TERMS OF REFERENCE

This consultancy seeks to contract a consultant to prepare a comprehensive report on climate change vulnerability and adaptation-related issues for the Third National Communication for Trinidad and Tobago.

Position: Vulnerability and Adaptation (V&A) Assessment Expert

Project: Preparation of Trinidad and Tobago’s Third National Communication (TNC) and First Biennial Update Report (BUR) to the UNFCCC

Duration of Contract: 10 months

1. Introduction

The project is being implemented by the Ministry of Planning and Development of Trinidad and Tobago in collaboration with the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP). The project will enable Trinidad and Tobago to prepare and submit its Third National Communication (TNC) and First Biennial Update Report (BUR) to the Conference of Parties (COP) of the UNFCCC in accordance with its commitments as a Party as mandated by Article 12 of the Convention and subsequent COP decisions. The TNC shall be based on all relevant COP decisions for National Communications of Non-Annex I Parties to the UNFCCC especially its decision 17/CP.8 and the First BUR will be based on the obligations to the Convention under Decision. 1/CP. 16 par. 60 and Decision 2/CP. 17 par. 41 and its Annex III.

A critical component of the project is to provide information on the vulnerability to the adverse effects of climate change, and on adaptation measures being taken to meet the country’s specific needs and concerns arising from the adverse impacts.

The assessment will cover the impacts of climate change, climate variability and projected climate change impacts in the coastal zone. For the purposes of this consultancy, the operational definition of the coastal zone proposed in the 2014 Draft ICZM Policy Framework shall be used, which sets out three classifications covering the terrestrial and sea areas:
• Zone T1: Immediate and direct impact area- this area is delineated on the seaward side as the line of low-water at mean low-water spring tides and on the landward side as the 5 meter contour. The 5m contour represents the limit of immediate and direct impact of sea level rise and storm surges;

• Zone T2: Area of influence- the area contained between the 5 meter contour and 90 meter contour. This area and Zone T1 contains most of the urban, industrial and agricultural areas of the country and influences the marine and coastal areas through direct and indirect impacts.; and,

• Sea Zone S1: Immediate and direct impact area (3 nautical miles)- This zone (S1) shall be delineated on the landward side from the low-water at mean low-water spring tides and shall extend to a distance of three nautical miles offshore parallel with the mean high-water mark, consistent with the outer limit defined for the coastal nearshore in the Water Pollution Rules, 2001

Most of the development in Trinidad and Tobago is located within the coastal zone. This includes industry, housing, commerce and other important infrastructure as such roads, bridges, ports, and fish landing site.

This consultancy seeks to contract a suitable professional to work with the Ministry of Planning and Development as well as the TNC Project Team to complete a detailed, climate-controlled Vulnerability and Adaptation assessment of the coastal resources of Trinidad and Tobago and the sectors within it, using Regional Climate Models and national vulnerability GIS maps.

2. Objectives of the Study

1. To assess the impacts of climate change, climate variability and projected climate change impacts in the coastal zone that encompasses the key bio-physical and socio-economic impacts on marine ecosystems, biodiversity (including fisheries resources), agriculture, water resources, human health, human settlements and infrastructure, food security, and the Main Ridge Forest Reserve in Tobago.

2. To identify policy gaps and potential opportunities that will enable the Government to formulate plans and strategies for adaptation in these sectors that will be included in the TNC report as per the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines.

3. To increase capacity of key stakeholders on downscaled climate change models for projection development, and sectoral vulnerability and adaptation models.

3. Scope of works

The scope of works includes but is not limited to the following:

Task 1. Prepare a work plan for the assignment:

3.1 Identify preliminary background information related to the assignment, including procedure and arrangements to be adopted in the collection and
Compilation of data and information. Specifically, include a description of methodologies, tools and data used, including scenarios for assessment of impacts of the vulnerability and adaptation to climate change.

3.2 Detail a schedule of meetings, training workshops and consultations;

3.3 Determine methodologies to be used for the Vulnerability and Adaptation (V&A) Assessment; and,

3.4 Finalize the work plan and timetable. The work plan report will be prepared by the Consultant and submitted to the Project Steering Committee for approval. The work plan and meeting report will guide this assignment to facilitate timely completion of all tasks and satisfactory end result.

**Task 2. Undertake stocktaking exercise:**

3.5 Conduct a comprehensive literature review, and an assessment of documents in terms of vulnerability and adaptation to determine bio-physical and socio-economic impacts including as far as possible issues related to loss and damage to sectors found within the coastal zone;

3.6 As appropriate, gather information from relevant stakeholders on adaptation plans and projects;

3.7 Identify new and effective measures and approaches in line with the most current climate change scientific findings;

**Task 3. Conduct a Vulnerability and Adaptation (V&A) Assessment of the coastal zone including the sectors within it:**

3.8 Identify the various kinds and levels (ranking) of existing and potential risks for the coastal zone including the sectors within it.

3.9 Identify the level of vulnerability of the coastal zone including the sectors within it based on the exposure and sensitivity to the kinds of hazards identified and the current adaptive capacity of the coastal resources.

3.10 Assess vulnerability of the coastal zone including the sectors within it, to projected climate changes utilizing relevant downscaled climate models or other models as appropriate;

3.11 Identify adaptation options including relevant technological applications in the coastal zone and the sectors within it based on projected climate changes assessed from downscaled climate change models as appropriate;

3.12 Identify challenges and barriers to implementation of measures to address climate risks identified in the Vulnerability and Capacity Assessment (VCA) Report Trinidad & Tobago -Technical assistance for the environment programme -EUROPEAID/136530/DH/SER/TT report including socio economic and political considerations and make recommendations to overcome the identified barriers ensuring stakeholders input.

3.13 Assess in a semi-qualitative and semi-quantitative manner the extent of loss and damage caused by slow onset events in the various sectors within the coastal zone, (slow onset events are identified in Decision 1/CP.16, paragraph 25 to include “sea level rise, increasing temperatures, ocean
acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification”

3.14 Identify the impacts of cyclones, extreme weather events and associated storm surges and flooding on coastal populations with emphasis on tourism based developments;

3.15 Assess adverse impacts of projected climate changes on economic growth, poverty reduction, livelihood, human health, employment and women;

3.16 Assess cross sectoral issues and linkage between livelihoods and disasters;

3.17 Conduct economic feasibility for the adaptation recommendations made in the Vulnerability and Capacity Assessment (VCA) Report Trinidad & Tobago -Technical assistance for the environment programme - EUROPEAID/136530/DH/SER/TT;

3.18 Determine microclimate impacts on coastal resources (Microclimate is defined as the distinctive climate of a small-scale area. The weather variables in a microclimate, such as temperature, rainfall, wind or humidity, may be subtly different from the conditions prevailing over the area as a whole and from those that might be reasonably expected under certain types of pressure or cloud cover);

3.19 Assess the adequacy of climate monitoring and early warning systems and make recommendations for early warning system including in respect of quantity and quality of climate information required for efficacy and improvement of these systems;

3.20 Develop vulnerability maps on GIS platforms in the coastal zone using various climate projections for 2030 and 2050 based on downscaled models;

3.21 Determine climate change impacts on socio-economic aspects to incorporate considerations of climate risks related to adaptation using the scenarios above, against a suitable socio-economic baseline.

3.22 Estimate economic costs of intervention options for vulnerability assessment;

3.23 Conduct stakeholder consultations to achieve the above tasks. Stakeholder consultation reports must be compiled and submitted within one week of consultations;

3.24 Develop the draft chapter on the vulnerability assessments to be included in the TNC report; and,

3.25 Finalize the chapter on vulnerability and adaptation assessment to be included in the TNC Report via stakeholder consultations.

Task 4. Prepare and conduct a training programme for policy makers and key stakeholders:

3.26 Identify relevant policy makers and key stakeholders.

3.27 Disseminate the most current information on V&A through: Workshops and training on relevant tools, methodologies and guidelines for Vulnerability Assessment.
The detailed work plan must be provided within ten (10) working days of the start of the consultancy. The work plan should detail the methodology, deliverables, milestones and the timelines to be approved by the Project Team.

4. Duration of the Study

The total duration of this work is ten months from its date of commencement.

5. Key Deliverables

The consultant shall submit an electronic copy of both draft and final reports. Payments will be effected upon submission and approval of deliverables as indicated in Table 1:

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<tr>
<th>No</th>
<th>Deliverable</th>
<th>Payment</th>
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<tbody>
<tr>
<td>1.</td>
<td>Acceptance of work plan</td>
<td>10% of total agreed amount</td>
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<tr>
<td>2.</td>
<td>Report on the challenges and barriers to implementation of measures to address climate risks identified and new and effective measures and approaches in line with the most current climate change scientific findings.</td>
<td>10% of total agreed amount</td>
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<td>3.</td>
<td>Report on improved climate change projections with the use of advanced and updated Regional Climate Models</td>
<td>10% of total agreed amount</td>
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<td>4.</td>
<td>Report on the economic feasibility for the adaptation recommendations made in the VCA Report</td>
<td>10% of total agreed amount</td>
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<td>5.</td>
<td>Report on the vulnerability and adaptation assessment for the coastal zone of Trinidad and Tobago which includes national vulnerability GIS maps for the coastal resources under various emission scenarios and time periods.</td>
<td>20% of total agreed amount</td>
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<td>6.</td>
<td>Successful delivery of the training sessions and workshop reports on training conducted on stakeholders to enhance their capacity to apply the selected framework and methodology for conducting the V&amp;A Assessment.</td>
<td>20% of total agreed amount</td>
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<td>7.</td>
<td>Finalised Chapter on climate change vulnerability assessment and adaptation related issues for TNC report.</td>
<td>20% of total agreed amount</td>
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Note:
The Client reserves the right to request interim reports of the tasks detailed in the scope of works. All data collected, calculations made and models used and developed by the Consultant for use in this Project shall become the property of the Government of Trinidad and Tobago.

6. Background Documents, including but not limited to:
i. Guidelines for the preparation of National Communications from Parties not included in Annex I to the Convention adopted by 17th Conference of Parties (Decision 17/CP.8);

ii. Adoption of the Paris Agreement (Decision 1/CP.21);

iii. The Second National Communication (SNC) report;

iv. Vulnerability and Capacity Assessment (VCA) Report Trinidad & Tobago -Technical assistance for the environment programme -EUROPEAID/136530/DH/SER/TT;

v. Design and Feasibility Study for a Risk-Resilient Integrated Coastal Zone Management Program: Component 1 (TT-T1038) Economic Contribution of the Coastal Zone;

vi. Relevant national studies as appropriate including relevant Environmental Impact Assessments.

7. Qualifications and Experience

- Post graduate qualification in environmental science preferably related to climate change issues;
- At least 10 years’ experience in climate change vulnerability and impact assessment;
- Familiarity with vulnerability assessments and adaptation methodologies including those developed under the IPCC and the UNFCCC and previous works carried out related to this study;
- Experience in conducting training on climate change vulnerability and adaptation assessment methodologies and approaches, and on downscaling climate change modelling (as per objective 3);
- Excellent communication skills, good working relationship with the government and other organisations, and ability to collect and analyse data and information;
- Demonstrated competence in developing GIS based outputs;
- Demonstrated skills in project preparation and report writing;
- Fluency in English.

Applications are invited from local and regional individuals to undertake the Vulnerability and Adaptation Assessment for Trinidad and Tobago’s Third National Communication to the UNFCCC. Candidates must submit both a technical and a financial proposal.