field mapping and surveying techniques. The CZMU will provide a copy of the previous detailed description for the west coast of Barbados.
  - iii) Preparing and submitting a Draft Order delimiting the coastal zone management area and convene a workshop (Workshop 2) with CZMU and the key strategic partners, including the Ministry of Environment and Drainage and the Chief Parliamentary Counsel, for comments.
  - iv) Revising and submitting the Draft Order which incorporates the comments from Workshop 2.
  - v) Updating the policy framework document (Volume 1) by mainstreaming DRM and CCA into policies and guidelines taking the strategic direction, outlined in the Strategic Action Plan, into consideration. This document shall be presented to and approved by stakeholders at a consultation session before the other volumes of the Plan are revised;
  - vi) Updating Volumes 2 and 3 of the Plan by taking the following into consideration:
    - The changes in time with regard to the conditions of the Barbados coast and modern insights with respect to coastal risks and climate change.

- The Revised National Physical Development Plan (2003) and the proposed amendments, policies and plans proposed for the East Coast National Park, as well as any other relevant national policy documents.
  - Any new and emerging Government and non-Government initiatives that may directly or indirectly impact on Barbados's coastal and offshore marine space and recommend coastal management procedures and guidelines in the Plan to regulate those initiatives.
  - Global best practices in planning for the coastal zone that will lead to demonstrable cutting edge management guidelines and implementation procedures;
  - Promoting the improvement of coastal ecosystem resilience within the Plan, as a means to CCA and DRM;
  - Revising and updating the existing action brief found in the Plan;
  - Updated information on all coastal structures and rehabilitation works;
  - Improvements in the institutional capacity for implementation of the Plan that will be incorporated into the proposed Strategic Action Plan under the CRMP.
  - New information acquired through diagnostic surveys (Component 1 of CRMP), improved comprehension and knowledge emerging from previous Government projects;
  - Proposing an updated list of primary coastal management functions, with responsible agencies and appropriate legislative framework. For each of these functions it should be made explicit to what extent the implementation of these functions are dependent on either an institutional or legislative reform (or both). This list of functions will be cross-checked against the categories of coastal and climate change risks in order to identify the key nodes for mainstreaming DRM and CCA with coastal policy and planning. (See ANNEX 1 for the list in the current Plan)
  - The revision of the Plan shall be done through a highly consultative process with various sectors of the Barbados landscape. These sectors shall include but not be limited to: government agencies, the private sector, civil society, non-Governmental organisations, vulnerable groups, etc.
- g) The consultant shall prepare and submit a Schedule of Public Meetings agreed to by the CZMU.

## **Objective 2**

- a) Review relevant international and regional agreements and legal instruments to which Barbados is signatory, that may require amendments to existing national legislation in order to incorporate DRM and CCA;

- b) Review relevant international and regional legal instruments which may help in the updating and /or amending of the existing national ICZM legislation in order to incorporate DRM and CCA as well as the scientific findings gathered from Component 1 studies and the NCRIPP
- c) Review the Coastal Zone Management Act Cap. 394 (1998), and related legislation including, but not limited to, the Marine Pollution Control Act (1998); Emergency Management Act 2006; the Town and County Planning Act, Cap. 240, and the National Conservation Commission Act; the Tourism Development Act, Cap. 341; Fisheries Act, Cap 391 and the Marine Boundaries and Jurisdiction Act;
- d) Review the existing ICZM Plan as well as relevant national policies and plans associated with the legislation referenced in c) above;
- e) On the basis of a) through d), prepare and submit a draft policy paper detailing:
  - i) required updates and amendments to the Coastal Zone Management Act, and consequential amendments to other legal instruments, as appropriate;
  - ii) required regulations to accompany the proposed amendments to the CZM Act. These regulations will provide the CZMU with procedures for management and control of activities within the coastal zone management area; and
  - iii) required amendments to the Coastal Zone Management Act and attendant regulations brought about by the updating of the ICZM Plan (Objective 1 above).
- f) Present the policy paper for the amended CZM legislation and the associated regulations to the CZMU and strategic partners for comments and feedback at a Consultation Session (Workshop 3). This paper shall include a comprehensive analysis of the process of legislative review, amendments and regulation development. The paper, as well as a copy of all PowerPoint presentations, must be submitted to the Project Manager in advance of the consultation session.
- g) Submit the Final Policy Paper to the CZMU which incorporates the comments from the consultation session.

#### **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: Q2, 2018 – Q2, 2019. Approximately nine (9) 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;
- v. Geographical Information Systems Specialist with a minimum Master's degree in Spatial Management with a minimum of five (5) years' experience; and
- vi. Attorney-at-Law with a minimum of 10 years' recent experience in the drafting of environmental legislation.

## **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 one (1) month of the commencement of this contract.

### **Objective 1**

- b) Baseline Knowledge Report for the Plan and Workshop 1 within two (2) months of the commencement of this contract.
- c) Description of the redefined boundary of the coastal zone management area within three (3) months of the commencement of this contract.
- d) Draft Order delimiting the coastal zone management area and Workshop 2 within four (4) months of the commencement of this contract.
- e) Revised Draft Order within five (5) months of the commencement of this contract.

f) The Draft ICZM Plan and Schedule of Sectoral and Public Meetings within seven (7) months of the commencement of this contract.

## **Objective 2**

- a) Draft Policy Paper and Workshop 3 within six (6) months of the commencement of this contract.
- b) Final Policy Paper within seven (7) months of commencement of this contract.

6.2. All reports submitted for this Contract must be produced in English and submitted as: (i) three printed and bound hard copies; (ii) 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 (iii) an electronic file in PDF of each complete report. These reports and files should be submitted to the Project Manager, 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%
- Baseline Knowledge Report – 10%
- Description and Revised Draft Order – 20%
- Draft Integrated Coastal Zone Management Plan- 40%
- Schedule of Public Meetings- 5%
- Draft Policy Paper- 10%
- Final Policy Paper- 5%

## **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. The consultant will maintain regular contact with the PET and provide the PET with informal updates on the progress of the work and to discuss any issues that

may need to be resolved or opportunities which may arise, in order to facilitate the successful implementation of the activity.