

INVITATION TO TENDER

GEF 6 - Integrated Ecosystems Management and Restoration of Forests in the South East Coast Project

Consultancy

To undertake a Carbon Sequestration Assessment of Rehabilitated Forests and degraded areas and Blue Carbon Assessment of Rehabilitated Marine Ecosystems in the South East Coast.

Invitation

The Government of Saint Lucia, through the Department of Sustainable Development (Ministry of Education, Sustainable Development, Innovation, Science, Technology and Vocational Training) is inviting suitable candidates to submit tenders for a consultancy to undertake a carbon stock analysis of the Forests and marine ecosystems in the South East Coast.

Project Location

Saint Lucia, with particular focus on the South East Coast, from Mandele Point in Dennery to Laborie.

TERMS OF REFERENCE

1.0 BACKGROUND

- 1.1.** The South East Coast (SE Coast) of Saint Lucia is considered the home of many rare and endemic animal and plant species. Birds (such as the St Lucia Black Finch) and reptiles (like the St Lucia Racer) are particularly well represented in this area, in addition to rare and restricted range plants. The habitats themselves – deciduous tropical dry forests, mangroves and xeric scrublands which are threatened throughout the Eastern Caribbean are also best represented there.
- 1.2.** The island currently boasts 12 Forest Reserves and 24 Protected Forests covering about 15% of the island. The reserves perform essential functions in safeguarding and regulating the island's water supply, preventing soil erosion and landslides, supporting the country's present and future renewable fuel supply and providing many services such as nutrient enrichment, and pollination through its wildlife species. Main threats are habitat modification and destruction. Habitat change is occurring at a rapid rate and is expected to increase even further in the future with the projected increase in hotels, recreational activities earmarked for coastal

regions, and an increase in housing and infrastructure which may impact dry forest areas.

- 1.3.** The participatory threat analysis carried out in 2009 under the EC funded National Forest Demarcation and Bio-physical Resource Inventory Project¹, identified as the main threats and pressures on forest biodiversity, habitat modification and destruction. Habitat change is occurring at a rapid rate and is expected to increase even further in the future from ongoing degradation and loss of deciduous seasonal forests, mangroves and freshwater swamp forests due to residential, tourism and other developments², alien invasive species; and, for a few species, over-exploitation. The analysis demonstrated that forests outside of the Forest Reserve system were approximately four times more at risk from severe threats than forests inside the reserves: highlighting the effectiveness of the reserves management. A preliminary analysis of the carbon storage of Saint Lucia's forests was also conducted as part of the 2009 Biodiversity Assessment of Saint Lucia's Forests. The analysis showed that approximately 1.8 million tonnes are stored within the Forest Reserve and 1.2 million tonnes outside the Forest Reserve, with clear potential for the latter figure to increase by enabling young secondary forests to mature.
- 1.4.** The South East Coast has been documented as a Key Biodiversity Area (KBA) and an Important Bird Area (IBA). Priority ecosystems of the South East Coast comprises of Makote Mangrove and Savannes Bay mangrove. Both of which are designated Reserves, and adjoin private estates poised for development. Immediate threats include invasive alien species (IAS), degradation of conch habitats, dumping in mangrove areas, and sand mining. Permission has been granted in principle for developments which have the potential to damage or destroy Marine Reserves, with little apparent attempt to avoid or mitigate adverse impacts, whilst in other cases damaging activities seem to be ignored by the relevant authorities. Management of forest, riparian, mangrove and marine areas is also absent, and livelihoods options limited.
- 1.5.** Accordingly, many regional and national level efforts have sought to address the ill effects of an unclear development planning framework, coupled with poor land management processes. However, the implementation of these project-driven interventions targeting specific types of challenges associated with poor land use planning, have for the most part been dis-jointed with the outcome being a largely under-developed framework for land use planning and ongoing degradation on a national scale, with some specific to the NE Coast of Saint Lucia.
- 1.6.** Some of the regional level project interventions include Sustainable Financing and Management of Eastern Caribbean Marine Ecosystems Project, funded by the GEF and implemented by the World Bank through The Nature Conservancy, USAID/OECS Climate Variability, Change and Mitigation Project. Global Climate Change Alliance (GCCA) project on climate change adaptation and sustainable

management in the Eastern Caribbean. Some of the national-level relevant project-driven interventions include the

¹ Biodiversity Assessment of Saint Lucia's Forests, with Management Recommendations, Jennifer C. Daltry (Fauna and Flora International)

² Projected increase in hotels, marinas and golf courses earmarked for coastal regions, and an increase in housing and infrastructure.

1.7. Saint Lucia Forest Restoration and Rehabilitation Project funded by the Government of Australia, Saint Lucia Pilot Program for Climate Resilience (PPCR) & DVRP, Saint Lucia Coastal Habitat Mapping Project under the European Union-Special Framework for Assistance Project, Increase Saint Lucia's Capacity to monitor MEA implementation and sustainable development: This cross-cutting capacity development (CCCD) project seeks to strengthen institutional capacity for the implementation and monitoring of international conventions as a follow-up to the National Capacity Self-Assessment (NCSA) of Saint Lucia, The Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (GEF-IWEco Regional Project), Sustainable Financing and Management of Eastern Caribbean Marine Ecosystems. This regional project which includes Saint Lucia is funded by the GEF and implemented by the World Bank through The Nature Conservancy, the Iyanola Natural Resource Management of the NE Coast Project, a project with the objective of increased management effectiveness and sustainable use of the North East Coast's natural resource base to generate multiple global environmental benefits.

1.8. The application and expansion of these interventions in the South East Coast, particularly with regard to long-term sustainability have been impeded by inadequacies within the wider policy and institutional environments that do not adequately allow for mainstreaming of these interventions beyond the realm of "project-driven, site-specific" actions. Further, the mechanisms for the implementation of appropriate and "fit-to-purpose" sustainable land and water management and biodiversity conservation interventions have remained outside of traditional government programmes and budgets and as a result these remain some areas of key concern in the South East Coast:

1.8.1. Land Use Planning: Absence of planned, guided and managed development of all types (residential, agricultural, touristic and access) which takes into account ecosystems goods and services.

1.8.2. Safeguarding of Key areas: Lack of measures to safeguard key areas of global and national significance such as forest, coastal and marine which also take into account national development needs.

1.8.3. Continuity: Lack of follow-up or financing for completed biodiversity

assessment and priority setting exercises.

1.8.4. Sustainable replacements: Lack of sustainable options to reduce pressures on ecosystem services and goods.

1.9. Under its sixth replenishment funding cycle (GEF6) The Global Environment Facility provided funding to the Government of Saint Lucia through the Department of Sustainable Development as project Executing Agency, to implement a project entitled 'Integrated Ecosystems Management and Restoration of Forests of the South East Coast', which focuses on Land use planning; Safeguarding of key areas; Continuity and Sustainable replacements. The United Nations Environment Programme (UNEP) is the project Implementing Agency. The project aims to address these concerns in three distinct components with an accompanying overarching Project Management and Monitoring and Evaluation (M&E) system. These components are as follows:

Component One: Ecosystem Management

Component Two: Restoration of Degraded Areas

Component Three: Sustainable Livelihoods

1.10. Under Component 2 - Rehabilitated Landscapes - the Forestry and Fisheries Departments will focus equally on the rehabilitation of degraded land and marine areas. The Department of Forestry will engage in the reforestation of degraded public and private lands and around critical watersheds including riverbanks or areas prone to rapid erosion thus, rehabilitating ecosystems services and improving restoration at scale. In total an area of 2,500 hectares will be rehabilitated. The Fisheries Department will be responsible for the rehabilitation of marine buffer areas such as sea grass beds, mangroves, coral reefs and degraded coastal areas which has seen significant degradation over recent years. In total, an estimated 500 hectares will be rehabilitated. The rehabilitation of the terrestrial and marine ecosystems is expected to provide long-term global benefits through the carbon sequestered as a result of the rehabilitation exercise. Thus, it is anticipated that the carbon benefits from the restoration of the mangrove restoration, sea grass beds, degraded coastal areas and of degraded forests and landscapes will be calculated at the inception of the project. Without the GEF intervention the high biodiversity, priority forest, and marine areas of the South East Coast would continue to be degraded and imperiled by development initiatives which fail to take into account local, national and global environment considerations.

2.0 OBJECTIVE, PURPOSE & EXPECTED RESULTS OF CONSULTANCY

2.1 The overall objective of this consultancy is to enhance the sustainable management of forest and marine ecosystems framework in Saint Lucia through the development of appropriate monitoring tools for forest and marine ecosystems and for calculating the global carbon benefits derived from the rehabilitation of the Forests, degraded coastal areas and landscapes, mangroves and seagrass beds in the project area.

2.2 The purpose is to facilitate the calculation of the carbon benefits of the proposed rehabilitation of 500 hectares of seagrass beds, coral reefs, mangroves and degraded coastal systems and 2,500 hectares of rehabilitated forests degraded areas in the project area and to develop a carbon benefit measuring tool to measure the restoration impact. This will be done by establishing the baseline carbon stock followed by a monitoring programme to determine increments over-time of the global carbon benefits from carbon sequestered in forests, mangroves and seagrass beds that have been rehabilitated in the South East Coast.

2.3 Results to be achieved by the consultant include *inter alia*:

1. An inventory of current above and below-ground biomass to estimate the baseline carbon stock for forest-covered areas in the project area.
2. An inventory of current biomass to estimate the baseline marine and seagrass
3. An estimation of the carbon benefits of the proposed rehabilitation of 500 hectares

- of seagrass beds, coral reefs, mangroves and productive coastal ecosystems using GEFs Financed Blue Forest project methodology
4. An estimation of the carbon benefits of the proposed rehabilitation of 2,500 hectares of degraded public and private lands, critical watershed and eroded areas using various methods for vegetation carbon storage estimation such as (i) inventory-based estimation, (ii) satellite-based estimation, and (iii) process-based estimation.
 5. A protocol and methodology for systematic monitoring and reporting for carbon sequestration for the forests, mangroves, seagrass beds and coral reefs in line with the baseline assessment.

3.0 METHODOLOGY:

(iii) With regard to forests and degraded terrestrial landscapes, the Consultant will employ the most suitable inventory methods to determine carbon stock estimates from vegetation carbon storage such as (i) inventory-based estimation, (ii) satellite-based estimation, and process-based estimation. In addition, direct measurements of variables by remote sensing instruments, coupled with field measurements and methodologies to convert measurements into stock estimates should also be considered. Ground-based measurements such as terrestrial LiDAR, or terrestrial laser scanning (ground-based) or a combination of both or simpler low-tech methodologies and other appropriate methodologies and technological measures should be utilized. Field biomass components will be identified from the source material where this information is available. The methods must include the concept of repeatability, in addition to accuracy and precision all in accordance with IPCC guidelines linked with the REDD+ roadmap developed for Saint Lucia. The methodology must be replicable to allow future assessment.

- 3.1 With reference to blue carbon, the methodology for assessing blue carbon should utilize the Blue Forest Methodology developed by GEF for assessing carbon benefits for rehabilitated mangroves, seagrass, coral reefs and degraded coastlines.
- 3.2 The Consultant will employ a participatory approach at all phases of the assignment, to derive wherever possible the necessary synergies from tasks/activities, activities including completed and ongoing initiatives that will allow for all stakeholders and beneficiaries to be involved in the formulation of all final reports for the various deliverables.
- 3.3 The Consultant will undertake focus group discussions (FGDs), one-on-one meetings/interviews with stakeholders as determined for information gathering in the preparation, completion, validation and finalization of the Project Reports and other related documents.

4.0 SCOPE OF THE WORK

4.1 The Consultant in conjunction with technical personnel from all relevant government agencies including but not limited to, the Ministry of Agriculture, Fisheries, Food Security and Rural Development, the Department of Sustainable Development, and other counterpart divisions/departments in government will assess and estimate the carbon sequestered in the forests and rehabilitated areas, mangroves, wetlands and seagrass beds and rehabilitated coastal areas in the project area. The Departments of Fisheries and Forestry are expected to be the lead agencies in the implementation of this component of the project.

4.2 Specific responsibilities:

4.2.1 The Consultant will be responsible for the following:

- i. Consolidating electronically, any documents that will serve to enhance the baseline knowledge base for the project.
- ii. In consultation with staff from the Ministry of Agriculture, Fisheries, Food Security and Rural Development, the Department of Sustainable Development and other stakeholder organization in the project area, lead consultations with stakeholders resulting in the detailed development of the following activities:

4.2.2 Task 1: Prepare the Work Plan and Inception Report

- i. Conduct inception meetings with the Contracting Authority and partners upon commencement of the project to (i) review the process and methodology for conducting the inventories and all related activities within the project, (ii) determine roles and responsibilities, (iii) discuss the basis on which this work will be implemented, and (iv) finalize the work plan and timetable. A draft work plan and report on the outcome of the inception meeting will be prepared by the Consultant and submitted to the client.
- ii. The Contracting Authority and partners will prepare and submit comments on the Draft Inception Report and Work Plan submitted by the Consultants
- iii. The Consultants will submit the Final Inception Report and work plan with comments included to the Contracting Authority after receiving comments from the Contracting Authority.

4.2.3 Task 2: Develop a Monitoring/Carbon Assessment for Sustainable Forest Management Component 2-Rehabilitated Landscapes

- i. Establish baseline(s) for forest resources & carbon monitoring, e.g. spatial extent of the proposed project areas and carbon sequestration value calculations using methodology for terrestrial systems.
- ii. Compile and evaluate national data to monitor forest change, degradation and enhancement; and provide recommendation for any improvements if required.
- iii. Calculate the carbon benefits for the anticipated rehabilitated forest and degraded areas. Recommend and provide a cost estimate for alternative monitoring system for changes in forest cover if current methodology is not adequate. This is to be done in consultation with the National Project Coordinator and Contracting Authority and the UNEP Task Manager for this project.
- iv. Develop a carbon benefit measuring tool to measure the carbon sequestration of the restoration of forests and degraded areas in the project area.

4.2.4 Task 3: Develop a Monitoring/Blue Carbon Assessment for Marine Ecosystems - Component 2-Rehabilitated Landscapes

- i. Establish carbon accounting and spatial extent baseline(s) for mangroves, sea grass beds, degraded coastal areas and coastal resources using existing datasets and tested methodologies (e.g., from the GEF financed Blue Forests Project, IPCC, etc.). Such baseline(s) will allow the inclusion of blue carbon ecosystems in national carbon accounting, the prioritizing of areas for conservation, and blue carbon project development.
- ii. Compile and evaluate national data and data gathering modalities to monitor mangroves, sea grass and coral change, degradation and enhancement assessment and make recommendations for improvements, including recognition of blue carbon values in national ecosystem management policy and in support of international commitments (i.e., UNEFF, CBD).
- iii. Explore alternative monitoring system and innovative technologies (e.g., drones) for reducing the costs related to monitoring marine ecosystem health, in consultation with the National Project Coordinator, Contracting Authority and the UNEP Task Manager for this project.
- iv. Undertake a blue carbon benefit feasibility assessment(s) to identify potential locations for community-based blue carbon offsetting related to mangroves or sea grass beds in the project area.

4.2.5 Task 4: Provide training to stakeholders on calculating Terrestrial and Blue Carbon

- i. Design a training programme with training manuals and other related training resources/material for stakeholders from the public service ministries such as Department of Fisheries and Department of Forestry, Department of Sustainable Development, other agencies such as The National Trust and other relevant stakeholders from the community in the design and methodology for calculating Terrestrial and Blue Carbon benefits of conserved and rehabilitated areas.
- ii. Facilitate the training programme for the stakeholders which should include in-field demonstrations on the assessment of the terrestrial and marine carbon calculations. The training of all stakeholders would involve a hybrid of face-to-face instruction and virtual engagement of stakeholders.

For reference:

Measurement required for:	Parameters to be estimated	Methods for monitoring/estimation
Monitoring deforestation	<ul style="list-style-type: none"> • Forest type (ecological) • Forest land cover change 	<ul style="list-style-type: none"> - Remote Sensing/ground Observation - Remote Sensing / Ground Observation
	<ul style="list-style-type: none"> (clearing size and seasonality of forest) • Canopy cover 	<ul style="list-style-type: none"> - Ground-based observations Remote Sensing
Monitoring forest degradation	<ul style="list-style-type: none"> • Forest stand volume (above ground biomass) • Forest land cover and land use 	<ul style="list-style-type: none"> - Ground observations and measurements - Remote sensing /Ground observation
Monitoring changes in carbon stock	<ul style="list-style-type: none"> • Site quality (area, forest types) 	<ul style="list-style-type: none"> - Ground measurements supplemented with satellite imagery
	<ul style="list-style-type: none"> • Forest stand volume (above ground-biomass) 	<ul style="list-style-type: none"> - Non-Destructive sampling such as forest inventories - Inference from remote sensing and models
	<ul style="list-style-type: none"> • Forest land cover and land use 	<ul style="list-style-type: none"> - Remote Sensing (along with ground observations)

	<ul style="list-style-type: none"> • Forest below-ground biomass • Forest health and damage (age, diameter, leaf area index, species group) 	- Ground measurements
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Measurement required for:	Parameters to be estimated	Methods for monitoring/estimation
Estimating averted GHG Emissions	<ul style="list-style-type: none"> • Fire (active fire detection and burnt areas) 	<ul style="list-style-type: none"> - Remote Sensing - Ground observation
Afforestation/Reforestation	Area, growth, mortality	Ground based

5.0 DELIVERABLES

5.1 The proposed consultancy will have the following deliverables:

Deliverables	Due Date after Contract Signing
Task 1: Inception Report and Work Plan:	
Draft Inception Report and a detailed Work Plan	1 week Comments in response, by Contracting Authority and partners, should reach the Consultant no later than ten (10) days after receipt of Report
Final Inception Report which will incorporate comments from Contracting Authority and relevant partners.	3 weeks
Task 2. Monitoring/Carbon Assessment for Terrestrial Ecosystems	
Submit 1 st draft Report – Carbon assessment for Terrestrial Ecosystems	13 weeks
Submit Final Report – Carbon assessment for Terrestrial Ecosystems	15 weeks

Task 3. Monitoring/Blue Carbon Assessment for Marine Ecosystems	
Submit 1 st draft Report – Blue Carbon assessment for Coastal Ecosystems	20 weeks
Submit Final Report – Blue Carbon assessment for Coastal Ecosystems	22 weeks
Task 4. Facilitation of Training Programme	
Prepare training manuals, teaching resources, power point presentations and training report for at least three training sessions on the calculation of Terrestrial and Blue Carbon	23 weeks
Task 5: Closeout Report	24 weeks

5.2 Recommendations

- i. The selected Consultant will be required to advise on the final scope of works and deliverables to ensure that the consultancy meets the objectives of the project and its components.
- ii. The Consultant will be expected to comment on the Terms of Reference and recommend potential refinements where necessary, including making such recommendations as deemed appropriate to enhance the quality of the assignment and outputs

6.0 CONSULTANCY MANAGEMENT

6.1 Project Execution and Administration

- 6.1.1** The Consultant will report to the National Project Coordinator, who will provide the necessary linkages and backstopping along with the Project Steering Committee (PSC) comprising representatives of key agencies.
- 6.1.2** All communications will be between the Consultant and the National Project Coordinator or his/her designate for the assigned work.
- 6.1.3** The Consultant will efficiently manage his/her time and responsibilities to ensure timely delivery of outputs required under

this Terms of Reference.

6.2 Place of work:

- 6.2.1** The Consultant will be based in his/her personal offices, but will be accommodated at the offices of the Department of Sustainable Development when necessary.

6.3 Travel:

- 6.3.1** The assignment will not require travel outside of Saint Lucia however, travel to the target communities and project areas will be necessary.

6.4 Reporting:

All reports will be issued in Word format and will each take the form of one hard copy and one electronic copy, submitted to the National Project Coordinator.

7.0 QUALIFICATION AND COMPETENCIES

7.1 General Qualification

- i. A Ph.D. in Forest Science, Natural Resource Management, or Agriculture with at least 3 years' experience in undertaking research of a similar nature.

Or

- ii. An MSc in Forest Science, Natural Resource Management, or Agriculture Bachelors, with at least 6 years' experience in undertaking research of a similar nature.

7.2 Experience and ability

- i. Have sound knowledge and wide experience in the development and use of participatory approaches in natural resources management.
- ii. Very knowledgeable in IPCC guidelines and methodologies
- iii. At least 6 years of working experience in forestry, especially with regard to deforestation and forest degradation data collection/monitoring
- iv. Experience in forest carbon assessment, land use and land-use change monitoring.
- v. Experience in blue carbon assessment, calculations and monitoring of marine ecosystems
- vi. Working knowledge, experience and proficient in the use of Microsoft Office including Word, Excel, and PowerPoint.
- vii. Ability to conduct research and analysis with strong synthesis skills
- viii. Ability to work in complex, multi-stake-holder project environments.

- ix. Local and regional experience in undertaking a similar assignment.
- x. A knowledge of or familiarity with Carbon Sequestration methodology calculation tools for marine and terrestrial ecosystems

7.3 Timeframe for consultancy

7.3.1 The Consultant will be contracted for a period of six (6) months.

8.0 SUBMISSION

8.1 A complete proposal consisting of separate technical and financial proposals should be contained in individual sealed envelopes and should be placed inside a sealed outer envelope. The sealed outer envelope containing submissions should be marked **“CONFIDENTIAL” “Proposal - Consultancy Services to undertake a Carbon Sequestration Assessment of Rehabilitated Forests and degraded areas and Blue Carbon Assessment of the Rehabilitated Marine Ecosystems in the South East Coast.”** The envelope should not contain company logos or the consultant’s name.

8.2 The envelope containing the technical proposals should be marked **“TECHNICAL PROPOSAL- Consultancy Services to undertake a Carbon Sequestration Assessment of Rehabilitated Forests and degraded areas and Blue Carbon Assessment of Rehabilitated Marine Ecosystems in the South East Coast.”**

8.3 The envelope containing the financial proposals should be marked **“FINANCIAL PROPOSAL- Consultancy Services to undertake a Carbon Sequestration Assessment of Forests and degraded areas and Blue Carbon Assessment of Marine Ecosystems in the South East Coast.”**

Hard copies must be submitted to the following address by 4:00 p.m. on Tuesday, June 24, 2022.

The Secretary
Public Procurement Committee
Department of Sustainable
Development Georgianna Court
John Compton Highway
Castries
SAINT LUCIA

AND/OR soft copies must be e-mailed to dps.dsdslu@gmail.com and dpssec.sded@gmail.com on 4:00 pm on June 24, 2022.

All information must be submitted in English. 5 hard copies of the proposal must be submitted.

8.4 All queries or questions on the TORs should be e-mailed to the National Project Coordinator Mr. John Calixte at the e-mail address: jcalixtejr28@gmail.com and the Project Administrative Assistant Ms. Rochelle Alcee at e-mail address: ralcee.sde@gmail.com, by June 10, 2022, at 4:00 pm.

8.5 The Lead Consultant will be allowed to work with a team of consultants/experts whose CVs must be included in the tender dossier being submitted.

8.6 The successful consultant will be required to submit a certificate of registration for the company and the most recent annual financial report.