



UNITED NATIONS

ECLAC

TERMS OF REFERENCE FOR  
**COASTAL AND MARINE SECTOR EXPERT**

REVIEW OF THE ECONOMICS OF CLIMATE CHANGE IN THE CARIBBEAN  
**PHASE II**

**Background**

Caribbean societies can be broadly characterized as small open economies that are largely service and natural resource-based, with varying levels of poverty and inequality, low levels of social protection, significant external international migratory flows, and significant levels of social exclusion. They are also societies that are facing serious challenges in the interaction between the human population and the environment that sustains them, an underlying stress that is being exacerbated by climate change. Given the nature of their economies, they are particularly vulnerable to the impact of natural disasters that can result in the widespread destruction of the productive economy, mainly through the capital stock. The interruption of the production of goods and services can be particularly devastating in an environment where few large sectors (agriculture, tourism and mining) dominate the economic landscape. This pattern of development means that these societies are facing the impacts of climate change with serious disadvantages, hence the urgency to address the environmental, social and economic dimensions of climate change concurrently and in an integrated manner. The consequences of climate change for the Caribbean will make it increasingly difficult to respond to the challenges of vulnerability and social exclusion in the pursuit of poverty reduction and the achievement of the Millennium Development Goals (MDGs). At the 13th Meeting of United Nations Framework Convention on Climate Change (UNFCCC), it was recognized that there is a need to: (a) assess the impacts of climate change on development in Latin America and the Caribbean (LAC); (b) understand the distribution of these impacts within the LAC region, given the diverse geographical, economic and social structures of LAC countries and the special needs of the Caribbean SIDS; and (c) mobilize decision makers to undertake specific actions to address these impacts.

In the context of international initiatives on climate change and the challenges that climate change pose for regional development, the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) sub-regional headquarters for the Caribbean (ECLAC-POS) and Mexico (ECLAC-Mexico), and the Department for International Development (DFID) of the United Kingdom of Great Britain and Northern Ireland are embarking on an initiative that seeks to address the impending global and regional impacts of climate change as articulated in the 4<sup>th</sup> Report of the Intergovernmental Panel on Climate Change (IPCC). As such a project document entitled “Review of the Economics of Climate Change in the Caribbean” has been jointly prepared by ECLAC and DFID. The ultimate direct objective of the project is to assess the likely economic impacts of climate change on key sectors of the

Caribbean<sup>1\*</sup> economies, conduct economic analyses of adaptation measures, and to stimulate governments, regional institutions and private sector actions to develop and implement policies to mitigate and adapt to climate change.

### **Objectives of the Project**

The project would comprise three phases of which Phase 1 have been completed and Phase 2 would be implemented over the period January 2010 to XX June 2010. The major objectives of the Second Phase are firstly, the co-ordination, planning and implementation of the project; secondly to conduct country studies in at most three of the most vulnerable studies in the states participating in this study as stated by project activities while the objective of the Phase 3 is to conduct sector studies and organize activities for strengthening institutional in the Caribbean Region.

In order to facilitate the successful implementation of the Second Phase of the project, ECLACPOS will be recruiting national consultants, where possible, to conduct several country studies included in project activities.

### **Scope of Work**

The consultants will be expected to conduct the necessary research and written analysis required in order to deliver a report on marine and coastal biodiversity and ecosystems. Consultants are expected to work in close collaboration with ECLAC staff members and ECLAC consultants along with the Caribbean Community Climate Change Centre (CCCCC), Caribbean Community (CARICOM) and other institutional stakeholders throughout the Caribbean region. Consultants are expected to conduct field-missions and participate in stakeholder consultations during the process of preparing the reports. The consultants may also have to present the findings of the studies at scheduled seminars/conferences.

### **Methodology**

#### **MARINE AND COASTAL BIODIVERSITY AND ECOSYSTEMS**

##### **Budget**

Marine Eco & Bio	60 000	16 000	3 000	24 000	1 500	4 000	108 500
Timeline: Six months, starting from January 2010 to August 2010.							
Budget: 60,000 US for consultants, 16,000 US for consultant's missions, 27,000 for PCU mission, 1,500 US for miscellaneous and 4,000 US contingency with a total of 108,500 US.							

<sup>1</sup> In this context 'the Caribbean' refers to the following island economies: Anguilla, Aruba, Antigua and Barbuda, the Bahamas, Barbados the British Virgin Islands, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Montserrat, the Netherlands Antilles, Puerto Rico, Saint Lucia, St Kitts and Nevis, St Vincent and the Grenadines, Trinidad and Tobago and the United States Virgin Islands. It also includes Suriname, Belize and Guyana which, whilst non-islands, are usually considered small-island developing States (SIDS) as they have 'island-like' features. The French overseas territories of Martinique and Guadeloupe are not associated with the ECLAC Subregional Headquarters for the Caribbean.

Report will include the following:

- A baseline scenario on biodiversity and services provided by coastal and marine ecosystems and biodiversity,
- Estimated impact of climate change, risks and threats,
- Scenarios for biodiversity and marine ecosystems,
- Adaptation options, and strategies, costs and benefits associated
- Models used in carrying out the analyses and the justification for using such models.

Activities will include

- Coordinating with ECLAC staff members on the scope of the report
- Coordinating and planning with ECLAC staff members the field work missions to be conducted in selected Caribbean countries. The consultants will plan with ECLAC staff the list of institutions to visit, the sectors to be covered and the list of data and studies to be collected;
- Conduct field work missions and lead stakeholder consultations, along with other consultants recruited by ECLAC. This will include consultations with national government (including climate change focal points in relevant ministries, climate change working groups, UNFCCC national communications working groups); regional organizations; civil society; academia and the United Nations system;
- Reviewing and collecting of data and studies socioeconomic, environmental and climate change aspects in the Caribbean. This should include data and information compiled and used for reports to international agencies.
- Conducting economic analyses on the sector due to extreme events.
- Conducting economic analyses that will indicate the impact on coastal and marine resources associated with CC and without CC. In these analyses the models used must be clearly articulated and reasons for utilizing same articulated. Additionally, the analyses should include issues inclusive of species diversity, invasive species, how many more species may become endangered, and an estimation of increased efforts for conservation and management; and
- Conducting economic analyses on CC adaptation measures to reduce the impacts of CC on marine and coastal resources.

**Deliverables:**

Key outputs will include:

- A baseline for services provided by marine and coastal ecosystems system (supporting, providing, cultural & scientific) with quantitative estimates of services, along with the institutional framework for managing the sector and the recent and emerging challenges.
- Using GIS technology to demonstrate the baseline condition and the anticipated effects on the marine and coastal resources associated with CC impacts.

- Risks, and impacts associated to temperature increase and change in circulation and marine conditions,
- Impact scenarios for marine and coastal systems and services: 1) Coastal wetlands, Forests, Dunes, Beaches, Cliffs and Rocky Shore, 2) Sea grass and Coral reefs, 3) fish species and fisheries, 4) seabirds, coastal waterfowls, mammals and other species.5) connectivity and circulation changes 6) sea level 7) acidification, 8) diseases and invasive species, 9) algal blooms and plankton,
- Quantitative and qualitative estimates of impacts on marine and coastal services and possible adaptation and adaptation costs and benefits,
- Impacts on fisheries, coastal zones and beaches, with quantitative and qualitative estimates,
- Increased impacts from main rivers (Orinoco and Magdalena) due to climate change,
- Gaps in knowledge, research and conservation needs.

#### **A. Reporting**

- Prepare a draft report in Microsoft Office 97-2000, using Font Times New Roman 12;
- Finalise the report for submission to ECLAC by 14August 2010.

#### **Deliverables:**

Key outputs will include:

- By 31 May 2010, a 1<sup>st</sup> draft national report that would present the available data for the state;
- By 15 July, a 2<sup>nd</sup> draft national report incorporating preliminary comments from stakeholders;
- By 14 August, a final report that would incorporate the comments of relevant stakeholders from the Caribbean.

The study and all other related work produced by the consultant during the execution of this consultancy will be the exclusive property of ECLAC.

#### **Duration**

The contract will be for 6 months for the period 15 February to 14 August 2010.

**Salary:** The consultant shall receive a remuneration of US \$6,000 for the whole period of the contract to be paid in 2 installments. The first installment of 40% will be paid after submission of the first draft on 31 May 2010 and the remaining 60% will be paid once the report are finalized and approved by ECLAC and after the incorporation of comments and suggestions from various stakeholders by 14 August 2010. In the course of field work missions and for presentations at meetings, the consultant shall receive a Daily Subsistence Allowance (DSA) per night of stay in the country where work is being conducted, according to prevailing United Nations rates.

ECLAC shall cover all travel-related expenses (air fares and terminal expenses only and DSA per night) during the course of the mission.

## **Qualifications**

### Education

Advanced university degree in marine ecology, geography, environmental management or any other relevant field. A combination of relevant academic qualifications and experience may be accepted in lieu of the advanced degree.

### Work Experience

At least 7 years of professional experience in the area of environmental economics, environmental management or any other relevant work area (either in teaching, policy formulation at government, regional and international level, or academic research). Experience in climate-change related issues such as assessment of the economics of climate change, climate change adaptation and mitigation, as demonstrated by a record of publications, academic research or involvement in climate-change policy formulation, will be a strong asset.

### Languages

Fluency in written and spoken English; working knowledge of Spanish will be an asset

### Competencies

Ability to work as part of a multi-cultural team; strong communication skills including an ability to facilitate consensus in meetings and consultations; ability to present complex concepts and technical studies in a clear, concise manner and to adapt language, tone, style and format to match the audience; excellent drafting ability.