CSIDS-SOILCARE Phase1: Caribbean Small Island Developing States (SIDS) multicountry soil management initiative for Integrated Landscape Restoration and climate-resilient food systems

Part I: Project Information

GEF ID
10195

Project Type
FSP

Type of Trust Fund
MTF

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
CSIDS-SOILCARE Phase1: Caribbean Small Island Developing States (SIDS) multicountry soil management initiative for Integrated Landscape Restoration and climate-resilient food systems

Countries
Regional, Antigua and Barbuda, Belize, Grenada, Guyana, Haiti, Jamaica, St. Lucia, Barbados

Agency(ies)
FAO

Other Executing Partner(s)
Partnership Initiative For Sustainable Land Management (PISLM) in Caribbean Small Island Developing States (SIDS)

Executing Partner Type
Others

GEF Focal Area
Multi Focal Area

Taxonomy

Climate Change, Climate Change Adaptation, Focal Areas, Land Degradation, Influencing models, Private Sector, Communications, Stakeholders, Civil Society, Type of Engagement, Gender Mainstreaming, Gender Equality, Gender results areas, Knowledge Generation, Capacity, Knowledge and Research, Knowledge Exchange, Small Island Developing States, Mainstreaming adaptation, Climate resilience, Ecosystem-based Adaptation, Sustainable Land Management, Income Generating Activities, Restoration and Rehabilitation of Degraded Lands, Sustainable Livelihoods, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Awareness Raising, Behavior change, Indigenous Peoples, Beneficiaries, Academia, Community Based Organization, Individuals/Entrepreneurs, Partnership, Participation, Local Communities, Gender-sensitive indicators, Capacity Development, Knowledge Generation and Exchange, Training, South-South, Field Visit, Peer-to-Peer

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 1

Climate Change Adaptation

Climate Change Adaptation 2

Submission Date

12/11/2020

Expected Implementation Start

3/1/2021

Expected Completion Date

2/28/2025

Duration

48In Months

Agency Fee($)

774,744.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
LD-1-1		GET	2,039,550.00	7,484,169.00
LD-1-4		GET	3,064,355.00	9,978,893.00
LD-2-5		GET	2,168,058.00	4,157,871.00
CCA-2		SCCF-A	883,242.00	4,176,883.00
		Total Project Cost($)	**8,155,205.00**	**25,797,816.00**

B. Project description summary

Project Objective

To Strengthen Caribbean SIDS with the necessary tools for adopting policies, measures and best practices and support review of legal and institutional frameworks to achieve Land Degradation Neutrality LDN and Climate Resilience

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
1. Update and Strengthen national and regional soils information, technical capacity and coordination as a Basis for Improved Decision Making Including on Sustainable Soil Management (SSM) and Sustainable Land Management (SLM)	Technical Assistance	1.1. Caribbean countries use soil data to make informed decisions and contribute to regional and global soil and climate knowledge systems Indicator(s): -Increased national and regional capacities for soil analysis through the establishment of the Caribbean Soil Laboratory Network (CARLAN) -Caribbean Soil Information System (CARSIS) for monitoring soil health located at a central repository and managed by the Caribbean Soil Support Group	Output 1.1.1: Caribbean Soil Support Group for SSM/SLM established and collaborating, with the Latin American and Caribbean Soil Partnership (ASLAC)] Output 1.1.2. National soil data including soil organic carbon reviewed and updated supported by integrated field sampling, laboratory analysis and remote sensing in support of local, national and regional planning and international reporting Output 1.1.3. Caribbean Soil Laboratory Network (CARLAN) established based on the strengthening of national soil	GET	1,800,000.00	5,004,941.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
2: Addressing the Drivers of Land Degradation Through the Rehabilitation of Land and Soil Degraded Areas and the Promotion of Integrated Landscape Management and Restoration and the Identification and Implementation of Livelihood Alternatives for Communities.	Investment	2.1. Land and Soil Degraded Areas in Haiti, Guyana, St. Lucia; Grenada and Barbados are rehabilitated, ecosystem services restored and sustainable livelihoods built Indicator(s): -Number of hectares of degraded lands rehabilitated and ecosystem services restored, with a target of 15,000 ha -Greenhouse gas emissions avoided/captured from rehabilitation and restoration activities, with a target of 5 million tons CO2-eq	Output 2.1.1 Participatory strategies for rehabilitation and restoration and Intervention plans available and implemented based on the hot and bright spots identified in the land degradation assessment.. Output 2.1.2. Community Propagation Centres established and/or upgraded to Facilitate the Provision of Plant Materials and Soil Amendments Output 2.1.3. Integrated Landscape Management (ILM), including analog forest and agroforestry systems implemented in target areas in five participating States.	GET	1,065,205.00	3,679,137.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
3: Resilience Building to land degradation, Natural Disasters and Climate Change through Climate Smart Agriculture and Enhanced Drought Risk Management	Investment	3.1. Soil productivity restored through Climate Smart Agriculture, Model Farms established on selected landscapes in Guyana, St. Lucia, Haiti and Grenada, Barbados and applied regionally. Indicator(s): -Number of ha of arable lands that have adopted SSM/SLM and climate resilient measures, with a target of 20,000 -Greenhouse gas emissions avoided/captured from climate smart farms, with a target of 0.4 million ton CO2-eq	Output 3.1.1: Climate Change Implications Assessed and Validated at the farm and landscape levels and the Results used and promoted to support climate resilient and viable/ productive farming systems and value chain integration at the regional level. Output 3.1.2: Climate Resilience Measures Integrated into Model Farms and the Information Gathered Use to Form the Basis of the Regional Guidelines which will Guide Farmers in Transitioning to Climate Smart Agriculture Production at the Regional Level .	GET	1,286,921.00	3,758,374.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
3: Resilience Building to land degradation, Natural Disasters and Climate Change through Climate Smart Agriculture and Enhanced Drought Risk Management	Investment	3.1. Soil productivity restored through Climate Smart Agriculture, Model Farms established on selected landscapes in Guyana, St. Lucia, Haiti and Grenada, Barbados Indicator(s): -No of climate resilient agricultural practices and technologies applied across the region, with a target of 10 -Number of legal agreements established to scale out CSA, with a target of at least one per country	Output 3.1.1: : Climate Change Implications Assessed and Validated at the farm and landscape levels and the Results used and promoted to support climate resilient and viable/ productive farming systems and value chain integration at the regional level. Output 3.1.2: Climate Resilience Measures Integrated into Model Farms and the Information Gathered Use to Form the Basis of the Regional Guidelines which will Guide Farmers in Transitioning to Climate Smart Agriculture Production at the Regional Level .	SCCF-A	243,579.00	1,409,391.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
4: Enhancement of Food Systems and Alternative Livelihoods through the promotion of innovations in agriculture and livestock production systems and Mobilisation of the Private Sector in Support of LDN Special Climate Change Fund (SCCF)	Investment	4.1. Food production systems and alternative livelihood options implemented with innovative technologies and private sector support are more resilient and adapted to climate change in Belize, St. Lucia, Carricou-Grenada, Jamaica and Barbados Indicator(s): -Number of hectares where adapted food production systems and alternative livelihood options are implemented, with a target of 20,000 -Improvement in on-farm productivity with respect to crops and livestock -Percent increase in Annual household income from agricultural activity for project beneficiaries	Output 4.1.1. Land use, food and livelihood systems assessed as a basis for identifying alternative options and innovations and setting a baseline for monitoring, as a basis for developing Resilient Food Production Systems and Alternative Livelihood Options Output 4.1.2: Financial Options for Enhancing SSM and SLM Including Opportunities for Private Sector Collaboration and Potential Financing Identified at the national level Output 4.1.3. Promotion of Innovation in Agricultural Systems at the national level, considering a gender	GET	992,235.00	2,813,121.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
4: Enhancement of Food Systems and Alternative Livelihoods through the promotion of innovations in agriculture and livestock production systems and Mobilisation of the Private Sector in Support of LDN Special Climate Change Fund (SCCF)	Technical Assistance	4.1. Food production systems and alternative livelihood options implemented with innovative technologies and private sector support are more resilient and adapted to climate change in Belize, St. Lucia, Carricou-Grenada, Jamaica and Barbados Indicator(s): -Number of technologies demonstrated and tested with high adaptation potential, with a target of 10 -Improvement in on-farm productivity with respect to crops and livestock	Output 4.1.1. Opportunities to upscale targeted value chains (eg. livestock production systems) at the regional level identified and reflection in a regional Report and Action Plan Output 4.1.2: Financial Options for Enhancing SSM and SLM Including Opportunities for Private Sector Collaboration and Potential Financing Identified at the regional level. Output 4.1.3. Promotion of Innovation in Agricultural Systems at the regional, considering a gender approach	SCCF-A	308,265.00	1,237,774.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
5: Mainstreaming SLM and Sustainable Soil Management (SSM), Strengthening Knowledge Management, Enhanced Training and Capacity Development, the Building of Financial Capability to Implement SLM, the Regional LDN Strategy and Monitoring and Evaluation	Technical Assistance	Outcome 5.1 Regional institutional capacity development and training programme established Indicator (s) -Percent persons trained in SSM, SLM and CMA methods and techniques from the participating countries that contribute to the development of components 1 to 4, disaggregated by gender	Output 5.1.1. Capacity Development of Stakeholders Strengthened to (i) undertake national soils surveys, (ii) apply climate resilient methods and approaches (iii) apply Risk Assessment and CC adaptation best practices for Agriculture	GET	1,609,584.00	3,686,325.00
		Outcome 5.2. Knowledge Management, Technical Assistance and Communication in SLM and SSM strengthened and enhanced Indicator(s) -Knowledge products/materials produced and disseminated to stakeholders in the region. -Social Learning Platform being used to network, share, collaborate and exchange ideas to solve problems. -Indigenous Peoples Network established and used by	Output 5.2.1. National chapters of the Caribbean LDN and SLM Knowledge Hub established Output 5.2.2. Regional Cooperation in SLM and SSM Encouraged and Facilitated (building on			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
Component 5: Mainstreaming SLM and Sustainable Soil Management (SSM), Strengthening Knowledge Management, Enhanced Training and Capacity Development, the Building of Financial Capability to Implement SLM, the Regional LDN Strategy and Monitoring and Evaluation	Technical Assistance	Outcome 5.1 Regional institutional capacity development and training programme established Indicator (s) -Percent persons trained in SSM, SLM and CMA methods and techniques from the participating countries that contribute to the development of components 1 to 4, disaggregated by gender	Output 5.1.1. Capacity Development of Stakeholders Strengthened to (i) undertake national soils surveys, (ii) apply climate resilient methods and approaches (iii) apply Risk Assessment and CC adaptation best practices for Agriculture	SCCF-A	262,416.00	764,279.00
		Outcome 5.2. Knowledge Management, Technical Assistance and Communication in SLM and SSM strengthened and enhanced Indicator(s) -Knowledge products/materials produced and disseminated to stakeholders in the region. -Social Learning Platform being used to network, share, collaborate and exchange ideas to solve problems. -Indigenous Peoples Network established and used by	Output 5.2.1. National chapters of the Caribbean LDN and SLM Knowledge Hub established Output 5.2.2. Regional Cooperation in SLM and SSM Encouraged and Facilitated (building on			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
				Sub Total ($)	7,568,205.00	22,353,342.00
Project Management Cost (PMC)						
				GET	518,018.00	2,679,035.00
				SCCF-A	68,982.00	765,439.00
				Sub Total($)	**587,000.00**	**3,444,474.00**
				Total Project Cost($)	**8,155,205.00**	**25,797,816.00**

Please provide justification

The proposed project is complex from an operational point of view as it includes activities in at least 15 project sites in 8 countries throughout the Caribbean. This will require significant time and effort to ensure that project activities are properly coordinated from a regional point of view, but at the same time, that they respond adequately to the needs of countries and local stakeholders. The proposed PMC budget exceeds the standard 5% as it includes a full-time project team, audits, as well as equipment and office facilities to ensure that local teams have the tools to carry out their job in a timely manner. Each of this is discussed below: The PMC includes a full-time team in Guyana consisting of a Project Manager, Procurement Officer and an Office Assistant. Estimated costs are $360k for a 4-year project. The Project Manager will be a senior person who will have the responsibility to ensure project delivery in a timely fashion. The proposed salary is in line with international standards. Given that PISLM will executed the project, FAO requires the implementation of annual audits. Estimated costs for 4 years of audits are $28,000. Finally, the nature of the project requires that a liaison office be established in Trinidad to facilitate project execution. The SOILCARE project will support the rental of office premises for the liaison office?please note that PISLM will provide office space (co-financing) for the Team located in Guyana, but the liaison office in Trinidad will need to be covered by the GEF project. In addition, office supplies (including computers and printers) will be required for both project offices as well as for the national technical assistants that will be located in government offices in each country. New equipment is required as the project will collect significant amounts of data to support land use planning processes. It is important that technology does not hinder project implementation. For the above reasons, the project team kindly requests the GEF Secretariat to consider authorizing a PMC for an amount higher than 5%.

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Antigua y Barbuda - Min. Environment	In-kind	Recurrent expenditures	800,000.00
Recipient Country Government	Barbados	In-kind	Recurrent expenditures	722,600.00
Recipient Country Government	Belize	In-kind	Recurrent expenditures	442,600.00
Recipient Country Government	Grenada - Min. Agriculture, Lands and Forestry	In-kind	Recurrent expenditures	5,000,000.00
Recipient Country Government	Guyana - Lands and Survey Commission	In-kind	Recurrent expenditures	2,968,204.00
Recipient Country Government	Haiti - Min. Environment	In-kind	Recurrent expenditures	6,100,000.00
Recipient Country Government	Jamaica - Ministry of Agriculture	In-kind	Recurrent expenditures	800,000.00
Recipient Country Government	St. Lucia - Dept of Agriculture	In-kind	Recurrent expenditures	787,100.00
Recipient Country Government	St. Lucia - Dept of Agriculture	Grant	Investment mobilized	200,000.00
Other	University of West Indies	In-kind	Recurrent expenditures	4,520,000.00
Other	PISLM	In-kind	Recurrent expenditures	1,500,000.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
GEF Agency	FAO	In-kind	Recurrent expenditures	1,657,312.00
GEF Agency	FAO - Global Soil Partnership	Grant	Investment mobilized	300,000.00
			Total Co-Financing($)	**25,797,816.00**

Describe how any "Investment Mobilized" was identified

Investment mobilized includes: -FAO investment mobilized includes resources from the Global Soil Partnership Previously, Includes funds from the National Land Degradation Neutrality Target Setting Programme Transformative Projects and the World Bank-funded Pilot Program for Climate Resilience-Haiti_ Includes funds mobilized under the Wilt Hunger Hilfe ($2.1m) and work financed by the US Agency for International Development (USAid) valued at $3m_-St. Lucia: Includes funds mobilized under the Disaster Vulnerability Reduction Programme (DVRP)

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
FAO	GET	Antigua and Barbuda	Land Degradation	LD STAR Allocation	402,785	38,264
FAO	GET	Belize	Land Degradation	LD STAR Allocation	893,242	84,858
FAO	GET	Grenada	Land Degradation	LD STAR Allocation	893,242	84,858
FAO	GET	Guyana	Land Degradation	LD STAR Allocation	880,457	83,643
FAO	GET	Haiti	Land Degradation	LD STAR Allocation	893,242	84,858
FAO	GET	Jamaica	Land Degradation	LD STAR Allocation	893,242	84,858
FAO	GET	St. Lucia	Land Degradation	LD STAR Allocation	893,242	84,858
FAO	GET	Regional	Land Degradation	LD Global/Regional Set-Aside	883,242	83,908
FAO	SCCF-A	Regional	Climate Change	NA	883,242	83,908
FAO	GET	Barbados	Land Degradation	LD STAR Allocation	639,269	60,731
				Total Grant Resources($)	**8,155,205.00**	**774,744.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **false**

PPG Amount ($)

200,000

PPG Agency Fee ($)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
FAO	GET	Antigua and Barbuda	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Belize	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Grenada	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Guyana	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Haiti	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Jamaica	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	St. Lucia	Land Degradation	LD STAR Allocation	20,000	1,900
FAO	GET	Regional	Land Degradation	LD Global/Regional Set-Aside	30,000	2,850

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
FAO	SCCF-A	Regional	Climate Change	NA	30,000	2,850
				Total Project Costs($)	**200,000.00**	**19,000.00**

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
37000.00	29000.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20,000.00	20,000.00		

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
17,000.00	9,000.00		

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00			

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
43000.00	26000.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20,000.00	6,000.00		

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
23,000.00	20,000.00		

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	5801489	5412443	0	0
Expected metric tons of CO?e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	5801489	5,412,443		

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting	2021	2021		
Duration of accounting	20	20		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)				
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	2,000	2,400		
Male	3,000	3,500		
Total	5000	5900	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

National sites were selected based on the work under the LDN-TSP. The project will contribute to the Core Indicators : ? 15,000 hectares of degraded lands rehabilitated and ecosystem services restored in Barbados (2,000 ha), Grenada (2,000 ha), Guyana (4,000 ha), Haiti (5,000 ha) and St. Lucia (2,000 ha). This includes 9,000 ha of forest lands restored (Core Indicator 3.2) and 6,000 ha under improved management to benefit biodiversity (Core Indicator 4.1). ? 20,000 hectares of agricultural lands converted into Climate Smart Model Farms in Barbados, Grenada, Guyana, Haiti and St. Lucia (Core Indicator 3.1). ? 20,000 ha Food Production Systems established creating Alternative Livelihood Options in Barbados, Belize, Grenada, Jamaica and St. Lucia (Core Indicator 4.3). ? Avoidance/capture of an estimated 5.4 million tonnes of CO2-eq over a period of 20 years ? 5,900 direct beneficiaries (2400 women). Project beneficiaries include 1000 individuals that will be trained on CC adaptation best practices for agriculture (Outcome 5.2) accounted for in the SCCF Tracking Tool There has been a reduction in the target areas since the PIF was developed, from 80,000 ha to 55,000 ha. The assessment during the project preparation phase showed that the preliminary target during project concept (PIF) was over estimated. The new target (55,000 ha) is more realistic given the level of resources, and the renewed commitment of project stakeholders in the context of COVID-19. Project targets have been adjusted as follows: Core indicator PIF PRODOC 3.1 20,000 20,000 3.2 17,000 9,000 4.1 20,000 6,000 4.3 23,000 20,000

Part II. Project Justification

1a. Project Description

Describe any changes in alignment of the project with the original PIF

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1. A major development since the approval of the PIF is that the Latin America and the Caribbean Soil Partnership (ASLAC) was restructured, in June 2019, creating three sub-regional entities?the South America group of countries, the Mesoamerica, Mexico and Caribbean Spanish + Haiti speaking group of countries and the English-speaking Caribbean group. With the creation of the ASLAC?Caribbean Group, the PISLM ?the Executing Agency for the SOILCARE Phase 1 Project?has been recognized by the Latin American and Caribbean Soil Partnership (ASLAC) as a supporting agency for the Latin American and Caribbean Soil Partnership (ASLAC) for the Caribbean. As an integral part of SOILCARE Phase 1, a Caribbean Soil Support Group for SSM/SLM has been established which will collaborate, with the Latin American and Caribbean Soil Partnership (ASLAC)), as a means of updating and strengthening national and regional soils information, technical capacity and coordination as a basis for improved decision making including on SSM and SLM. Resources have been allocated through SOILCARE to operationalise the Caribbean Soil Support Group for SSM/SLM, given the central role it will play in the delivery of Component 1 of the SOILCARE.

2. Another significant change in the PIF after its approval was the decision by Barbados to officially participate in the project; hence information on Barbados is included in the Project Document. Based on the recommendations on the PIF and a number of specific directives provided by the participating Member States some of the Outcomes and Outputs were adjusted, accordingly. For example, the participating Member States insisted that Component 1 addresses only the issue of the ?Upgrading of Soil Information and Data as a Basis of Strengthening LDN and SLM Processes? and the Outputs necessary for accomplishing that purpose. Hence Outcome 1.2 ?Sustainable and Climate Resilient Soil/Land Management Mainstreamed in National Policies and Regional Policy Frameworks and Decision Making Processes and Regional Cooperation Mechanisms to meet SLM, LDN targets and to contribute to Food Security, Environmental and Sustainable Development Agenda? and Outcome 1.3. ?Caribbean Countries have established a LDN Transformation Funding mechanism and mobilize resources for SSM/SLM? were both incorporated into Component 5, which to the participating Member States, were deemed to be more appropriately placed. In Component 3, adjustments were made in the text to place more emphasis on climate resilience, consistent with the investment made by the SCCF funds.

3. In addition, based on the comments and suggestions made on the PIF the Outputs under this Component were streamlined. A new Output: Output 4.1.3 ?Promotion of Innovation in Agriculture Systems? was included as the specific directive of the GEF?s reviewers. The core of this Output is the establishment of a PISLM/SOILCARE Regional Research, Advisory and Capacity Building Facility on New Adaptation Technologies. Additionally, the overall theme of Component 5 was changed to place the focus on Mainstreaming. Component 5 now addresses ?Mainstreaming SLM and Sustainable Soil Management, Strengthening Knowledge Management, Enhanced Training and capacity development, the Building of Financial Capability to Implement SLM, the Regional LDN Strategy and Monitoring and Evaluation.?

4. The most significant change to this Component relates to how training is presented, namely; all of the training activities under this project is now consolidated under Output 5.1.? Regional Institutional Capacity and Training Programme Established.? This decision to consolidate as previously described resulted from a direct directive from Ministers comprising the Partnership Initiative on Sustainable Land Management (PISLM) for Caribbean SIDS High Level Ministerial Body (PISLM/HLMB). The Ministers at a PISLM/HLMB meeting held in Guyana in October 2018, expressed strong concerns that capacity building and training provided in many GEF projects were too defused and difficult for policy makers to meaningfully track and evaluate the impact and contributions being made. As a consequence, the participating Member States agreed unanimously that all the training and capacity building elements of the SOILCARE Phase 1 be consolidated in Component 5, with clear evaluation criteria thus enabling policy makers to clearly track and evaluate the progress being made with respect to implementation. This approach is also supported by the Scientific and Technical Advisory Panel (STAP) to the Global Environment Facility (GEF) in its comments on the PIF, that ?*Beyond the comprehensive LDN Knowledge Hub, the rest of KM activities seem somewhat fragmented and include various forms of transferring knowledge [?] regional cooperation mechanism and consultative platforms.?* Based on the STAP comments, an attempt has been made during the elaboration of the Project Document to consolidate many of the Knowledge Management (KM) activities.

A1a. Project Description.

Briefly describe: the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description); 2) the baseline scenario and any associated baseline projects, 3) the proposed alternative scenario with a brief description of expected outcomes and components of the project; 4) alignment with GEF focal area and/or Impact Program strategies; 5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 7) innovation, sustainability and potential for scaling up

(1) Global environmental and/or adaptation problems, root causes and barriers

5. Small Island Developing States (SIDS), are a special case both for environment and development (Agenda 21, 17G). They are ecologically fragile and vulnerable. All of the participating countries?Antigua and Barbuda, Barbados, Belize, Grenada, Guyana, Haiti, Jamaica and Saint Lucia?in this project are so classified. The small island states together with Guyana and Belize (mainland states) all have similar characteristics and are affected by similar environmental, natural resources and development issues. All the participating countries have ratified the UNCCD and are committed to achieving SDG 15.3: ?combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation-neutral world? by 2030 and the SDG target for achieving this Goal. The participating countries are also members of the Caribbean Community and are Party to the *Revised Treaty of Chaguaramas Establishing the Caribbean Community Including the CARICOM Single Market and Economy (CSME*) (RT) in its

original jurisdiction?the legally binding regional instrument of the Caribbean Community. Decisions made within the framework once adopted by the principle Organ of the Community?the Conference of the Heads of Government?are operative in all Parties, unless otherwise stated. It is therefore against this backdrop that the Partnership Initiative on Sustainable Land Management (PISLM) for Caribbean SIDS High Level Ministerial Body (PISLM/HLMB) decided to approach the implementation of SDG 15.3. on a multi-country basis, with the anticipation that all the Member States of the Caribbean Community will eventually join the project and allocate the necessary resources from their respective countries GEF-7 STAR allocation, to undertaking both a set of regional and specific action(s) at the national level.

Commitment to Achieving LDN: Mitigating National and Regional Barriers

6. Committed to honouring their obligations under the UNCCD Convention, the participating countries endorse the vehicle?Land Degradation Neutrality (LDN)?agreed to by the international community at the UNCCD COP 12 in Ankara, Turkey, 12 ? 23 October, 2015, for contributing to the achievement of SDG 15.3. Defined by the Parties to the Convention as?A state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remain stable or increase within specified temporal and spatial scales and ecosystems?the implementation of this concept, is of particular significance to the region, in that will assist communities, businesses, and governments to reconcile the need for the intensification of food production in a sustainable manner, without degrading land resources. Commitment to implementing LDN in the participating countries and at a regional level implies addressing the existing barriers, which include, *inter alia*; the lack of dated information on soil resources; inability to locate accurate information on soils, much of the information available is fragmented and not easily accessible; limited technical capacity in soils and a lack of supporting legal and institutional structures.

7. The lack of updated information on soil resources is indeed a significant barrier since the commitment to contribute to the achievement of SDG Target 15.3 (which specifically addresses soil/land degradation along with the LDN approach) requires a recognition of the importance of soil resources, reliable soil information and an integrated strategy and mechanisms to ensure sustainable soil/land use management. Comprehensive available soil data for the Caribbean is restricted to the 1950-70s soil surveys, with only a few countries having digitized or updated this information using georeferenced samples, and as such, that supporting analytical data cannot be readily used. The representativeness of the analytical data supporting geospatial distribution of soils is also outdated rendering it practically unusable. This has emerged as a significant limitation to national planning processes as well as international commitments to conventions and agreements. Soil organic C is an indicator of soil quality, land quality and climate change for the Global Soil Partnership (GSP) and UNCCD and UNFCC processes respectively. Activities involving soil C mapping in the Caribbean that were organized by the GSP in 2017-18 to prepare a first global soil carbon map with country inputs resorted to a large extent on the use of global datasets and modeling to categorize these SIDS due to lack of accessible data. Similarly, the LDN-TSP process also relied on Tier 1 global data to establish baseline changes in SOC, which does not in most cases present a true picture of the actual situation in the region. The methodologies include both total SOC and SOC sequestration potential which are required for country analysis and mapping and for the definition of NDCs in the countries and provide a more accurate picture for LDN assessment and monitoring.

8. Although a significant amount of research and development has been conducted on soils of the Caribbean, a significant amount of it has been project driven, resulting in fragmentation and low accessibility. Participating countries are limited in their capacity to manage a transformation from

degrading land use systems to sustainable soil and land management at scale, by the absence of a guiding soil policy. Soils must be viewed as a universal resource and therefore should be protected, conserved and sustainably managed for the benefit of all. Under such a scenario, a supporting policy framework as well as monitoring and evaluation tools are required by each country as a basis for LDN implementation. Furthermore, institutional technical capacity is very limited; most of the participating countries do not have a qualified soil scientist/ physical land management expert within the public service, which limits national programme development.

9. The issue is however, that in order for the participating countries to successfully formulate LDN strategies to prevent and reduce degradation and restore degraded lands, there is a necessity for them to pay more attention to the analysis and management of their soil resources, including*, inter alia*, a better understanding of the overall soil quality**,** namely Soil organic carbon as well as land productivity which points to long-term changes in the health and productive capacity of the land. This is necessary since a commitment to LDN provides a basis for these countries to re-focus attention on the need to take effective measures for the management of their natural resources, in particular, land and land resources, in support of the transformation, resilience building and sustainable development of the agricultural sector, as a means of strengthening the region?s food systems; which is in effect, the central objective of the Caribbean Community Natural Resources Management Policy (Article 12 of the Revised Treaty of Chaguaramas). The successful implementation of a LDN Strategy for Caribbean SIDS, including a Soils Policy will also contribute to one of the goals of the Caribbean Community Agricultural Policy, namely improved income and employment opportunities, food and nutrition security and poverty alleviation as articulated in the Community (Article 56 (b) of the Revised Treaty of Chaguaramas) and its manifestation?the Jagdeo Initiative ?which aims to catalyse the operationalisation of the Regional Transformation Programme for Agriculture (RTP).

10. With the onset of climate change, a new paradigm focused on resilience has emerged. In this regard, attention is directed at national resilience indicators including soil attributes (e.g. soil organic carbon -SOC) and mitigation and adaptation strategies focusing on improved soil and land management to enhance capacity to cope with the effects of climate change and reduce emissions.

11. In addition to contributing to the achievement of SDG 15.3, and more specifically to Land Degradation Neutrality (LDN), the project addresses the drivers of land degradation and barriers to SLM, including, *inter alia,* overexploitation of forest resources and expansion of agriculture in accessible areas; improper use of fertilizers and other agro-chemicals; and inadequate soil and water management at a scale for sustaining soil functions and related ecosystem services; unsustainable forestry and agricultural systems, including logging, cropping and livestock management practices, as well as mining, and settlement expansion. These causes are further exacerbated by the adverse impacts of climate change including re-occurring drought, intense rains and storms which have further affected the reliability of agriculture and increased the risk of natural disasters. The project also addresses the gaps in knowledge of individual Member States, in particular, the paucity of data on soils and soil carbon content and their management and mechanisms to make that information more readily accessible to policy makers and resources users alike. Such information forms an integral input to the LDN Strategy for Caribbean SIDS and is critical, in assisting the participating countries in transitioning their agriculture sectors to embrace Climate Smart Agricultural principles in order to adapt to the changing climate, as well as in the development of sustainable supply chains with regard to production, processing, and marketing. A positive manifestation of the successful implementation of a LDN Strategy for Caribbean SIDS could be an increase in food production in the Caribbean in order to reduce the region?s multimillion-dollar import bill, as well as decreasing poverty and improving nutrition for the local population; a viewpoint shared by the Director General of the Organisation of Eastern Caribbean States (OECS).

Land degradation: An Ongoing Phenomenon in the Participating Countries

12. Land degradation; though an ongoing phenomenon in each of the participating countries, its scope and extent vary, from country to country and within each country, notwithstanding the similarities in the main causes. At one end of the spectrum, is Haiti, which has 27,750 square kilometers of land area including four large offshore islands: La Gonave (680 Km2); La Tortue (180 Km2); Ile ? Vache (52 Km2) and Ile Cayemite (45 Km2) and an estimated population of some 11,375,024 inhabitants in mid-2020. A significant amount of lands in Haiti (approximately 63%) have slopes greater than 20%, whereas only 29% have slopes of less than 10%. Approximately, 97% of Haiti?s forests have been cleared for wood or charcoal, resulting in accelerated runoff and associated erosion of fertile topsoil and biodiversity loss. Approximately, 4200 ha of soil is estimated to be eroded per year and at least 6% of the land is considered to be irreversibly eroded. Less than 20% of the land under cultivation is appropriate for agriculture while most of the cultivated areas are very small parcels. A main driver of degradation in Haiti is the population pressure on limited resources with an average of 415 people per square kilometer, which ranks 17th in the world.

13. At the other end of the spectrum are countries such as Guyana and Belize which are low-lying continental countries, situated at or below sea-level which still have a significant amount of their land area under forest cover, but which are under continuing threat from land degradation. In the case of Guyana, FAO estimates that of a total land area of just over 21 million hectares, 71% is comprised of forest and another 17% of ?other wooded land,? thus representing one of the highest proportions of forest cover of any country in the world (FAO, 2010, Global Forest Resource Assessment). Though historically Guyana has had a relatively low rate of deforestation, it is still taking place, albeit at a slow rate. Between 2009-2010 deforestation rates in Guyana were 0.06%, rising from 0.02% per annum between 2005 and 2009 (Guyana Forest Commission, 2012), and at an estimated rate of 0.054% between 2010 and 2011 (Global Mechanism of the UNCCD, Land Degradation Neutrality Report). The majority of deforestation between 2009 and 2011 has been attributed to increased mining activity accounting for 91-93% of the deforestation in the period 2009-2011. In addition, the number of persons living on degraded land are also on the increase in particular in the coastal plain where 90% of the population is concentrated (total population estimated at 786,552 in mid-2020). In Guyana, 12 thousand people were living on degrading agricultural land in 2010 - an increase of 1% in a decade, bringing the share of rural residents who inhabit degraded agricultural land up to 2 % of the total rural population. During the same time period (2000-2010), the amount of people residing in remote degrading agricultural areas with limited market access increased by 1 %, reaching 10 thousand people (Global Mechanism of the UNCCD, Land Degradation Neutrality Report).

14. Situated on the Caribbean coast of the Central American peninsula with Mexico and Guatemala bordering on the landward side to the north, west and south, respectively, **Belize** has a land area of 22,960 km2 (8,867 square miles), comprising of the mainland which constitute 95% of the total land area and the remaining 5 % distributed among more than 1,060 islands. Belize has an estimated population of 397,628 in mid-2020. Land degradation is a serious environmental issue in Belize. The country has lost more than 770,000 acres of forest since 1980 with an average deforestation rate of 0.6% per year. In the period 1980 ? 2010 and between 2010 and 2012 increased to close to 1% per year (CATHALAC and University of Belize Environmental Research Institute, 2012). There is a direct risk of erosion, soil structure deterioration, soil fertility loss, hydrological impacts, as well as loss of biodiversity and forest resources, from deforestation and other land cover conversions. The main causes of degradation include, inter alia, farming on land classified as marginal or unsuitable for agricultural activity which is estimated to be about a third of the 1 million acres of agricultural land, most of which more than 33% is on acidic soils particularly sensitive to land degradation; almost 10% is on steep slopes prone to erosion ? mainly in central Belize (e.g. along Hummingbird Highway); with 4% is located in areas at extreme risk of erosion and leaching of nutrients during intense rainfall events.

Farming on marginal land is leading to increased use and dependency on mineral fertilizers for cropping, and increased risk of erosion through loss of vegetative cover on sloping crop and grazing land and associated sedimentation and flash floods downstream. Other causes of land degradation include; livestock over-grazing which leads to soil compaction; the growth of settlements on good agricultural soil resulting in agricultural activity being pushed into less suitable soils and steep or remote lands; logging and associated road construction; and surface mining which removes the fertile topsoil. Uncontrolled fire, coupled with drought and inappropriate framing practices are also significant contributors to land degradation in Belize. A third of Belize?s agricultural land is very drought-prone with 40% of agricultural lands in low-rainfall areas and almost two-thirds overlie limestone (i.e. prone to desiccation).

15. The next group of participating countries?**Antigua and Barbuda, Grenada and Saint Lucia**?are located in the Eastern Caribbean with estimated populations in 2019 of 97,118, 112,003 and 182,790 inhabitants respectively. In the case of Antigua, it occupies a total area of 69,120 acres delineated in more than 41,000 land parcels; 18 percent of which is considered suitable for agriculture (Williams, 2003). Of the total land ownership in Antigua, the Government of Antigua and Barbuda is the largest land owner with about 41 percent of the land; followed by private ownership with 32 percent of the land and 23 percent of the land unspecified. In the case of Barbuda, all the land is vested in the Crown on behalf of the people, in perpetuity. An important trend in Antigua and Barbuda with respect to land management is the changing land use. Whereas, prior to 1975 the most prevalent use of land was in agriculture and livestock grazing; between 1964 and 1985, land in agriculture has declined from 24,891 acres into 5,501 acres. Currently, most of the land is left fallow, leaving these open to threat from urban expansion and squatting. The major land management issues in Antigua and Barbuda are: unsustainable farming practices, poor watershed management, soil and sand mining, uncontrolled grazing by livestock, the competition for, and allocation of beach front land, particularly for tourism development and bush fires. In the case of bush and forest fires these are a major cause of ecosystem and species loss (CaribInvest (West Indies) Ltd, 2012).

16. A notable feature of Grenada?s land use is a large amount of unproductive land, (for example, in the form of abandoned cropland and shrub and grassland), which account for 20% and 5% of the total land area, respectively. On the second largest island, Carriacou, the climate is drier and almost 60% of the island is classified as shrub and grassland. Pasture and grazing account for almost 25% of land area, and forests only 5%. Agriculture in Grenada is carried out mainly on small-scale, family-run farms, many on untitled informally occupied land. The main land pressure on productive lands in Grenada is urban development, notwithstanding that population growth is virtually stagnant (103,300 persons and 33,800 households in 2011 Census). As a consequence of the collapse of the banana industry, croplands have declined, between 2000 and 2009 from 58% - 37% of the land area. Though restoration of some of the abandoned cropland have been brought back into productive use due to the Farm Labour Support Programme, there are still vast areas of abandoned and idle lands throughout the country.

17. The key types of land degradation in the two islands of Grenada and Carriacou as identified in the aligned NAP are soil erosion by water, acidification and pollution, loss of soil life, soil fertility decline, and pests and disease infestation. Soil erosion is mainly occurring in agricultural lands in the southwest of Grenada. The main causes of degradation are deforestation, overgrazing, inappropriate agricultural practices and climate variability. The use of synthetic fertilizers by smallholder farmers has been cited as a concern for the sustainable use of soil on the island. A major cause of soil degradation is acidification caused by the overuse of agricultural chemicals, such as herbicides used in land clearing, pesticides and mineral fertilizers which occurs mainly in cropland areas, affecting over 860 ha (Grenada Land Degradation Neutrality Report, 2015). Chemical degradation occurs mainly in parts of St. David?s, St. George?s, St. Mark?s and St. John?s parishes. Acidification is also related to loss of soil organic matter due to inadequate rotations and organic matter

management resulting in the loss of soil biodiversity and nutrients (also through leaching) and reduced carbon sequestration/increased CO_2 emissions. Inappropriate agricultural practices also include inappropriate agronomic methods, and irrigation and drainage practices and the cutting down of indigenous forest to facilitate the expansion of cinnamon and nutmeg cultivation.

18. These negative effects are exacerbated by climate change and variability, inter alia, increased frequency of extreme weather events, including intense seasonal and unseasonal rainfall and extended drought periods, and late season hurricanes/severe storms causing damage to the forest, riverbanks, water supply and road infrastructure. These contribute to excess runoff and soil erosion and land slippages in many areas with negative effects on the agricultural sector. This also results in reduced water retention in the soil and reduced streamflow and effects on water quality from high sediment load and pollution by agrochemicals used in modern agriculture. As a result, for as much as a mile seaward of the shoreline coastal waters are discoloured by sediment. These climate effects also impact on aquatic habitats and animal life. Eco-tourism is a more recent threat through clearing of footpaths for access to wildlife reserves resulting in erosion of friable volcanic soil and in severe cases gullying.

19. The effects of land degradation and drought on St. Lucia are characterized as being economic, social or environmental in nature and include: reduction in available water (irrigation, domestic) evidenced by the apparent progressive dwindling of the islands freshwater water resources (which are essentially derived from surface water); reduced soil and ecosystem productivity; sediment and erosion damage to productive and transportation infrastructure, reflected in increased levels of siltation of major drainage systems, and increased incidents of land slippage in areas of human settlement; and, loss of habitat and biodiversity, due to high sediment levels in coastal areas, with negative impact on coral reef systems.

20. A number of issues have been identified which contribute to mismanagement of Saint Lucia?s land resources, and ultimately, have led to land degradation and the occurrence of drought. Soil erosion and other degradation problems stem from land clearing inappropriate agricultural practices such as shifting cultivation and inadequate soil and water conservation practices and development (e.g. tourism and road construction). These are significantly degrading the prime agricultural lands in Saint Lucia and have negative consequences on the water system, both freshwater and coastal, due to increased sediment load and pesticides. These are in turn affecting the fisheries stock.

21. The drivers of unsustainable resource management practices include the disruption of social systems, the under-valuation of traditional knowledge, inadequate government policies and political will, weak institutions in terms of capacities and fragmented mandates, inadequate investments in sustainable land management increasing population pressure and poverty. Poverty and lack of access to land lead to squatting and farming on areas not suitable for agriculture with resulting degradation. In addition to the impact of hurricanes, St Lucia has also experienced marked changes in weather and climate patterns. The erratic weather pattern has led to prolonged drought situation and a state of emergency in 2009, particularly with respect to the access to drinking water and food insecurity.

22. The last group of participating countries in the project which are referred to as More Developed Countries in the context of the Caribbean Community, **are Jamaica and Barbados** with estimated populations in mid-2019 of 2,948,279 inhabitants in Jamaica and 287,025 inhabitants in Barbados. Land degradation is a serious environmental issue in both of these countries. In the case of **Jamaica**, some of the causes or contributors to land degradation, include, *inter alia*: deforestation; soil erosion by wind or water; weather/climate conditions; pollution; drought conditions; unsustainable

agricultural practices; bauxite mining and limestone quarrying; and the expansion of urban development. In the case of **Barbados** land degradation is influenced by both natural causes that are associated with natural phenomena and anthropogenic influences**.** The natural causes include, inter alia: constant flooding and rapid run-off which removes the rich top soil, prolonged drought which provokes erosion of rich topsoil by high winds; geology, where saline and shallow soils, are unable to support good growth and development; and site location, where soils and vegetation are constantly exposed to strong winds which also prevent active plant growth. Anthropogenic factors include, inter alia: deforestation particularly on poor soils, slopes and coastal areas; poor infiltration due to rapid run-off resulting from the presence of impermeable surfaces such as roads, buildings, car parks; poor drainage as a result of fewer suck wells, blocked wells and drains; and farming. In the case of livestock farming, over grazing is a major contributor to LD, and in the case of crop farming, improper land cultivation and cropping techniques also negatively influence LD.

The Impact of Disasters Including Climate Change: Implications for Land Management

23. Climate change and mainstreaming climate resilience is a national priority for all of the participating countries in SOILCARE. While these countries have not contributed significantly to causing global climate change, they are at the forefront with respect to the adverse impacts. According to Nurse[1][1] Based on Model Projections for SIDS Regions, observed changes in Caribbean, Indian Ocean and Pacific climate are consistent with global and hemispheric variations. Climate models suggest a consistent increase in surface air temperature for the SIDS Regions, over the next several decades. Observed and projected sea surface temperature increases in the main SIDS regions are also consistent with global trends. GCM model outputs and observational records suggest a consistent drying trend in the Caribbean as well as increase in tropical cyclone (hurricane) maximum wind intensity -at least 5 -10 % before the 2050s, is projected. In addition based on the University of the West Indies Climate Modelling, Extreme Temperature Change will result in the Eastern Caribbean, namely the number of Days with Tempreture withith Temp ??35?C.[2][2]

24. An important driver influencing land management decisions in these countries is the impact of extreme events, including those associated with global climate change. According to the United Nations Development Programme,[3][3] and based on the s the first comprehensive assessment of the consequences of projected Sea Level Rise (SLR) and storm surge leading to coastal inundation (+1m to +6m) for the people and economies of the 15 CARICOM nations; it is concluded that Caribbean will be affected more seriously by SLR than most areas of the world; SLR in the northern Caribbean may exceed the global average by up to 25%. In addition, the impacts of tropical storms and hurricanes on coastal areas, even at present intensity and frequency, will be compounded by SLR. The impacts of SLR will not be uniform among the CARICOM nations, with some projected to experience severe impacts from a 1 metre SLR. In nations where low lying-land is extensive and who are therefore more exposed to the impacts of SLR and storm surge, concerns are of damage to agriculture, industry and infrastructure as well as salt water penetration into the groundwater reservoirs. For nations with a more complex topography and characterized by steep sloped coasts fronted by only a narrow strip of low lying land, the main concerns are landslides, beach erosion and disruption to infrastructure that is concentrated in limited flat land areas. In both cases, damage to mangroves and seagrass beds is of concern, especially since these areas are of importance in coastal protection as well as fishery resources. In the case of most of the countries, the tourism industry is of particular concern, since it is preferentially located very close to the coastal, often in low-lying areas with highly erodible sandy beaches. These impacts and changes mean that much more needs to be done in terms of coastal

protection and in the planning of coastal development. Addressing climate and mainstreaming climate resilience in the project activities is therefore a priority for all the participating Member States. Climatic risks measures are therefore built into all the project activities in order to mitigate such risks.

25. With respect to hydro-meteorological disasters, these pose a moderate to high potential risk to project activities because of their potential increase in frequency and intensity. These hydro-meteorological disasters, include, *inter alia*, hurricanes, tropical storms and the consequential flooding issues. In terms of hurricanes, with the exception of Guyana (the most southernly situated participating country located on the non-exposed north-facing coast of the South American continent) all other participating countries in the project have a high probability of being affected annually by hurricanes and tropical storms. Haiti because of its location in the Caribbean Sea coupled with its fragile and denuded landscape makes it highly vulnerable to torrential rains. This was the case on May 23-24, 2004, where extensive flooding was experienced which, washed away entire villages resulting in a death toll of approximately 2,400 people (University of Fondwa, 2018) and forced tens of thousands of people to abandon their homes. In September of the same year (2004), Haiti again was affected by two hurricanes, Ivan and Jeanne, which caused significant damage. On October 3rd and 4th 2016, Haiti was struck by Hurricane Matthew, a Category 4 hurricane, the strongest storm to hit Haiti since 1964, which caused a catastrophic amount of damage to the country?s infrastructure and agricultural industry, while killing over 600 people (some estimates are over 1,000) and displacing tens of thousands and causing an estimated damage of US $1.9 billion. Between August and September of 2008, Haiti was repeatedly hit by a number of tropical storms and hurricanes?Fey, Gustav, Hanna, and Ike?each system compounding the damage left by the previous one. Hurricane Ike which impacted the western coastline of Haiti, causing heavy rains and flooding, killed approximately 800 people and caused an estimated property damage of US$8 billion, excluding the extensive agricultural damage experienced throughout the country.

26. Grenada has also experienced its share of impacts from hurricanes. The most devastating was Hurricane Ivan which affected the island as a Category 3 hurricane on September 7, 2004, causing extensive destruction estimated at approximately USD, $1.43 billion in damage, representing 200% of its GDP. Ivan damaged more than 14,000 homes and destroyed 30% of the houses, leaving about 18,000 people homeless as well as killing 39 persons. Other hurricanes and /or tropical systems which have affected Grenada since 1990, include Hurricane Omar, October 2008; Hurricane Emily, July 2005; Hurricane Keith and Tropical Storm Joyce, September 2000; Hurricane Lenny, November 1999; Hurricane George, September 1998, Tropical Depression Arthur, July 1990 and Hurricane Gustav, August 1990.

27. The potential impact of hurricanes in the Caribbean is probably best illustrated by Hurricane Irma which affected multiple countries in the region in October 2017, devastating Barbuda, severely affecting St. Martin/Sint Maarten, St. Barthemely and Anguilla, the Virgin Island and Puerto Rico. It is thus, not a farfetched scenario to assume that most of the countries of the region can be severely affected by hurricanes within one hurricane season. This prognosis underscores the need for countries in the Caribbean to build climate resilience and climate proofing into every dimension of their existence; in particular with respect to sustainable use of land resources, and resilience to the consequences of extreme weather events such as severe flooding, wind damage and periods drought. This project addresses these issues, particularly with respect to the promotion of Climate Smart Agriculture.

28. Regarding the issue of drought, the Caribbean region has also been particularly vulnerable to this hazard. Over the past several years, the region has experienced re-occurring periods of prolonged shortages in rainfall which have caused significant distress to populations and damage to the economy of several of the participating countries. According to the Food and Agriculture Organization

(FAO), the Caribbean accounts for seven of the world?s top 36 water-stressed countries of which Barbados is in the top ten. FAO defines countries like Barbados, Antigua and Barbuda, and St. Kitts and Nevis as water-scarce with less than 1000 m^3 freshwater resources per capita. With droughts becoming more frequent in the Caribbean, agriculture will be one of the sectors seriously impacted, since the majority of crop production is rainfed and livestock production dependent on rainfall for forage production and animal sustenance. This will indeed impact negatively on the livelihoods of farmers and socioeconomically on farming communities. The ongoing transformation of agricultural production from rainfed to the use of irrigation will in many instances increase demand and thus competition amongst agricultural, industrial and domestic users for this limited resource. The rural poor in particular are disproportionally affected by these issues due to difficulty to access water and also by the consequential higher agri-food prices.

29. The recent drought of 2015-2017 affected approximately 200,000 families (1 million people) in Haiti, especially in Sud-Est, Nord-Ouest and Artibonite regions. Expensive, desalinated water resources account for as much as 70 percent of drinking water in Antigua and Barbuda. Even in Guyana, a country renowned for its water resources, the damage from the 1997/1998 drought was estimated to be approximately US$ 29 million due to decreased outputs in the agricultural sector; rice production decreasing by 37 percent and sugar by 7 percent and 40 percent in the mining sector as result of the unavailability or limited sources of water. Drought like conditions were again experienced in Guyana from May 2009 to February 2010; from September 2012 to January 2013 and most recently from early 2015 into 2016. The possibility for disasters occurring places increasing strain on the limited national and regional technical and financial resources and the region?s ability to respond in an effective manner to the needs, resulting therefrom.

30. In the low-lying coastal states of Guyana and Belize, which lie on or below sea level the threat of widespread inundation of the coastal areas continues to be a concern. Historically, the coastal plains where most of Guyana?s population resides as well as the Rupununi Savannahs, in the interior, have been prone to flooding. In recent times, the coastal plains have been significantly affected by flooding. The flood of 2005 caused significant damage to property, infrastructure and the economy, particularly to agriculture, estimated at US$ 54.5 million (17.56 percent of GDP) (ECLAC, 2005 in Environmental Protection Agency, 2016). The total damage caused by the 2005 floods was estimated at US$ 445 million (Government of Guyana and UNEP, 2016). Again in 2015 flooding occurred affecting East Berbice-Corentyne (Region 6), Demerara-Mahaica (Region 4), including Georgetown and some areas of Mahaica-Berbice (Region 5). Though flooding of the magnitude of the 2005 and 2015 have not occurred since then, it must be noted that flooding resulted as the consequence of extreme rainfall events in 2006, 2008, 2010, 2011, 2014 and 2015.

31. The region is also affected by a range of other potential natural disasters, inter alia, volcanoes, and earthquakes.. In terms of volcanic eruptions, one is reminded of the eruption of La Soufriere in Saint Vincent in 1979, even though it is almost four decades ago, it is still an active volcano. More recently, the eruption on January 8, 2007, of the Soufriere Hills Volcano in Montserrat (not a participating country in the project) is a grim reminder of this eventuality. With respect to earthquakes, the earthquake of January 2010, the worst natural disasters to hit Haiti in generations, killing approximately 300,000 people.

32. Notwithstanding the negative impacts resulting from the COVID-19 pandemic?public health, employment concerns; the severe disruption of international supply chains and its impact on the distribution of food to net food importers such as the Caribbean and the almost demise of the tourism industry on which much of the Caribbean depends, etc. ? has certainly highlighted the need for the Region to place more attention to food security concerns. This has implications for productive landscapes, as more persons have recognized the importance of agriculture as an integral part of

addressing the Region?s food security concerns. This realization has contributed to an increased awareness, at the policy level, for renewed attention to be paid to agriculture. In addition, this project will play a key role in enabling the participating countries to build back better in post COVID-19 pandemic era through the creation of green jobs and securing more sustainable food security.

Summary of remaining barriers to Sustainable Land and Soil Management

33. The long-term solution envisioned under this project is to update the soils data of the participating countries, including information on soil carbon, both of which are lacking, but which are essential for individual countries and the regional, alike, to design the LDN Strategy and informed Soil Policies as well as for the climate agenda in the SIDS. In addition, soils information will strengthen the participating countries ability to carry out rehabilitation of land and soil degraded areas including integrated landscape management and restoration; to build resilience against natural disaster and climate change as well as to enhance food systems and alternative livelihoods. However, a number of barriers exist that constrain the individual participating countries and the region in general ability to implement these solutions, as described below:

? *Limited Soil Data and Soil Carbon Data and Information and Policy Fragmentation*: In most of the participating countries this is a major constraint which hinders LDN target setting and decision-making for sustainable, climate resilient land use, the assessment of soil carbon sequestration and CO2 mitigation (UNFCCC) as well as the Aichi targets (CBD) in relation to soil biodiversity. Knowledge of soil characteristics and properties (agricultural and engineering) are key inputs for assessing watershed behavior, land use suitability, erosion and landslide risk analysis, however, in most of the participating countries, soil information is seriously lacking and is hindering data to guide long and short-term development and investment decisions. In most of the participating countries comprehensive soil surveys were last conducted in the 1950?s and 1960?s. The situation is further exacerbated by the fragmentation which exists between government agencies?agriculture, forestry, mining, and the environment?whose mandated activities have direct and indirect impacts on land and soil use and its management.

The end result, more often than not, are conflicting and fragmented policies, programmes, actions on the ground. There is, therefore, a need for the development of a common strategic SLM vision and agenda across the various sectors such as agriculture, land survey and planning, water, forest, environment, health sectors as well as private sector investors and NGOs for sustaining soil resources and associated ecosystem services for future generations. In this regard, there is growing recognition that the synergetic implementation of the Rio Conventions?Desertification, Climate Change and Biological Diversity?is necessary for maximum and effective delivery of outputs, particularly with respect to their mainstreaming into the productive sectors, poverty reduction programmes and integrated food security and development strategies for rural and urban populations.

? *Insufficient trained human resources in key areas, such as Soil Scientists and Climate Smart Agriculture Tools and Methods to Implement Sustainable Agricultural Practices*: In terms of human resources, there is a paucity of practising soil scientists as well as being trained and/or working in soil science and management in the participating countries and the region as a whole. Yet soils are a critical resource for food, fodder and pasture and tree crops and forestry. Soil and water management expertise is critical in sustaining soil health and productivity through managing soil constraints and addressing climate change and variability, for coping with unreliable rainfall, drought and excess rainfall, sequestering carbon and reducing GHG emissions. There is also growing recognition that in the advent of changing climate, the need exists to equip resources users (e.g. farmers etc.) with tools and methods to enable the adoption of Climate Smart Agricultural practices?defined by FAO as agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals,? as well as to enhance the sustainable supply chain with regard to production, processing, and demand for key agricultural products produced by Climate Smart Agriculture.

? *Inadequate and lack of proactive planning to address changes in the international trading regime and its implications in the productive landscape*: This area remains extremely weak in the participating countries. The removal of preferential access by Caribbean SIDS to protected European markets over the past fifteen or so years has had significant economic and social impacts as well as on the scale and extent of the character of the productive landscape. This is particularly evident with productive lands which were once used for sugar and banana cultivation. These once productive lands are under threat from a number of sources including abandonment and land degradation, unplanned conversion into human settlement and lack of effective use and management.

? *Lack of sufficient integration of SLM issues practices and processes in the Caribbean Community Policy and decision Making Frameworks:* A major barrier confronting the participating countries is the lack of sufficient appreciation of the importance of SLM including soil management to national and regional development and their integration into national and in particular, Regional Policy (e.g. Draft Community Environment and Natural Policy Framework, Community Agricultural Policy etc.) and Decision making Organs (e.g. The Conference of the Heads of Government, Council on Trade and Economic Development (COTED) etc.), whose Decisions reflect the will of the Community. This project will facilitate this by strengthening linkages between the PISLM and its High-Level Ministerial Body and the Decision Making Organs of the Community.

? *Weak Institutional and Legal Frameworks and Public Education on SLM and its Importance to National and Regional Development*: SLM issues including sustainable soils management is not currently sufficiently reflected in major legal and policy instruments, nor is there a sustained Public Education programme to enlighten policy makers, resource managers, and the general public in the individual participating countries and regionally of ecological processes and their links to socio-

economic wellbeing, in particular, with respect to food security. Consequently, most of the participating countries, and the region, in general, do not have a strong policy and regulatory framework in place to support SLM measures and address the most pressing land degradation processes. This project will address these issues.

(2) The baseline scenario and any associated baseline projects

34. National reports for the UNCCD, including the recent LDN-target setting programme (TSP), among participating countries show significant changes in land use over the baseline period (15 years). It can be reasonably assumed that the extent and nature of these changes would increase over time. Comprehensive available soil data for the Caribbean is restricted to the 1950-70s soil surveys, with only a few countries having digitized this information. None of the participating countries have a **full set** of the **minimum set of indicators?**land cover and land cover change; land productivity and soil organic carbon**?**recommended for tracking progress towards LDN against a baseline. Where such information exists, it is, in most cases restricted to land cover and land cover change. In the case of soil organic carbon, none of the participating countries have this information; the absence of which, poses a significant constraint, for these countries to formulate a LDN Strategy without undertaking such baseline work.

35. Land information systems are present and used with a range of efficiency throughout the region. A survey of participating countries indicated that most of them have a digitized geographical information system, albeit not updated and sometimes fragmented between agencies. Countries have been constrained in monitoring land (physical) resources as well as maintaining databases, with minimal human resources and equipment. Much of the existing data, either remains fragmented across multiple public/private stakeholders or resides with the conventions. Further, member countries do not possess soil information systems, although recent projects have allowed for collection of new data.[4][4] Though some of the participating countries (e.g. St. Lucia) have soil analytical capability, where this capability exists, there is a need for it to be upgraded.

36. On the policy front at the regional level, several policy frameworks exist, which provide a context for the SOILCARE project. At the Caribbean Community level, the Regional legal framework?*the Revised Treaty of Chaguaramas Establishing the Caribbean Community Including the CARICOM Single Market and Economy* (CSME)?has been ratified by all the participating countries. Within this context, a number of policy frameworks which have direct linkages to natural resources, including management of land use and land and soil resources, have been prepared or are in the process of being prepared that are relevant to this project. These include, *inter alia*: the *Caribbean Community Agricultural Policy* (CCAP), which in its execution, will need to establish linkages to the ?region?s work on sustainable development, environmentally friendly agricultural practices;?; *the Regional Food and Nutrition Security Plan* (RFNSP) which links the provision of food and better husbandry of the region?s environment and natural resources with the availability of water resources for agriculture, the need for drought monitoring and the ability of the region to adapt to the adverse impact of climate change; and the *Draft Community Environmental and Natural Resources Policy Framework* which is

intended to serve as the Umbrella Policy Framework for the sustainable management and use of the Community?s environmental and natural resources.

37. A number of participating countries?Antigua and Barbuda, Grenada and St. Lucia?are members of the Sub-Regional Body, the Organization of Eastern Caribbean States (OECS), and party to the *Revised Treaty of Basseterre Establishing the Organization of the Eastern Caribbean States Economic Union* and has an obligation to implement its *St. George's Declaration of Principles for Environmental Sustainability*. This instrument provides a framework to minimize environmental vulnerability, improve environmental management and protect the region's natural (including historical and cultural) resource base for optimal social and economic benefits for its Member States.

38. At a policy, political and organizational level the Partnership Initiative on Sustainable Land Management[5][5] (PISLM) for Caribbean SIDS together with countries parties have made significant progress in identifying drivers of land degradation, assessing the extent of degradation, mainstreaming SLM and LDN through legislative instruments and identifying transformative projects/ programmes and financing mechanisms to avoid, reduce and restore degraded lands. Its legislative Mandate being derived from a number of sources, including, *inter alia,* the Forum of Minister of Environment for Latin America and the Caribbean, pursuant to its Decision 4 of 2003 and of the 25th Special Meeting of the Council for Trade and Economic Development (COTED) [Environment], of the Caribbean Community held in April 2008 in Guyana, the PISLM has been mandated by the Ministers of Environment of Latin America and the Caribbean and of the Caribbean Community (CARICOM), to serve as the *framework for* [Caribbean SIDS] for *the implementation of the United Nations Convention to Combat Desertification (UNCCD), and the Land Management components of the Barbados Programme of Action (BPOA) [and] the MSI/BPOA in Caribbean SIDS,* [and the SAMOA Pathway].

39. The Partnership Initiative for Sustainable Land Management (PISLM) for Caribbean SIDS, as the inter-governmental convening mechanism for the Caribbean SIDS participation in the UNCCD is currently executing ?two GEF MSP projects in Dominica. The ?*Sustainable Land Management in the Commonwealth of Dominica?* project (2017- 2021) aims to develop new, sustainable approaches to land management of agricultural lands and watersheds that will reduce land degradation processes and increase resilience to the impacts of severe weather events, while also ensuring that the country?s agricultural sector can continue to ensure food security and provide viable livelihoods for the large part of the population engaged in agricultural production. The ?*Strengthening Resilience of Agricultural Lands and Forests in Dominica in the Aftermath of Hurricane Maria*? project (2020-2024) aims to strengthen resilience in the landscape surrounding Morne Trois Pitons National Park through participatory forest rehabilitation / restoration, sustainable agricultural practices, and the development of livelihoods options.

40. Directly relevant to SOILCARE is the Land Degradation Neutrality (LDN) Target Setting Programme, (TSP) which is being implemented through the Global Mechanism (GM) and the Secretariat of the UNCCD, in collaboration with multiple international partners. The LDN/TSP process in which all the participating countries[6][6] have signed up to undertake, is the vehicle being used by the COP/UNCCD for driving the linkage of the Convention to the SDGs in general, and more specifically to target SDG 15.3, while contributing to the achievement of multiple SDGs, related, inter alia, to climate change mitigation and adaptation, biodiversity conservation, food and water security, disaster risk reduction, and poverty reduction. The SOILCARE Project is building on the LDN/TSP programme

(i.e. target sites are preidentified hotspots) support national efforts to implement commitments derived from this process (please see section 7-Consistency with National Priorities)

41. A Morocco funded ?Caribbean Soil Fertility Project? is being implemented in three of the SOILCARE participating countries?Antigua and Barbuda, St. Lucia, Grenada? as well as in St. Vincent and The Grenadines and St. Kitts and Nevis and Dominica. This project is contributing to the participating countries? capacity to manage soil fertility, establish a database and develop a sound soil information system to speedily and effectively respond to country needs and demand for fertilizers. SOILCARE will coordinate with this project to ensure that capacity building programmes strengthen each other and that the soil information systems are fully compatible so that data collected reaches a broader audience.

42. The Climate Change Adaptation Programme (CCAP), implemented by the Caribbean Community Climate Change Centre (CCCCC) in ten countries including Dominica, is funded by USAID through its Eastern and Southern Caribbean (ESC) office in Barbados (July 2016 to September 2020 with a budget of US$ 26.6 million). The CCAP is part of a larger goal of creating a more secure and prosperous Caribbean Community through sustainable climate change adaptation measures. The project has three components: Component 1 - Promotes the use of climate data and information for use in decision-making; Component 2 - Supports innovative adaption approaches which demonstrates proof of concept necessary to secure additional financing; and Component 3 - Fosters climate financing to support scale up and replication of sustainable adaptation initiatives. The SOILCARE project will use the climate data and adaptation approaches from CCAP when programming its interventions in the field. SOILCARE will also coordinate with CCAP in upscaling efforts by sharing information and building on each other networks.

Associated National Baseline Frameworks and Projects

43. The baseline scenario with regard to land degradation in the participating countries indicates an increasing appreciation of the importance of Sustainable Land Management to national development. In the case of **Grenada**, the recent preparation of National Land Policies is indicative of this trend. This was supported through the OECS Technical Assistance for the Establishment of National Land Policies In the case of Grenada, part of the assistance involved the integration of sustainable land management components into the *Draft Climate Resilience, Environment and Natural Resources Bill*. The National Land Policy recommends that the Government shall complete the preparation of the National Physical Development Plan within 2 years and be laid in Parliament.

44. For **Guyana**, the baseline scenario which should guide the country?s development in the foreseeable future is the Low Carbon Development Strategy (LCDS). Generally, the Strategy integrates national instruments already in place including, inter alia, the National Determined Contribution (NDC), the Low Carbon Development Strategy efforts, Climate Resilience Strategy Action Plan (CRSAP), Guyana?s renewable energy transition plan, Climate change resilience strategy and adaptation plan, National Strategy for Biodiversity Conservation (under revision to mainstream the SDGs), National Adaptation Strategy for the Agricultural Sector (2009-2018). The GSD Strategy lays the foundations for inclusive green economic growth, for achieving sustainable development targets, and for providing a long-term vision for a prosperous and equitable future as well as to reorient and diversify Guyana?s economy to reduce reliance on traditional sectors and open up new income and investment opportunities in higher value adding and higher growth sectors. This Strategy commits the

country to a green and inclusive industrial transformation, shifting to a more diversified economy, better balanced toward higher value-adding activities.

45. **In Barbados**. land degradation is a serious problem in Barbados, particularly in the Scotland District in the north-east of the island. This area constitutes one-seventh of the land mass of the island, and in addition to land degradation is prone to land slippage, particularly after periods of heavy rains. One of the strategies used Barbados over the past almost seven decades is the introduction of soil conservation techniques through the Soil Conservation Unit (SCU). More recently, the Government of Barbados has adopted an **integrated landscape and ecosystem approach** to the area as a framework for addressing, not only land degradation, but also the drivers underpinning land degradation in the area, including, *inter alia,* forest clearing, unsound agricultural practices; inappropriate housing development etc. and the promotion of environmentally and sustainable livelihood options. The approach which is being used is embodied in the Barbados National Park which extends from Archer?s Bay at the North-Eastern tip of the island to Concept Bay, encompassing the Scotland District.

46. Further, in order to rehabilitate many of the degraded areas in country, the Government of Barbados has launch ?**Planting a Million Trees Project.?** This project embodies not only central objectives of the Barbados National Park including inter alia?to conserve and enhance the character and quality of the landscape [?] in the Park, including all features of natural and cultural heritage and to define and protect a functionally connected natural heritage system based on an ecosystem approach? but also Barbados obligation within the United Nations Convention to Combat Degradation(UNCCD) and its commitment to contributing to the achievement of Sustainable Development Goal SDG 15.3, and more specifically to **Land Degradation Neutrality**[7][7] **(LDN)**. Further, the Government of Barbados is committed to the ?[?] transformation of the tourism sector by [?] greening through water conservation and water harvesting measures, where applicable and the installation of renewable energy capacity, to reduce reliance on fossil fuels.?[8][8] The National Park is expected to play an important role in this process; hence **resources under this project will contribute to the attainment of the ?Planting a Million Trees Project? as well as the greening of the Barbados National Park in support of this policy directive,**

47. In the case of **Jamaica**, the national policy framework is Vision 2030. This policy framework has been established by the Government of Jamaica to spearhead the preparation of a long-term national development plan; a multi-sectoral approach to making Jamaica ?the place of choice to live, work, do business, and raise families.? Underpinned by four national goals?Goal 1: Jamaican are empowered to achieve their fullest potential; Goal 2: The Jamaican society is secure, cohesive and Just; Goal 3: Jamaica?s economy is prosperous and Goal 4: Jamaica has a healthy natural environment?Vision 2030 is the country?s first long-term (21 year) national development plan which has bipartisan support. With respect to Goal 4, which is relevant to this current project, it has a number of national outcomes, including, inter alia, sustainable management of natural resource, hazard risk reduction and adaptation to climate change and urban and rural development.

48. In the case of **St. Lucia**, Vision 2030 is a major programme to reduce the island?s risk to natural disasters which involves measuring risk reduction at a national level. At a time of increasing concerns about impacts of climate change and natural disasters, the programme hopes to reduce losses from flooding, landslides and extreme weather events. Vision 2030 is supported by a National Vision

Plan which provides a developmental road map for the future development of the island as well as a framework through which the entire island can share in a common vision, positioning Saint Lucia at the economic and social heart of the Windward Islands. It provides the tool within which all governmental and non-governmental agencies can identify and develop individual projects.

49. **Belize?s** Horizon 2030 is the national development framework and governmental baseline This framework represents the consolidated views of many stakeholders?young and old, men and women, students and teachers, politicians and voters, employers and employees, public and private sectors, farmers, tourism operators and artists. It therefore embodies the vision for Belize in the year 2030 and the core values that are to guide citizen behaviour and inform the strategies to achieve this common vision for the future. The Horizon 2030 Framework covers several thematic areas that are organised under four main Pillars: *Pillar 1: Democratic governance for effective public administration and sustainable development; Pillar 2: Education for Development ? Education for Life; Pillar 3: Economic resilience: Generating resources for long term development and Pillar 4: The Bricks and the Mortar ? Healthy Citizens and a Healthy Environment.* With respect to Pillar 4, to importance of Belize?s natural resources to the country?s economic future is recognised as well as the fact, that the main economic drivers ? tourism and agriculture ? are natural resource based. There is therefore a broad awareness of the importance of the environment and the need to put in place effective laws and regulations, information and communication systems to protect the environment while promoting sustainable social and economic development.

50. In the case of **Antigua and Barbuda**, the enactment of the *Environment Management and Protection Act, 2019*, creates a framework for the sustainable environmental management and provides for the protection of natural resources of Antigua and Barbuda. It also details the processes of the environmental impact assessment (EIA), methods of environmental management, and compliance and enforcement.

51. In addition, resources will be provided under the Caribbean SIDS GEF- Islands Project on chemicals to assist the region in addressing the impact of soil pollution in Caribbean SIDS soils.

Site Selection

52. Sites were selected by key local stakeholders for the respective National project sites. Some of the guiding criteria used included the following:

? Types and degree of land degradation that will benefit from the implementation of sustainable land management practices,

? improved agro-ecosystem services that will impact the livelihood of significant numbers of farmers within farming communities,

? direct involvement of special interest groups, local communities and organisations with inclusiveness with respect to youth, gender and indigenous people?s equity,

? number of beneficiaries are significant,

? areas where land degradation can be prevented and reduced, degraded lands restored, climate resilience strengthened and ecosystem services secured and that will result in significant global environmental benefits.

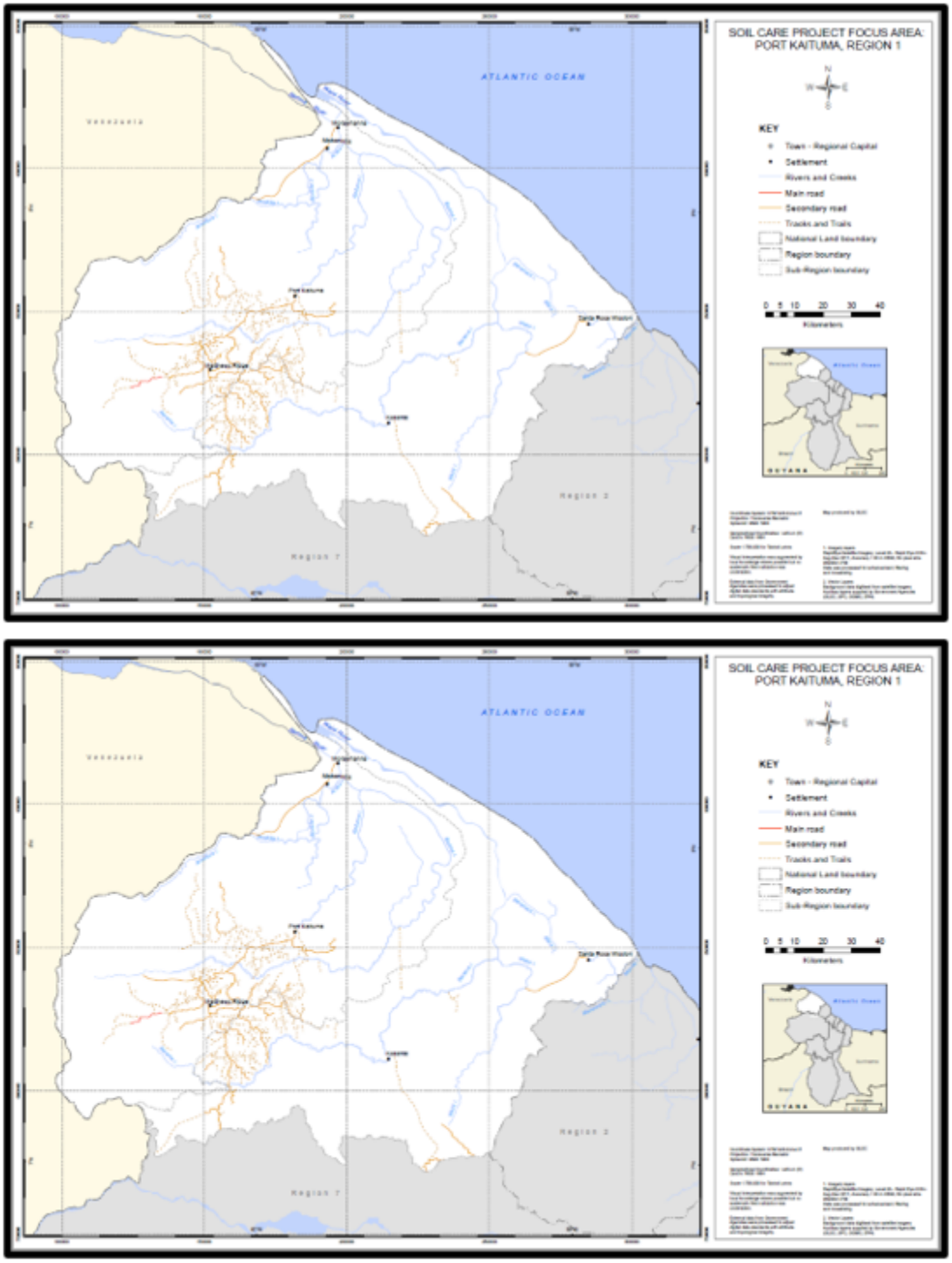
Baseline Conditions in the National Project Sites

53. Project activities will comprise of interventions, both regionally across the participating countries and nationally, based on specific issue(s) identified by the respective participating countries. In terms of the National Implementation Sites, some fifteen sites have been identified across the participating countries, for which specific activities will be implemented. Of the eight participation countries in the project, field based activities will be carried out in seven of the countries with the exception of Antigua and Barbuda which has decided, given the importance of Component 1 to its national development, to concentrate its efforts on main on that component, as a field based activity. The sites selected by the participating countries to a large extent builds upon existing baseline projects and current use including the priority areas identified for intervention under the Land Degradation Neutrality (LDN) Target Setting Programme, (TSP). In addition, the work to be undertaken during this project builds on the initial work done under a number of specific projects such as the Soil Fertility Project by extending its scope of issues to be addressed particularly with respect to soils and their management. In the case of Haiti, though one of the sites is ?in theory? a protected landscape, for all practical purposes it is being used as a ?productive? landscape, given the situation in Haiti, and hence its inclusion as a National Implementation Site. The Section therefore provides a brief overview of the baseline conditions in each of these National Implementation Sites.

54. **Guyana** has selected **three National Implementation Sites**, namely Region 1 ? Port Kaituma, which occur along the lower floodplains of the Waini, Aruka, Kaituma, Barima and Barama Rivers, extending up to 65km inland of the coast and abutting abruptly with soils of the crystalline shield uplands; Region 10 ? the Intermediate Savannahs of North-East Guyana which lies immediately to the South of the coastal plain, extending both east and west of the Berbice River in a South-Westerly direction, and adjoin the upland rain forest regions; and Region 5 ? the Mahaica Mahaicony Abary area which extends east of the Mahaica River to the west bank of the Berbice River. Given the importance of agriculture, two National Implementation sites? the Intermediate Savannahs of North-East Guyana and Mahaica Mahaicony Abary area?with different micro-climates and physiographic characteristics have been selected on which Climate Smart will be undertaken. One National Implementation site ? Port Kaituma has been selected for activities related to the rehabilitation of degraded soil.

55. In the case of the **coastal plain in Region 1 ? Port Kaituma** (See Map 1), this covers an area of 637,291 ha or 32.6% of the Region. It is composed of a narrow strip of front land clays derived from marine and fluviomarine deposits, largely to the north of the Waini River, with a large area of back-swamp organic soils inland. The front land soils are more fertile than the organic soils behind which have very low fertility and toxicity in some instances. The hydrology of Region 1 ? Port Kaituma is dominated by its rivers, all of which flow initially from south-west to north-east before swinging round to flow westward again; the Waini and its tributaries, the Barama, the Barima, the Kaituma and the Aruka, all of which join near Morawhanna, flow into the Atlantic Ocean.

56. In terms of population, 22 per cent of Guyana?s ?Amerindian? or Indigenous population of 68,819[9][9] are concentrated in Region 1. This constitutes approximately 62 percent of Region population.[10][10] The main Amerindian ethnic groups which are concentrated in Region 1 are: the Arawak (Lokono), Warau and the Carib (Karinya). Particularly, Port Kaituma in Region 1 comprise a population of 1,152 (based on 2012 population census) that predominantly resides in Amerindian settlements. The economy of Region 1 comprises essentially of cash-activities, logging for coastal and multi-national saw millers; manicole palm harvesting; gold-mining on the Barama and Barima Rivers; subsistence farming and craft-production.

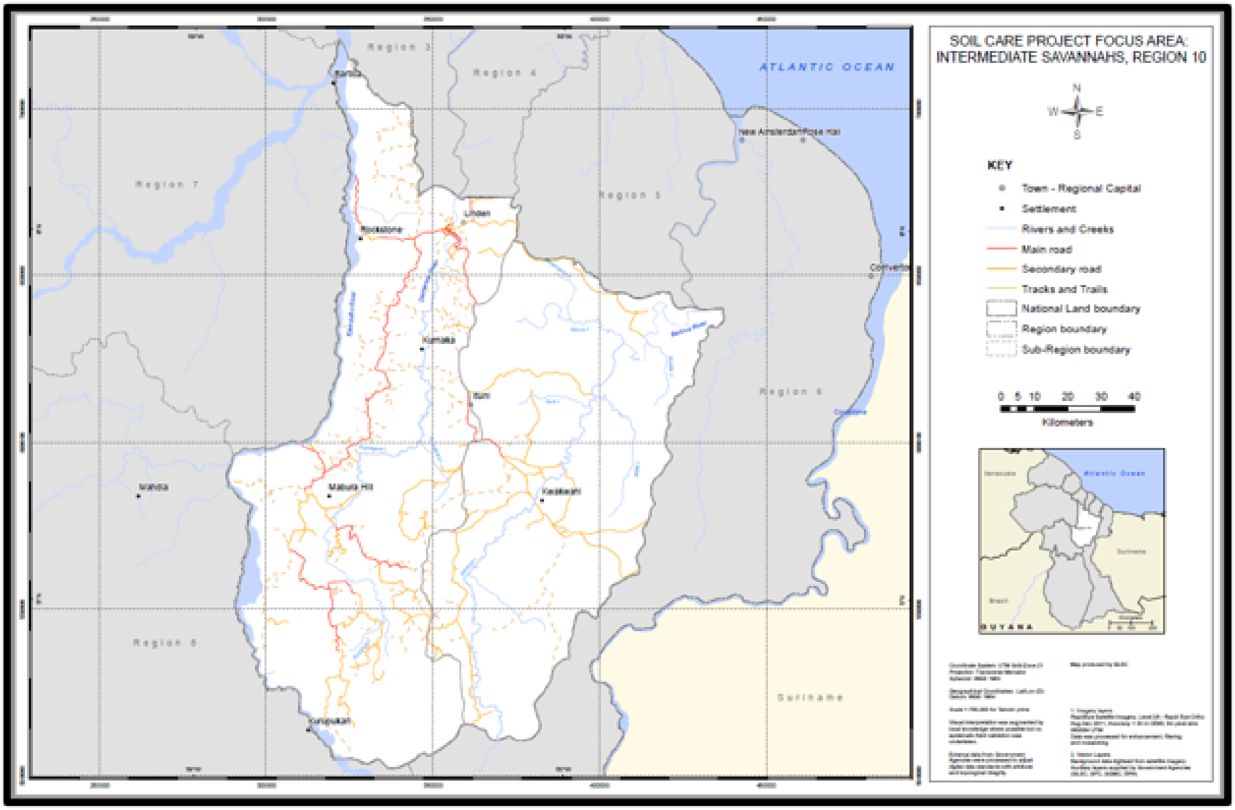


Map 1: Region 1?Port Kaituma

57. The drivers of land degradation in Region 1?Port Kaituma are mainly anthropogenic in nature and include the removal of vegetation associated small and medium-scale gold mining and its concomitant

impacts resulting therefrom. These include contamination of the water supply of the villages situated downstream as a result of the unregulated use of mercury by many gold mining operations to recover the gold. This presents a serious health risk for miners and well as result in the contamination of the rivers from the residue which washes into them. Notwithstanding the environmental bonds which have to be lodged at GGMC before mining can commence in order to compensate for land reclamation, land degradation remains a serious problem. Another driver of land degradation in the area is the clearance for agriculture of relatively large areas of riverain land of which, in most cases, probably only 1-5% of the land is used for crops. This process is referred to by the Amerindians as ?banding?, which essentially is a system of slash and burn for subsistence where crops (usually ground provisions such as yam, eddoes and ginger) are grown for 1-3 years and then abandoned and left to ?fallow? for a further ten (10) years. The farmer then proceeds to clear another portion of the land that is planted and worked for another 1-3 years.

58. The second Nation Implementation Site for Guyana is **the Intermediate Savannahs situated in Region 10** (See Map 2) and consists of 257,500 hectares and has a population of about 5,845. The Intermediate Savannahs is situated in the transitional climatic zone between ?tropical wet and dry? and ?tropical humid?. Maximum one day rainfall is listed as 7.23 inches, with the number of days of rainfall less than, or equal to 0.1 inch varying from a minimum of 177 days to a maximum of 257 days. A critical factor which impact land degradation in the Intermediate Savannahs site is the seasonal variation of rainfall couple with inadequate water control which is an important limitation to intensive land use and economic crop production. Seasonal and irrigation rainfall distribution and the low available moisture holding capacity of some of the upland soils subject them to severe drought during the dry season. Low lying areas in the river and creek valleys need protection from flooding at high tide especially in the rainy season. Thus, both irrigation and drainage are of prime importance. Some soils will give greater returns per dollar invested in drainage than others. Soils with toxicity problems and organic soils, would have limited value even after drainage, whereas such soils as the De Velde and Everton would be greatly improved and very productive. It is important to note that national initiatives along the path of the Agricultural Export Diversification Project includes measures to ensure that Indigenous communities within the Intermediate Savannahs benefits from the expansion of agriculture.


SOIL CARE PROJECT FOCUS AREA:
INTERMEDIATE SAVANNAHS, REGION 10
N
W
E
S
KEY
Town - Regional Capital
Settlement
Rivers and Creeks
Main road
Secondary road
Tracks and Trails
National Land boundary
Region boundary
Sub-Region boundary
0 5 10 20 30 40
Kilometers
ATLANTIC OCEAN
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8
Suriname
Bartica
New Amsterdam
Rose Hall
Linden
Rockstone
Kumaka
Ituni
Mabura Hill
Kwakwani
Mahdia
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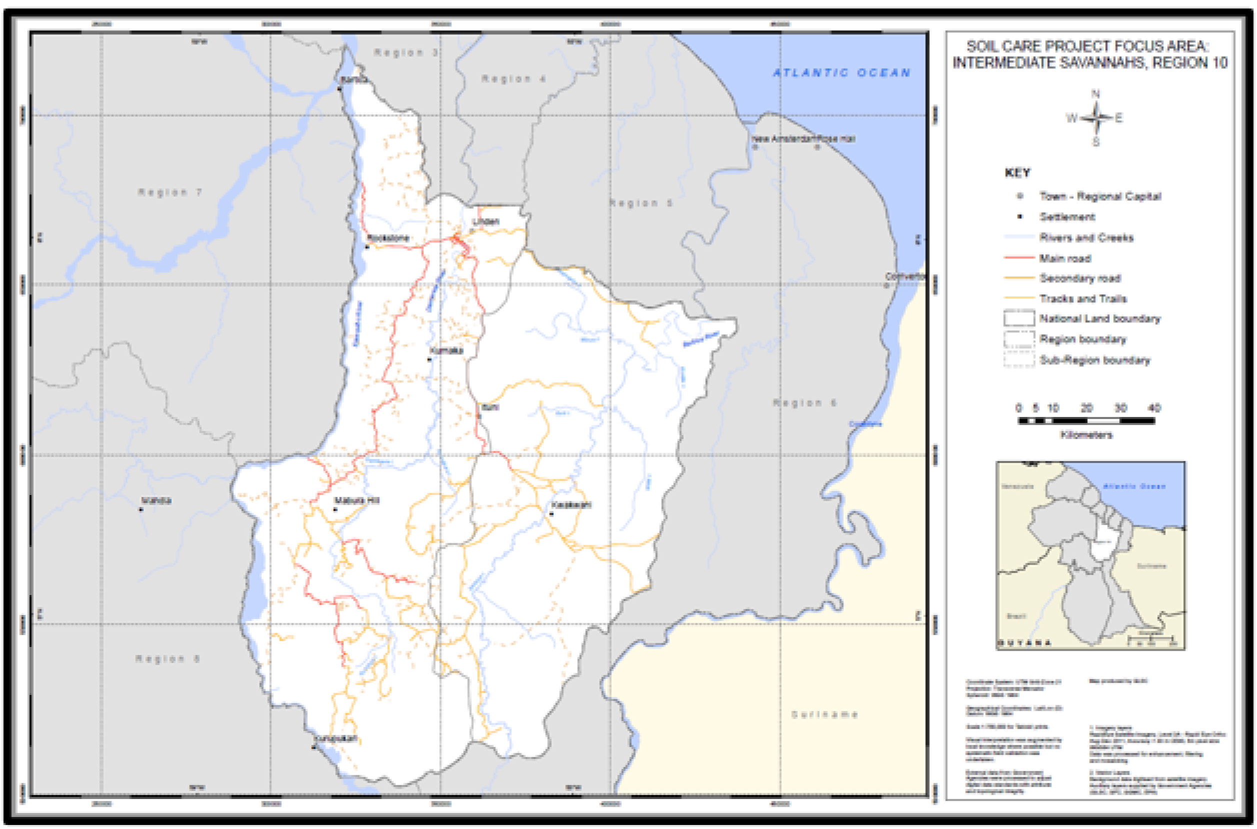
Venezuela
Atlantic Ocean
Suriname
Brazil
GUYANA

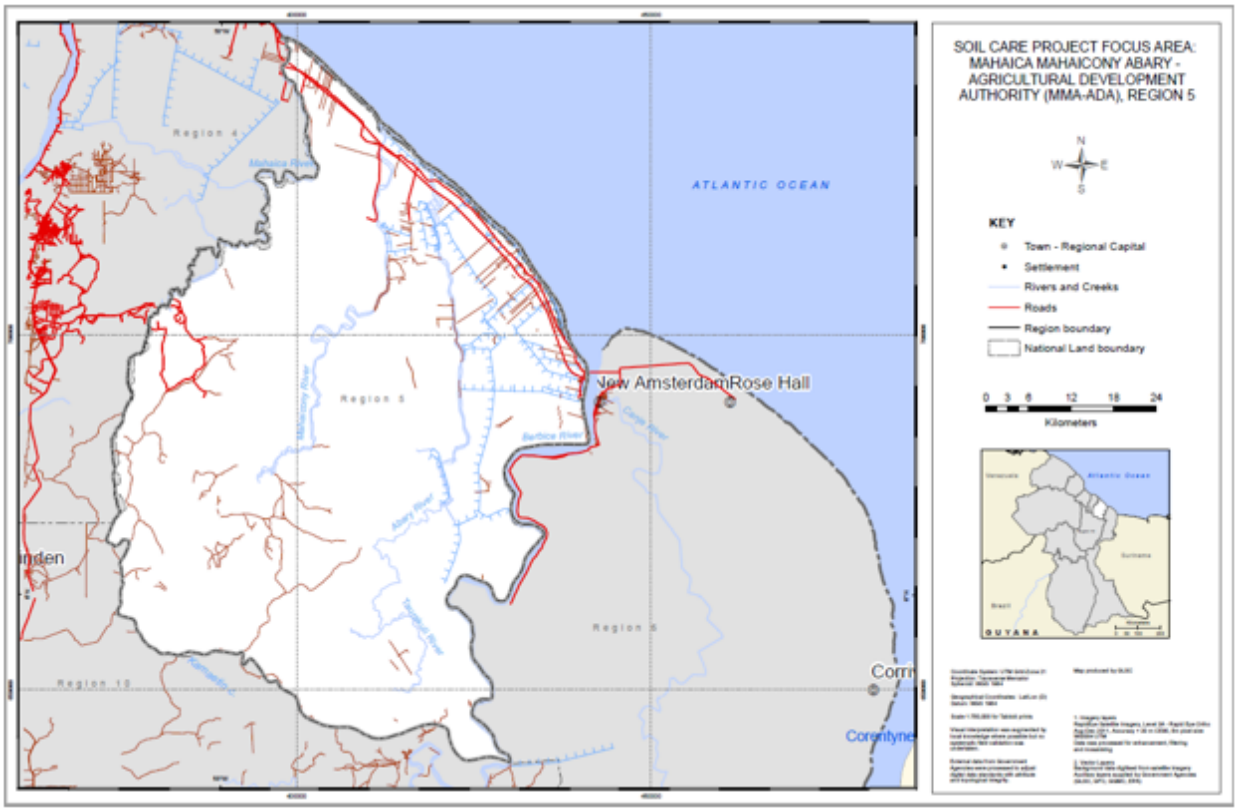

SOIL CARE PROJECT FOCUS AREA:
INTERMEDIATE SAVANNAHS, REGION 10
N
W
E
S
KEY
Town - Regional Capital
Settlement
Rivers and Creeks
Main road
Secondary road
Tracks and Trails
National Land boundary
Region boundary
Sub-Region boundary
0 5 10 20 30 40
Kilometers
ATLANTIC OCEAN
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8
Suriname
Bartica
New Amsterdam
Rose Hall
Linden
Rockstone
Kumaka
Ituni
Mabura Hill
Kwakwani
Mahdia
Kurupukari
Venezuela
Atlantic Ocean
Suriname
Brazil
GUYANA

Map 2: Region 10?Immediate Savannahs

59. In the Intermediate Savannahs, both surface and underground sources of water are available. The Berbice River serves as the major waterway which meanders through the Intermediate Savannahs for a straight-line distance of 71 km (44 miles) and a channel distance of 105 km (65 miles). There are four major tributaries which discharge into the Berbice River from the west ? Wiruni, Ituni, Kibilibiri and Eberoabo. From the east, the three tributaries discharging into the Berbice River are the Kimbia, Ebini and Wikki Creeks. The Berbice River and its tributaries facilitate the transport of people and goods in addition to serving as a source of water for agricultural and domestic uses. Natural subsurface storage of water in the Intermediate Savannahs produces dependable flow rates for water in the surface channels

60. Bauxite mining by the Aroaima Mining Company represents the most important economic activity in the Intermediate Savannahs proper. There are a number of legitimate logging concerns operating in the area, but there is also evidence of illegal logging activities. These illegal activities are considered strong drivers of land degradation. Crop and livestock agriculture are the other major economic activities, with the latter being dominated by ranch operations at the Ebini ranch in the Ebini/Kimbia savannah and Dubulay ranch in the Ituni/Tacama savannah. Row crop agriculture is prevalent mainly in the Wiruni savannah where a number of small farmers are involved in peanut and cow pea.[11][11]

61. The third National Implementation Site selected by Guyana is the **Mahaica Mahaicony Abary located in Region 5** (see Figure 3) and consists of 419,000 hectares and has a population of about 49,723. This area extends east of the Mahaica River to the west bank of the Berbice River. A large part of the region is low coastal plain. Further inland lays the Intermediate Savannahs and hilly sand and clay region. The region is plagued with high incidences of saline intrusion, significant erosion of foreshore, loss of mangrove forest and sea defence breaches that have caused major flooding, impact on livelihood, homes, livestock and farm. Notwithstanding, the major agriculture production of the region is affected by the annual rainy and dry season. Rice farming is the main economic activity of this region, followed by sugar and coconut farming, and beef and dairy cattle ranching.


SOIL CARE PROJECT FOCUS AREA: MAHAICA MAHAICONY ABARY - AGRICULTURAL DEVELOPMENT AUTHORITY (MMA-ADA), REGION 5
ATLANTIC OCEAN
Region 4
Region 5
Region 6
Region 10
Mahaica River
Mahaicony River
Abary River
Berbice River
Canje River
New AmsterdamRose Hall
Corentyne
KEY
Town - Regional Capital
Settlement
Rivers and Creeks
Roads
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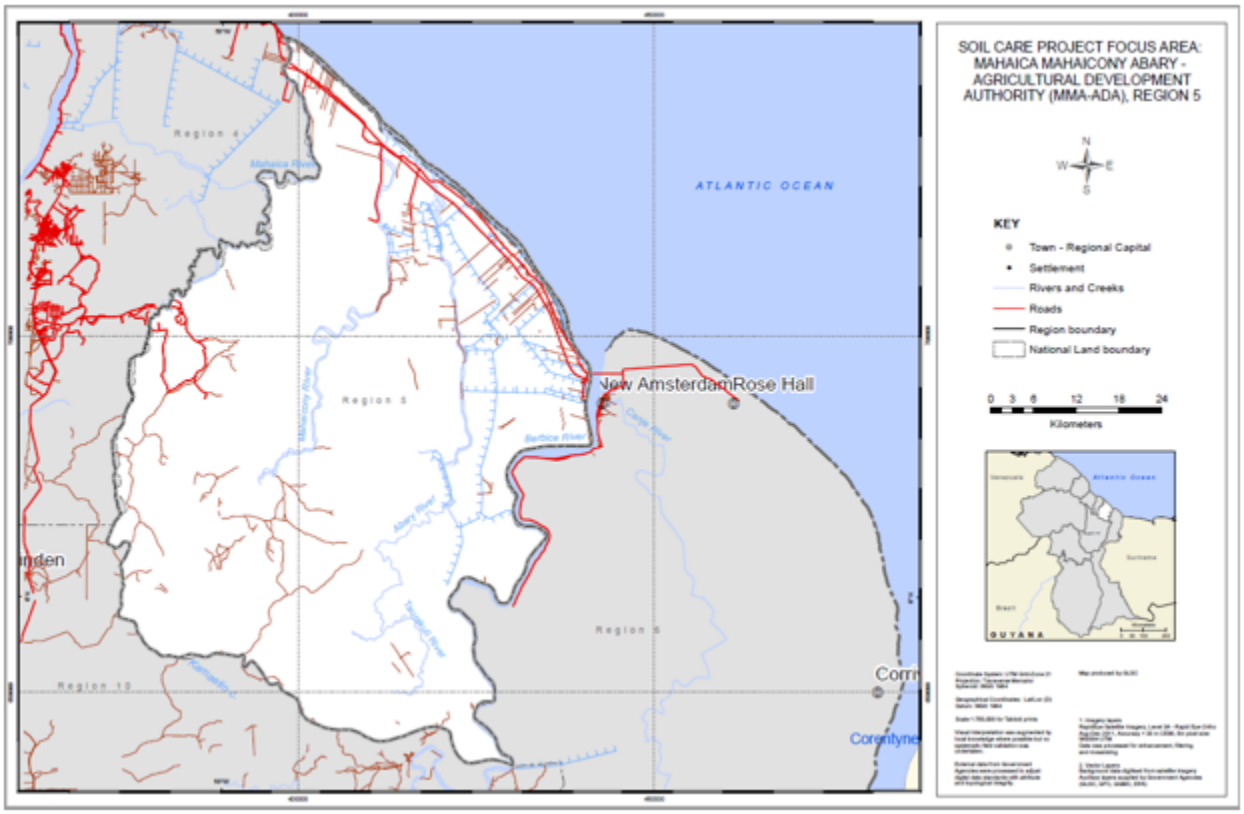
Kilometers
GUYANA

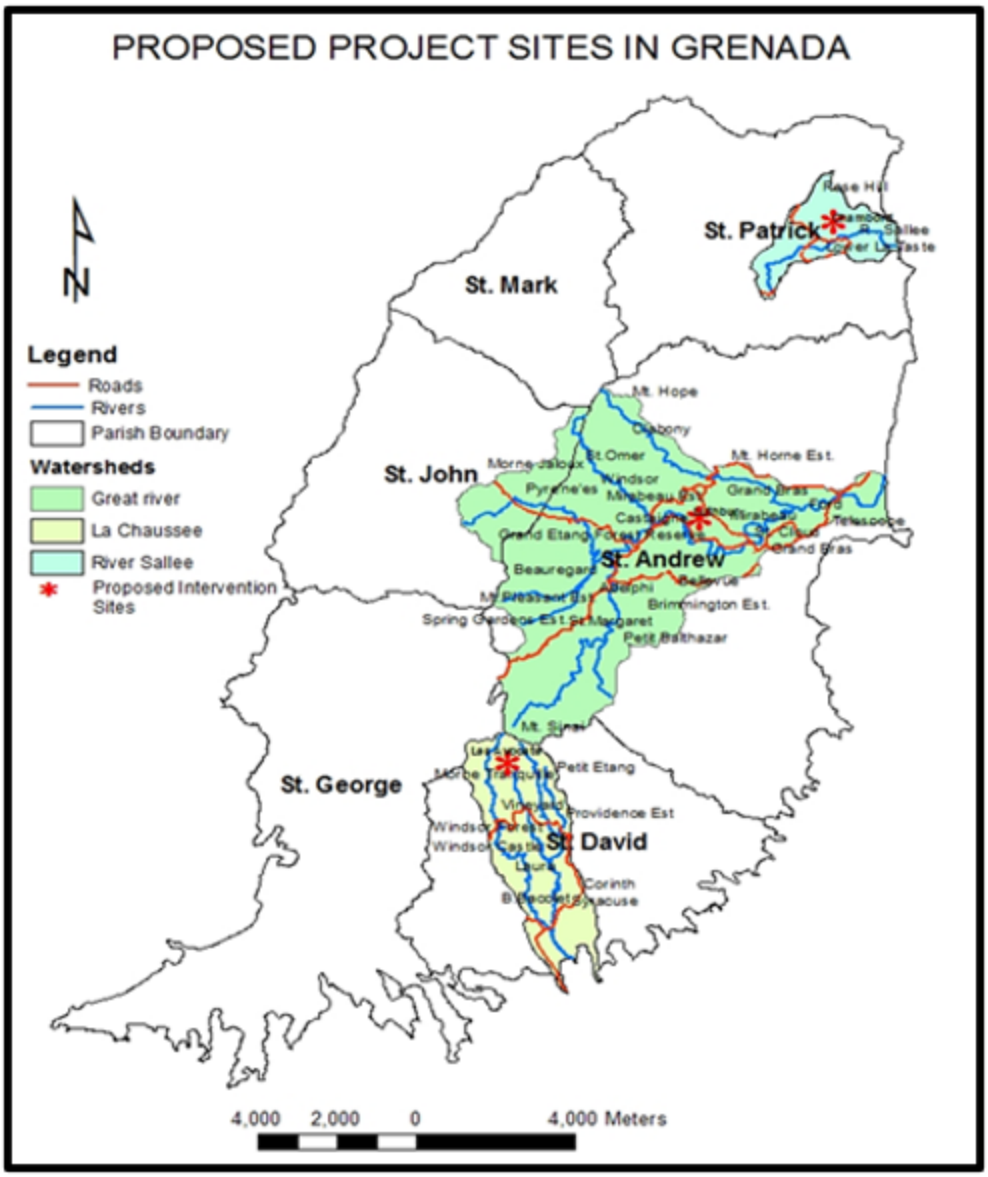

SOIL CARE PROJECT FOCUS AREA: MAHAICA MAHAICONY ABARY - AGRICULTURAL DEVELOPMENT AUTHORITY (MMA-ADA), REGION 5
ATLANTIC OCEAN
Region 4
Region 5
Region 6
Region 10
Mahaica River
Mahaicony River
Abary River
Berbice River
Canje River
New AmsterdamRose Hall
Corentyne
KEY
Town - Regional Capital
Settlement
Rivers and Creeks
Roads
Region boundary
National Land boundary
0 3 6 12 18 24
Kilometers
GUYANA

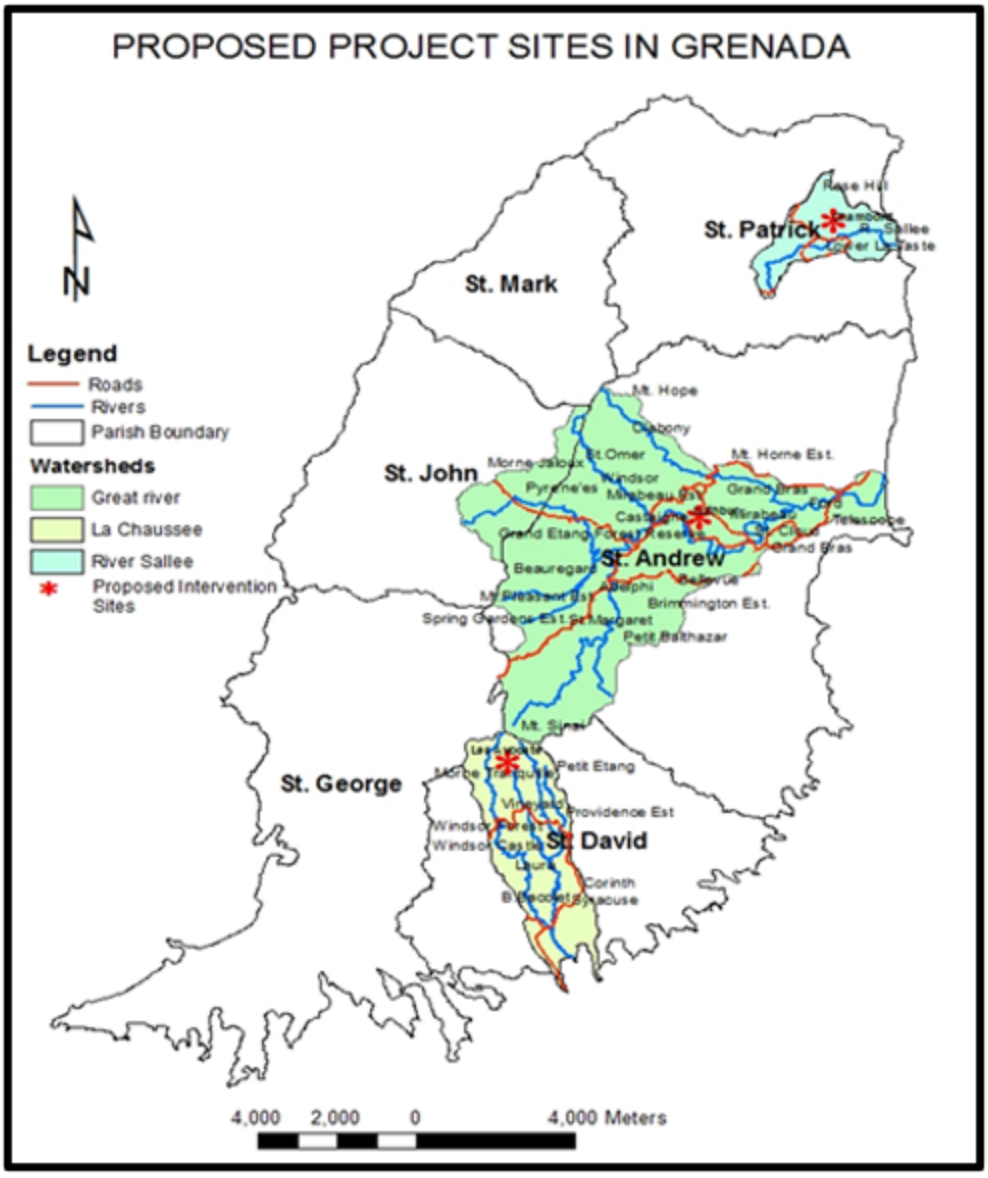
Map 3. Region 5 ? Mahaica Mahaicony Abary

62. Broadly speaking, there are three major problems of chemical nature, which may be encountered in the soils of the Mahaica-Mahaicony-Abary area.[12][12] One is salinity and refers to the presence of neutral salts like those in seawater. Sodium chloride is normally the major compound found, but magnesium sulphate is also common. Crops vary in their tolerance to such salts, but it is desirable to remove as much of the salinity as possible by good drainage, and to prevent subsequent flooding by salt water. A second problem is that caused by acid (i.e. toxic) salts, mainly iron and aluminum sulphates. These compounds are toxic to most plants even in very low concentrations and they must be removed. Usually the soils, which have neutral or sea, water salts before reclamation will be relatively fertile after the salts have been washed out. Soils with acid salts, which are known as cat clays, will be almost void of plant nutrients after the salts are gone. It is possible for a soil to contain both seawater salts (i.e. neutral salts) and acid sulphates (i.e. toxic salts), but this is uncommon. When this condition is present the toxic salts are often found in relatively small areas spotted throughout the mapping unit, thus the affected areas are only moderately suited to most of the commonly grown crops. The third major problem may be referred to as low percent base saturation, aluminum toxicity, or simple soil acidity. The pH of the soil is a fairly good measure of this condition. Crops vary greatly in their tolerance to soil acidity, but, in general, it can be said that low pH and low percent base saturation usually mean low fertility, high lime requirement, and the danger of aluminum toxicity. The three problems highlighted are interrelated and quite complex.

63. Selection of **Grenada?s** National Implementation Sites builds on the work undertaken during the country?s LDN/TSP in that the sites selected on the main island of Grenada? **Les Advocat Forest, Chambord** and **Luthbur,** Carriacou have been identified as hot spots**.** The Map 4 highlights the Land degradation Hot spots which were identified by the LDN/TSP for the main island of Grenada. Les Advocat forms part of the Grand Etang Forest Reserve on the South Eastern portion of Grenada in the parish of St. David?s. The area is well known for its ecosystem services as an upland watershed which provides a water production and distribution supply for NAWASA at the Mincore water treatment plant. The Forestry Department maintains a recreational hiking trail from les Avocate to upper Vendomme bordering the central Grand tang Forest reserve. During hurricanes Ivan and Emily 2004 and 2005 respectively, most of the forest cover was again destroyed and has recovered significantly. However, the local aggressive native species particularly Bamboo (*Phyllostachys Pubescens*), Bois canoe (*Erithalis* spp./) and Balsa (*Ochroma pyramidale*) now dominate the landscape. These invasive species have seriously affected the area as a critical watershed for the storage and supply of water, due to their high water consumption and limited ground cover restricting rainwater infiltration and retention in the soil . As a consequence, rapid depletion of stored water in the main treatment and distribution facility is experienced early in the dry season. Recommended interventions to be pursued include; removal of 10 acres of invasive non-economic plant species and replacement with indigenous viable agro-forestry species that have multiple benefits. Potential Impacts of intervention will include; reduction in soil erosion and improved water capture through improved vegetation cover; increase in ground water storage resulting from a decrease in uptake by undesirable

species and increase in available water for extraction and distribution by the water authority; as well as availability of fruits and seeds for human and wildlife consumption and increase in wildlife habitat.


PROPOSED PROJECT SITES IN GRENADA
N
Legend
Roads
Rivers
Parish Boundary
Watersheds
Great river
La Chaussee
River Sallee
Proposed Intervention Sites
St. Mark
St. Patrick
St. John
St. Andrew
St. George
St. David
Mt. Hope
Mt. Horne Est.
Grand Bras
Beauregard
Petit Bathazar
Mt. Sinai
Petit Etang
Providence Est
Corinth
4,000 2,000 0 4,000 Meters



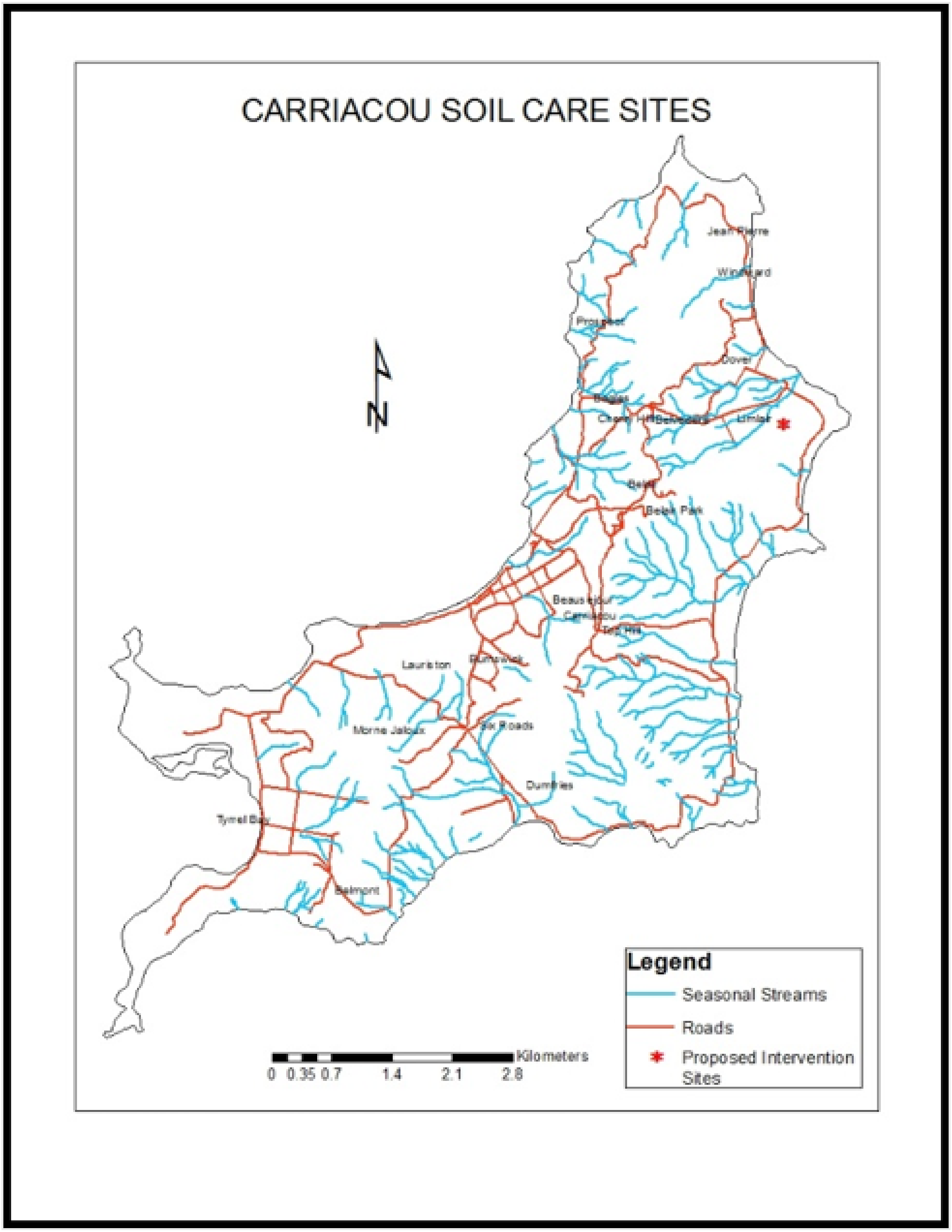
Map 4: Land Degradation Hot spots which were identified by the LDN/TSP for the main island of Grenada

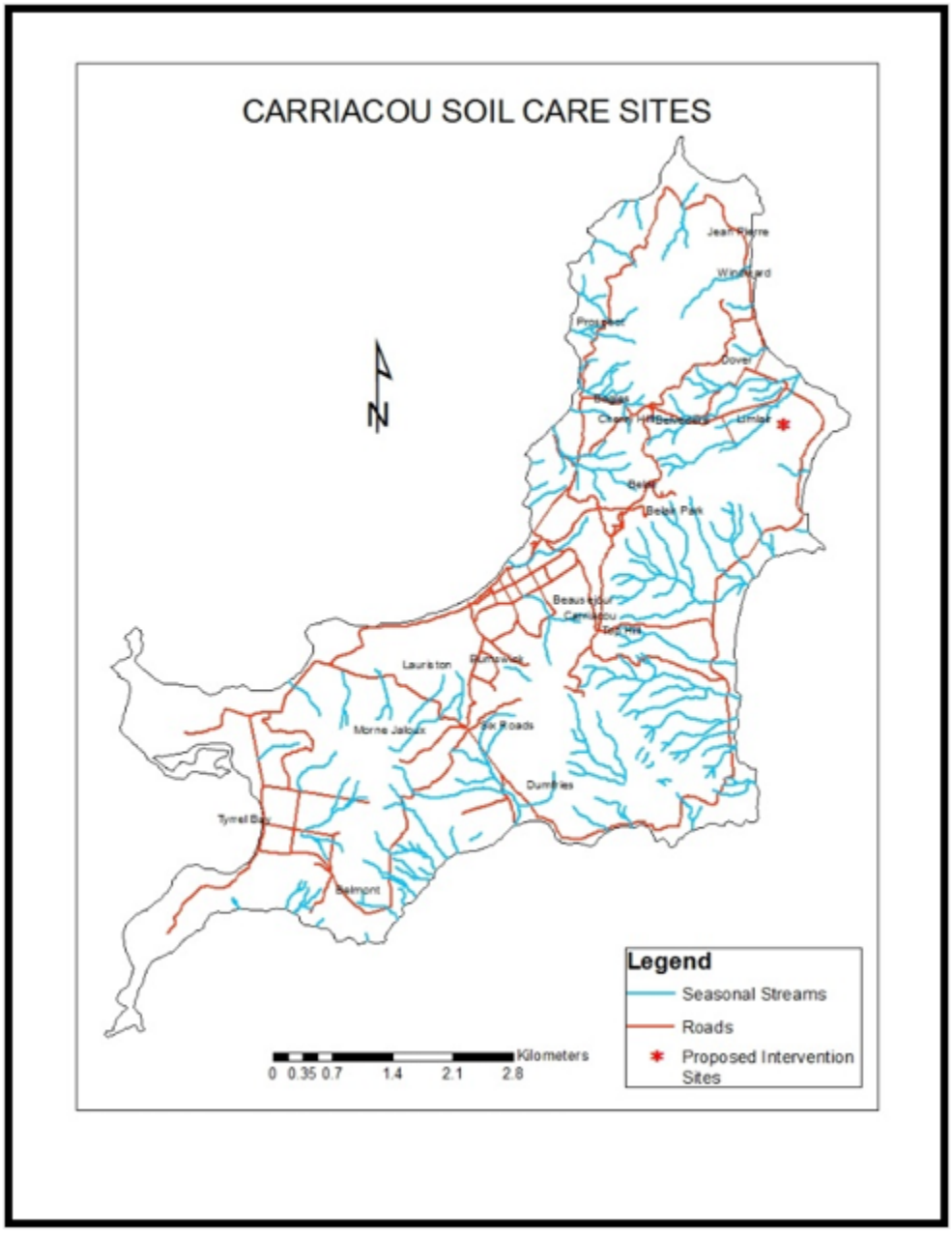
64. Chambord/Rose Hill?one of the Land degradation Hot Spots identified during the LDN/TSP process. Chambord is located in the River Sallee watershed in the east of the parish of St. Patrick. The area is dominated by flat lands, which are bordered by gently sloping lands. The total land area is over 100 acres. The farm sizes range from 0.5 and 3 acres. Twenty-five farmers depend on the area for their livelihoods. These farmers cultivate a variety of vegetables and food crops, primarily tomato, carrot, peppers, sweet potatoes, yam, and pigeon peas. Years of monocropping, poor cultural practices, and over use of inefficient irrigation system among other undesirable activities have reduced the capacity of the soil to naturall support crop production. A number of interventions have been identified. These include, *inter alia,* the rehabilitate ion of degraded areas; assistance with the establishment with a rainwater harvesting and water distribution systems; actions aimed at increasing natural soil fertility and improvement in soil quality and soil water holding capacity; the establishment of a composting

Programme; assistance with the establishment of a properly functioning farmer organization which in turn could assist capacity building of the farmers in climate smart agriculture techniques and post-harvesting technologies for value addition.

65. **Ludbur** is located in Mirabeau village of the Great River Watershed in the parish of St. Andrew. The area is dominated by steep slopes, which have contributed to severe gullies resulting from poor soil conservation practices, primarily failure to adequately control storm water. The farm sizes range from 0.25 and 3 acres. Twenty farmers depend on the area for their livelihoods. These farmers cultivate a variety of vegetables and foodcrops, primarily carrot, tomato, and cabbage. These crops are interplanted with coconuts and fruit trees which provides shade and serve as windbreaks.

66. A number of interventions have been proposed aimed at contributing to the reduction in soil erosion, enhancing farmers resilience to climate change due to improved water use efficiency and management; increase crop production and associated farmer income levels; enhanced data and information on the quantity of soil loss and the sustainable improvements in soil quality. The proposed interventions range from mechnical solutions such as the plugging of a 100 meters of gullies with vegetative and non-vegetative material using mechanical to manual means to land rehabilitation solution including the planting of 500 meters of vegetative soil conservation materials, such as crotens and vetiver grass; the establishment of 500 meters of contour drains to enhance drainage systems, planting of 100 meters of windbreaks with economic trees such as French cashew, mango and cashew nut. Proposed interventions also include the establishment of one central composting unit; the installation of 300 meters of 3 inch irrigation main line and soil loss measuring equipment to quantify soil erosion


CARRIACOU SOIL CARE SITES
Jean Pierre
Windward
Prospect
Dover
Beausejour
Carriacou
Lauriston
Brunswick
Morne Jaloux
Six Roads
Dumfries
Tyrrell Bay
Belmont
Legend
Seasonal Streams
Roads
Proposed Intervention Sites
0 0.35 0.7 1.4 2.1 2.8
Kilometers



Map 5: Carriacou

67. The Limlair Livestock Facility, Carriacou is the other National Implementation Site identified for Grenada. The project will focus on pasture improvement for small ruminants. Livestock farming has been a major part of the Carriacou landscape for many decades. It is engrained in the social and economic fabric of the society. Increasing local and external demands for livestock products over the years resulted in rapid growth of the livestock industry. This unfortunately resulted in overstocking which pushed the carrying capacity of some of the farmers? pastures beyond manageable limits. This forced farmers to let their animals roam freely especially in the dry season. This has resulted in serious social and economic problems, inter alia, damage to crops and consequent loss of income to farmers; the stymieing of other agricultural enterprises, such as crops and forestry because they cannot be

economically protected from free roaming animals; land degradation due to overgrazing, soil erosion and soil fertility decline; emergence and proliferation of undesirable forage species and decline in desirable ones; inhumane and economically disastrous practice by frustrated landowners of injuring roaming animals by chopping or killing them by hanging; confrontation among neighbours, that sometimes last for years and undermines the spirit of neighbourly community togetherness for which Carriacou is well known; and predation by dogs due to unsecured area.

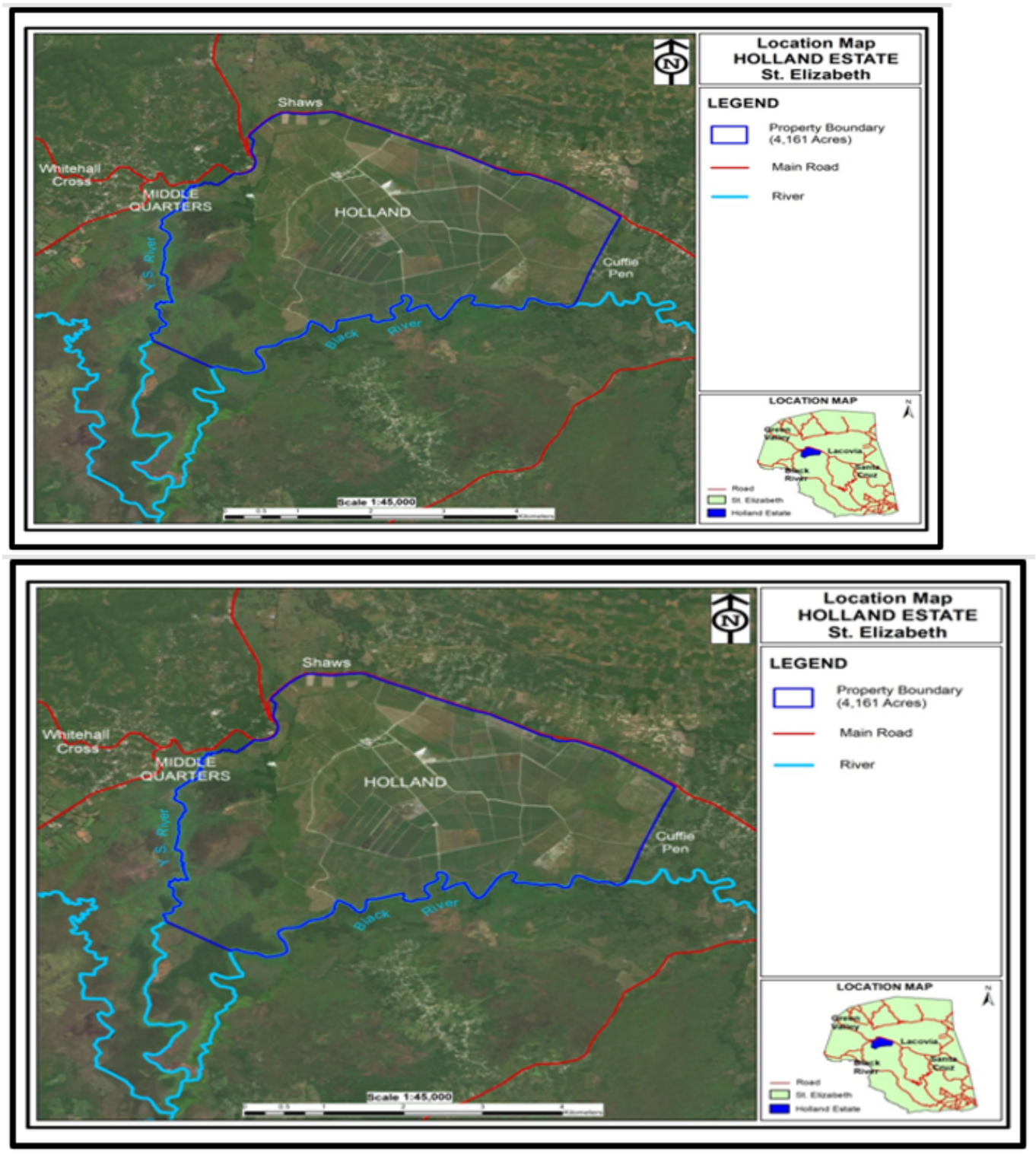
68. A variety of responses to these problems resulted in a marked decline in the number of small ruminants on the island over the years. Increasing demands for meat and milk in recent times have enticed farmers to consider increasing their stocks. In order to avoid the recurrence of the problems that emanated from such increases, measures such as secured fencing and fodder bank improvement must be pursued.

69. The stakeholders have identified a number of critical needs, including, *inter alia*, increase in the farmers resilience, especially during long and distinct dry seasons, for example through the availability of fodder banks producing feed in a controlled environment. Linked to this is the need for the improvement of pastures, equipped with Rain Water Harvesting Systems for the production of high quality fodder, including the rehabilitation of concrete storage tanks at Limlair Livestock Facility; training in the production of high quality fodder, livestock management and various climate resilient measures aimed at reducing the incidence of soil erosion and soil fertility decline of the soils and land resources and methods aimed at facilitating the reduction in production cost resulting from a decrease in reliance on feed concentrates supplement.

70. In the case of **Jamaica,** the National Implementation site is the Holland Estate (See Map 6). The estate is now a Government owned property leased to small farmers for agricultural production. Currently approximately 184 small farmers produce a variety of crops, including tubers and vegetables, currently occupy much of the 2,400 acre State-owned Estate. Previously 90% of the estate was leased for sugar cane production whilst the remaining acreage which was unsuitable for crop production was used for the grazing of cattle. The estate is located in the west central section of the parish of St. Elizabeth. The site is situated along the Bamboo Avenue main road from Lacovia to Middle Quarters. The northern section of the property is bordered by Bamboo Avenue main road while the southern section is bordered by Black River. The western section of the property is bordered by the Y.S. River which runs within the Great Morass and the eastern section of the property is bordered by Cuffie Pen, which is approximately 10 kilometers west of Santa Cruz.

71. The property as a result of recent declines in sugarcane production is currently being fully developed into an agro-economic zone, where in addition to the cultivation of a variety of agricultural commodities, will have postharvest processing and storage facilities.

72. Laboratory analysis conducted by the Agricultural Land Management Division has indicated variation in nutrient content.



Map 6: Holland Estate

73. The major soil type is the Morass Peat (28%) which occupies most of the south-western section of the property. The Morass Peat along with the Mangrove area has poor internal drainage resulting in swampy or waterlogged conditions, thus the agricultural potential of that section is limited. The land

capability classification for the morass area is Class Vw which is considered to be non-arable due to submergence risk and peat accumulation It should be noted that with proper drainage techniques some cultivation of food crops may be possible. The remaining acreage of the property is occupied by soils that have good agricultural potential once sustainable land management practices are implemented. The land capability classification for the majority of the rest of the property ranges from Class I to Class III, which are considered to be generally suitable for cultivation. The only exception is an area on the north-eastern boundary of the property where there exists approximately 14 acres of Bonnygate Stony Loam which land capability classification indicates limitations due to the soil being shallow and stony (see map 2: Soil map).

74. As a result of largescale commercial sugarcane monocropping for decades, the Holland Estate is currently challenged with a number of environmental degradation challenges. The land degradation drives include; inter alia, low soil organic matter as a result of the annual burning of sugarcane prior to harvest, low soil pH (less than 5.8) resulting from the use of acidifying nitrogenous fertilizers such as urea and ammonium phosphates, coupled with nitrate leaching that occurs under the high rainfall conditions characteristic of this site during the rainy season. An important water course ? the Black River borders the Holland Estate and it has been determined that this river has been adversely affected with respect to run off from the widespread use of agrochemicals some of which were applied aerially during the period of sugarcane cultivation.

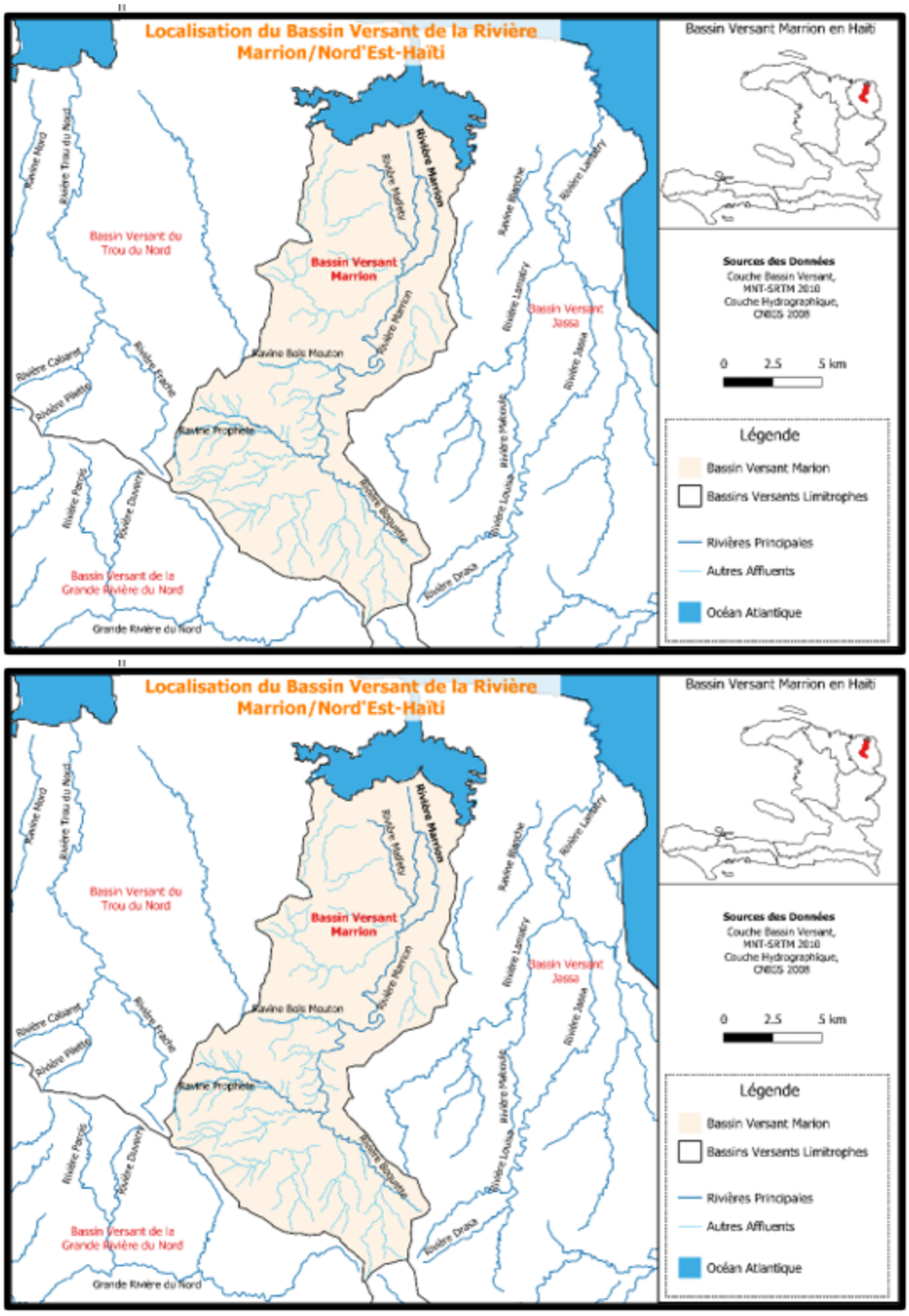
75. In Saint Lucia, focus will be placed on three National Implementation Sites. These include, Choiseul was originally known as Anse Citron. This is a relatively dry area with relatively low rainfall. Evidence observed in the field confirmed that this area suffers from bad agricultural practices and is heavily eroded. This site is suitable for the introduction of a major re-afforestation effort. Bois Den Jacmel, on the other hand is an intensely farmed agricultural area where extensive land degradation is occurring aided by bad agricultural practices. This site has been identified as an area where Climate Smart Agriculture will be undertaken. The final site, identified by St. Lucia is the Cendre de FEU/Sarot Bexon area. This is an agricultural area consisting primarily of abandon banana farms in which farmers are trying to identify alternative crops to sustain their livelihoods. This area will be targeted for the development of alternative crops under Component 4. Suggestions of crops identified by farmers, include, *inter alia*: tree crops such as cocoa; flowers and short-term crops such as mushroom.

76. The National Implementation sites in Haiti have as its focus the rehabilitation of the Quisqueya Fond-Parisien Natural Park including Lake Azuei and environs and the Rio Marion Watershed. The Quisqueya Fond-Parisien Natural Park covers an area of ??134 hectares bounded by Lake Azuei. Notwithstanding it designation, for all practical purposes it is a productive landscape where a number of unsustainable activities are being undertaken. The drivers of land use change which contributes to a range of environmental issues in the Implementation sites, include, inter alia; the unsustainable destruction of vegetation for fuel wood and other purposes; unsustainable agricultural practices which contributes to erosion and the destruction of biodiversity. As a consequence a wide range of environmental problems are evident, including, *inter alia*, soil erosion, the development and appearance of new ravines, the lack of green space, destruction of biodiversity management, including the risk of extinction of endemic species; the lack of water; the free rearing of livestock and the lack involvement of local communities.


Étang Saumautre
(Lake Azuei)
DOMINICAN
REPUBLIC
La Source
3e Fonds-Parisien
D.R.
4e Pays-Pourri
La Selle
7e Belle-Fontaine CDB

Map 7: The Quisqueya Fond-Parisien Natural Park including Lake Azuei and Environs

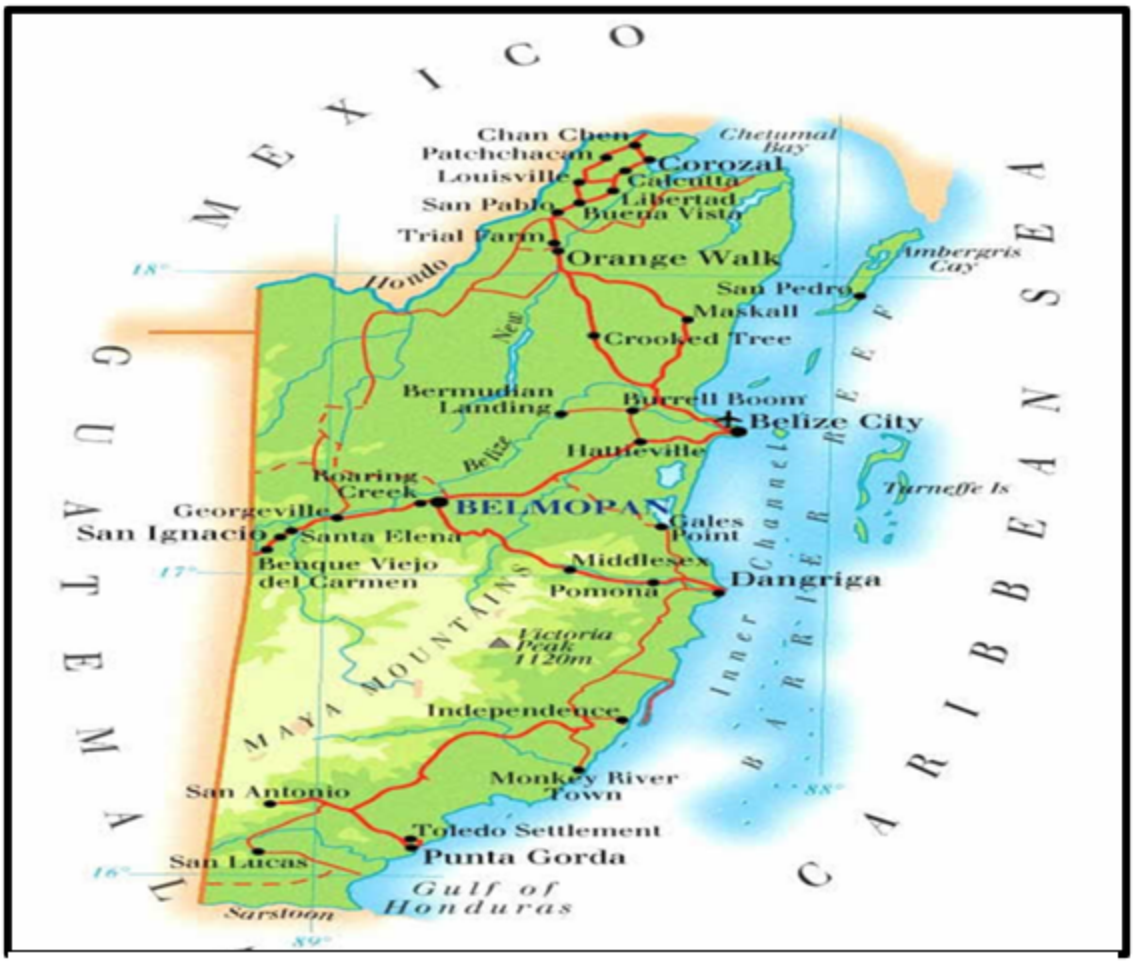
77. Despite consensus that the area, including the park and the surrounding environs should be managed in an integrated manner; this has been very difficult to achieve given the high dependence on the resources by the communities for their survival. Notwithstanding the area being designated as a protected area, for all practical purposes it can be considered as a productive landscape, given how the resources contained therein are used. The rehabilitation of the Quisqueya Fond-Parisien Natural Park including Lake Azuei and environs should target a number of areas, including, the rehabilitation of the Le Morne TATCHI overlooking Lake Azuei through soil conservation activities with the view of correcting the gullies which currently exist, reforestation with indigenous vegetation; the development of the Botanical Garden as a center for the conservation of flora with species and genera in and ex situ; improvement in water supply and sanitation; promotion of rain water harvesting techniques; training in environmental education and strengthening of local communities in the development of soil conservation and erosion control techniques and developmental activities.

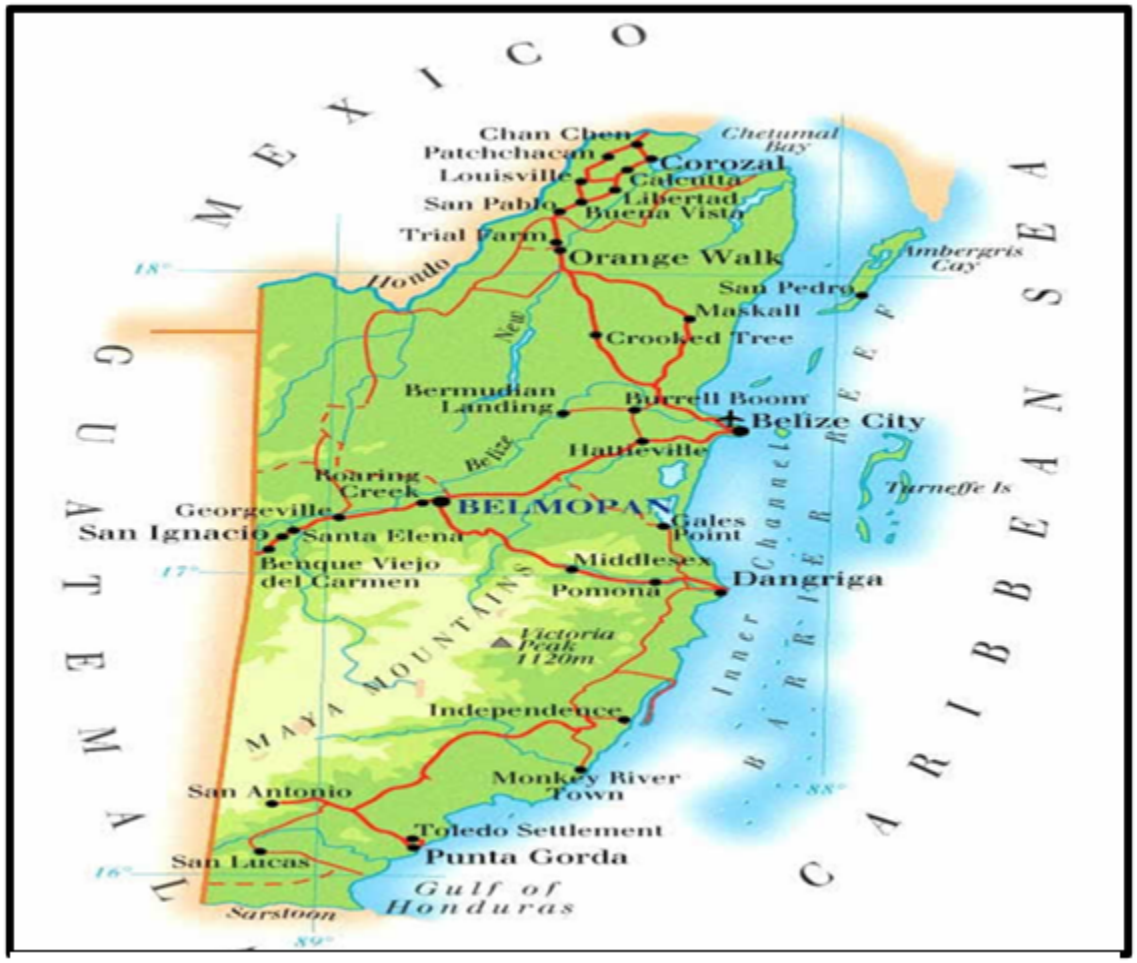


Map 8: The Rio Marion Watershed

78. The second National Implementation Site for Haiti is the Rio Marion Watershed, one of the basins that flow into the Three Bays National Park. This protected area is a reservoir of water from four watersheds. Indeed, all the activities undertaken upstream have a great impact on the protected area downstream. Referring to the various anthropic activities carried out at Marion's level, the threats, already in progress, are manifest. There is a very accelerated degradation in the coastal zone not only because of overfishing in the most accessible areas and overexploitation of mangroves, but also because of pollution from land-based sources (sedimentation, domestic and industrial waste)[13][13] and unwanted discharges from ships and boats)[14][14]. In addition, areas of high terrestrial plant diversity or potential for recovery continue to be threatened by the production of cooking fuel (coal), the growth of small- and large-scale agriculture and the spread of the species "Acacia farmesiana",[15][15] not forgetting saline extraction through the destruction of mangroves. The presence of excessive quantities of decayed sediments upstream in coastal waters hinders coral growths, which eventually lead to their extinction, reduces the habitat and diversity of marine fauna and upsets the balance of the environment. [16][16]

79. With respect to **Belize,** the project sites selected for Belize are the communities of **Libertad** and **Patchacan** situated in Northern Belize in the District of Corozal in the sugar belt. The livelihoods of most of persons living in these two communities are largely dependent on the cultivation of sugarcane which is where the lone sugar factory in Belize is located. Farmers who cultivate sugarcane in these communities are faced with the challenges of declining sugarcane yields and soil degradation which has resulted primarily from decades of sugarcane monoculture cropping system.


MEXICO
GUATEMALA
CARIBBEAN SEA
Chan Chen
Patchchacan
Louisville
San Pablo
Trial Farm
Corozal
Calcutta
Libertad
Buena Vista
Orange Walk
Chetumal Bay
Ambergris Cay
San Pedro
Maskall
Crooked Tree
Hondo
New
Bermudian Landing
Burrell Boom
Belize City
Belize
Hattieville
Roaring Creek
BELMOPAN
Georgeville
San Ignacio
Santa Elena
Benque Viejo del Carmen
Gales Point
Middlesex
Pomona
Dangriga
Turneffe Is
Inner Channel Reef
Barrier Reef
Victoria Peak 1120m
MAYA MOUNTAINS
Independence
Monkey River Town
San Antonio
Toledo Settlement
Punta Gorda
San Lucas
Gulf of Honduras
Sarstoon
18°
17°
16°
88°
89°

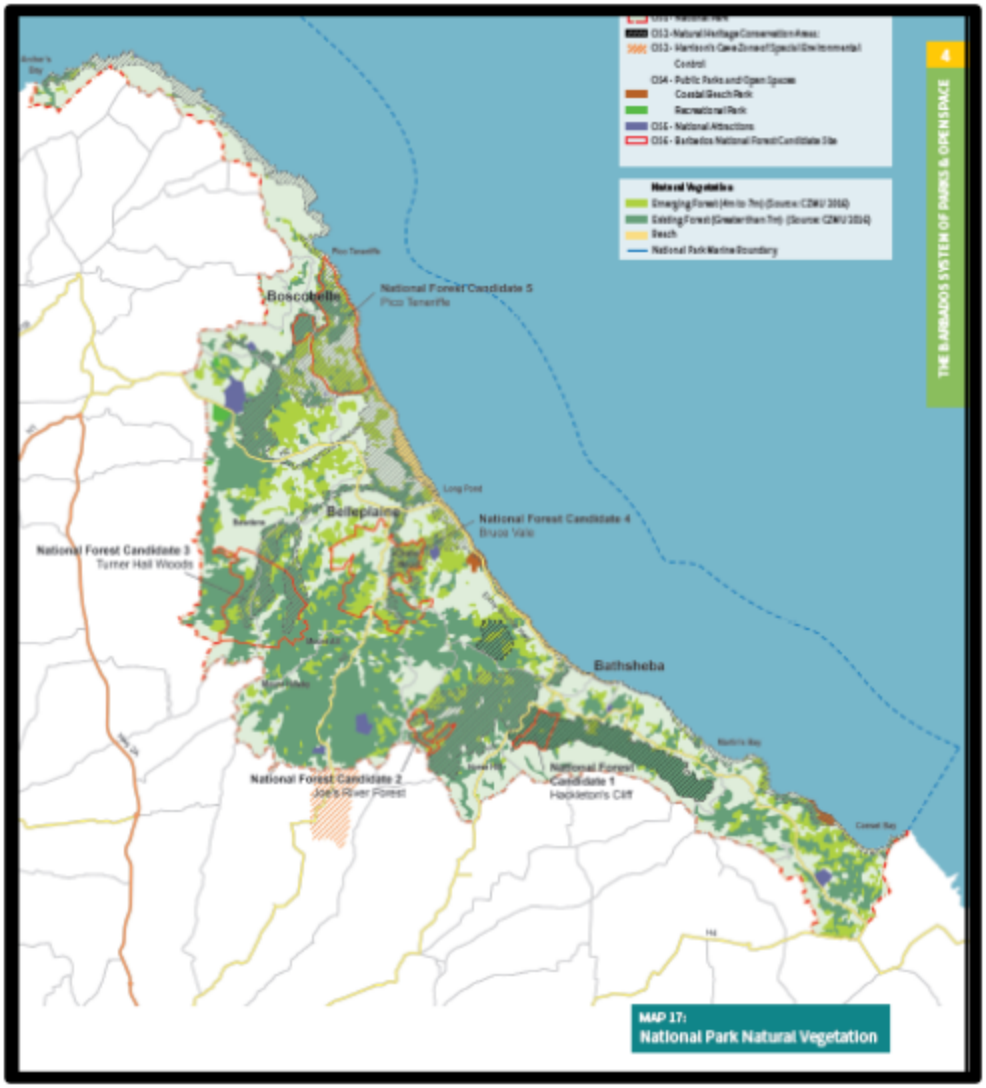


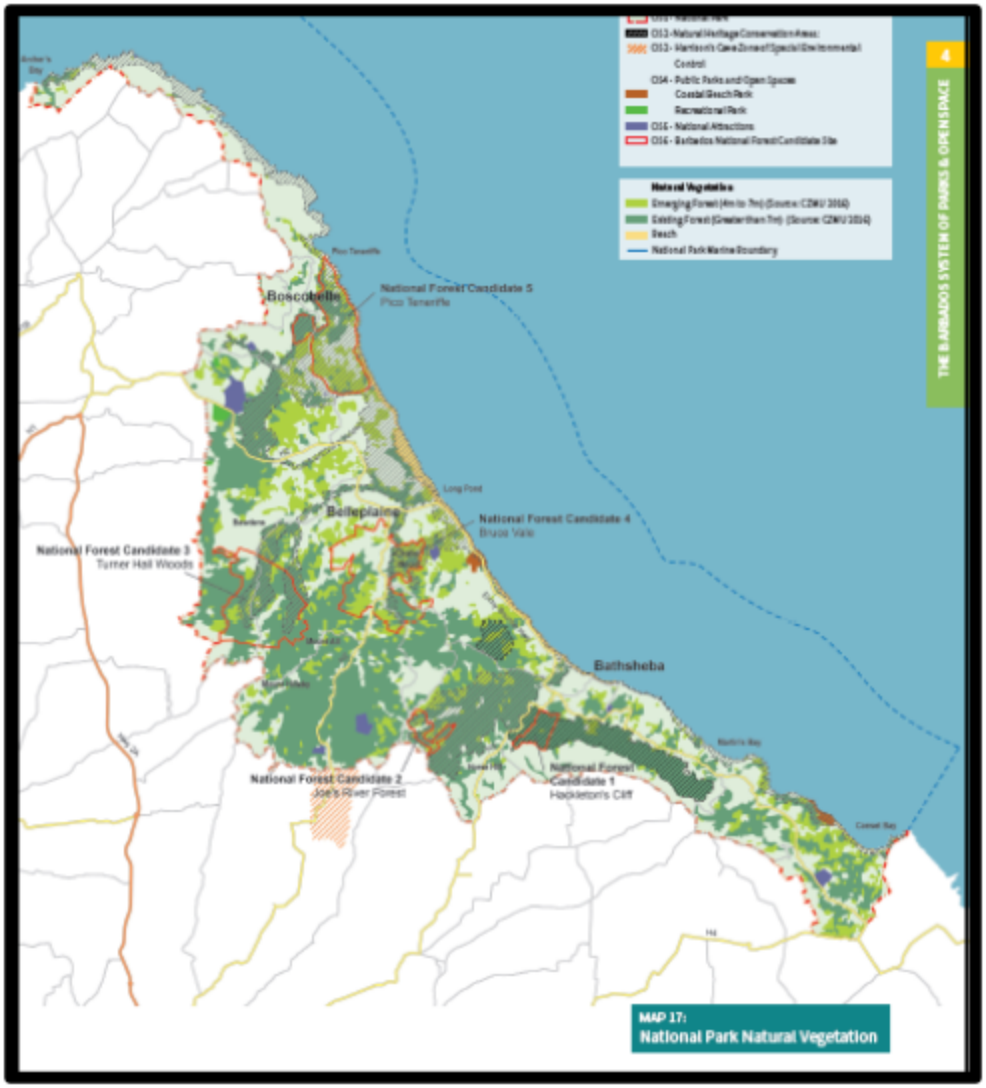
Map 9: Map of Belize Showing the Communities of Libertad and Patchacan situated in Northern Belize in the District of Corozal

80. The sugar industry is the main economic driver for communities in Northern Belize. It plays a vital socio-economic role for the communities located within the project sites and for other surrounding communities. 77% of sugarcane growers are small-scale farmers who deliver volumes of less than 200 tons of cane per cycle and with an estimated average yield of 44 t ha?1 (De Le?n and Gonz?lez 2011). These yields are much lower than the regional and world averages of 74.2 t ha?1 and 70.9 t ha?1 respectively.[17][17] This low productivity is a high-priority issue that must be addressed in order to make sugarcane production sustainable. According to Chi et. al.[18][18] the sugarcane industry in Belize inappropriate production technologies which lead to soil degradation, environmental deterioration, and nutritional imbalances, further compromising the sustainability of the industry [19][19]. Therefore, it is necessary to identify best farming practices for increasing soil fertility to improve yields and for minimizing negative impacts on the environment.[20][20] . One of the most relevant chemical

degradation processes of sugarcane soils in the context of climate change is the depletion of its organic matter pool due to the annual burning of the canes prior to harvesting. Reduced organic matter in sugarcane soils is also as a result of increased of respiration rates by large acreages tilled annually and the decline of below-ground plant biomass inputs. The over dependence of agrochemicals as a result of reduced soil fertility results in acidification of these soils on the large commercial estates. Small sugarcane farmers do not possess the financial means to purchase these inputs as required and their soils over time become less productive and marginalized. One of the most relevant chemical degradation processes of soils in the context of climate change is the depletion of its organic matter pool. Reduced in agricultural soils through the increase of respiration rates by tillage and the decline of below-ground plant biomass inputs. In addition to the aforementioned land degradation issues, the current European Union (EU) sugar agreement will soon end and with it, the preferential prices that Belize has enjoyed, leaving it facing stiff competition within a tough world market. Belize sugar is currently not competitive in a global context. In order for it to be so, it is estimated that productivity would need to be increased substantially. It is against this background that there exists the need to improve soil and crop management practices of small-farmers with the goal of sustainably improving soil quality, increasing sugar cane yields and in other instances introducing alternative cropping systems that will positively affect the livelihoods of persons within this community.

81. In view of the above alternative cropping systems (for the cultivation of both sugarcane and alternative livelihood crops produced using appropriate and relevant climate smart technologies) and sustainable soil management systems are being proposed under the project to improve soil quality and also effect livelihood improvements of farmers who currently solely depend on incomes from the sale of sugarcane. Farmers livelihoods are threatened because of the low sugarcane yields coupled with low international prices which currently prevail for sugar (an international traded commodity).


4
THE BARBADOS SYSTEM OF PARKS & OPEN SPACE
OS3 - Natural Heritage Conservation Areas
OS3 - Harrison's Cave Zone of Special Environmental Control
OS4 - Public Parks and Open Spaces
Coastal Beach Park
Recreational Park
OS5 - National Attractions
OS6 - Barbados National Forest Candidate Site
Natural Vegetation
Emerging Forest (4m to 7m) (Source: CZMU 2004)
Existing Forest (Greater than 7m) (Source: CZMU 2004)
Beach
National Park Marine Boundary
Boscobelle
Pico Tenerife
National Forest Candidate 5
Pico Tenerife
Belleplaine
Long Pond
National Forest Candidate 4
Bruce Vale
National Forest Candidate 3
Turner Hall Woods
Bathsheba
National Forest Candidate 2
Joe's River Forest
National Forest Candidate 1
Hackleton's Cliff
MAP 17:
National Park Natural Vegetation



Map 10: The National Park Area of Barbados

82. The National Implementation Sites for Barbados are located within the boundaries of the Barbados National Park. The National Park is the anchor of the Barbados System of Parks and Open Spaces, which has as its basis an IUCN Category 5 Protected Landscape/Seascape. The basis of an IUCN Category 5 designation is a protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value, and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.[21][21]

(3) The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project

83. SOILCARE is probably the first regional integrated intervention aimed at promoting sustainable land management within the overall context of LDN and climate change resilience in Caribbean SIDS. It therefore marks a fundamental departure from many of the previous GEF interventions in Caribbean SIDS on land degradation related issues, most of which have been single country interventions. Notwithstanding, it however draws heavily on the projects highlighted in the baseline, in particular, the outputs of the LDN Target Setting Process by incorporating some of the priority areas, so identified in that project, as Project Implementation Sites. Integral to SOILCARE is the consideration of a number of fundamental concepts and processes including, *inter alia*, sustainable soil management and in particular the collection and enhancement of information and data on Soil Carbon, the assessment of land degradation within the context of a landscape perspective; the advancement of climate resilience through different pathways including via climate smart agriculture and the testing, development and dissemination of environmentally and climate sensitive methods, approaches and technologies; the provision of training in climate resilient approaches at all levels, including farmers, community members; agriculture extension officers as well at the academic level. The project also seeks to make a significant contribution to enhancing the policy framework at both the national and regional levels by mainstreaming sustainable soil and land management as well as climate resilient measures in the agriculture sector. To this end, it recommends to the Caribbean Community and its Member States the enactment of mechanisms that support an enabling environment related to finance, for LDN to occur such; the reduction of degradation-associated subsidies (negative cost); enhance supporting measures restoration and rehabilitation degraded lands within the overall context of a landscape approach; climate resilient considerations agricultural credit schemes and other similar measures and measures to deter finance of degradation associated activities. Of the eight participating countries, only one, Antigua and Barbuda, will not have National Implementation Sites where specific activities will be undertaken. Antigua and Barbuda?s field based intervention will be undertaken only to support the soil survey being undertaken in Component 1. This was the choice taken by the Government of Antigua and Barbuda. An overview of the proposed alternative scenario follows;

Theory of Change

84. The Caribbean SIDS are characterized by challenged economic growth, ecologically fragile and narrow resource base, little resilience to natural disasters and the adverse impacts of climate change as well as degradation processes caused by unsustainable agriculture and forestry practices. In addition to the aforementioned, a large segment of the population of Caribbean SIDS livelihood is highly dependent on the natural resource base which is not always utilised in an efficient and sustainable manner.

85. Caribbean SIDS do not have the requisite financial resources to leverage funds for investment in SLM, SSM and climate-resilience building nor are there an adequate legal and institutional framework for sustainable management. Additionally, there is a paucity of national and regional soils information, technical capacity and coordination so as to improve decision making on SSM and SLM.

86. Based on the range of outputs from the project and the outcomes to be realised (Appendix Q) it is envisaged that the project will have the impact of increasing Caribbean SIDs Land Degradation Neutrality (LDN) and Climate Resilience in so doing enhance sustainable livelihood alternatives.

87. A number of assumptions have been made with respect to the project achieving its goals some of the assumptions include:

? Covid 19 pandemic would have abated to the point where the project consultants and implementing officers will not be restricted to move around and ensure that the project activities are implemented

? Continued commitment by policy makers, even if there are political changes at the regional and national levels, that the project will be rolled out as planned

? Weather conditions within the region will not adversely affect project implementation during the life of the project

? Based on the multi-country nature of the project coordination will be well executed through the project management system that has been developed for the project.

? International financial environment will allow for all of the grant funds and counterpart funding to be realised.

Project Components and expected outcomes

Component 1: Updating of Soil Information and Data as a Basis of Strengthening LDN and SLM Processes

88. A major barrier faced by the individual participating countries and the region in general in developing a practical and implementable LDN Strategy is the paucity of information on soils, including adequate soil carbon data. Comprehensive available soil data for the Caribbean is restricted to the 1950-70s soil surveys, with only a few countries having digitized this information. The digitized spatial data while satisfactory for delineation is not accompanied by georeferenced samples and as such the supporting analytical data cannot be readily used. The representativeness of the analytical data supporting geospatial distribution of soils is also outdated rendering it practically unusable. This has emerged as a significant limitation to national planning processes as well as international commitments to conventions and agreements. In the case of activities involving soil C mapping in the LAC region, which were organized by the Global Soil Partnership in preparing the global SOC map in 2017, global dataset and modelling were used in the Caribbean SIDS as well as very limited available national data. Similarly, the LDN-TSP in 2018-9 process also relied on Tier 1 global data to establish baseline changes in SOC. While higher measurement uncertainty was expected, countries expressed concern over data representativeness and the resultant maps, but very little alternative was available due to lack

of human and financial resources to compile data from grey literature, refine digital mapping and collect samples to fill gaps. Synergies which result from the National Focal Points for the UNCCD and GSP working together will be felt significantly at the national and local levels since duplication of effort will be minimized and a more focused attention placed on the issues confronting stakeholders. This in turn enhance decision making with respect to the use productive land resources and contribute to more effective sharing of information and find solutions to problems being experienced at the local and national levels in the participating countries. In addition, the information generated by this Component will be integrated into the various national planning frameworks (e.g. environmental and physical planning; agricultural planning, etc.), including the LDN planning and where necessary included into existing legislative frameworks. The institutional mechanism which has been built into the project to ensure that this takes place in a seamless manner is through the establishment of the Caribbean Soil Support Group for SSM/SLM, which will include both the GSP and UNCCD Focal Points from each of the participating countries.

89. This Component, led by the University of the West Indies, St. Augustine, Trinidad and Tobago and supported by the GSP, is intended to address these barriers. It will also contribute to providing the essential data required for the formulation and monitoring of National and Regional LDN strategies, underpinned by integrated landscape methods and approaches. It should be noted that the soil survey undertaken under this Component will also be done for the National Implementation Sites in Components 2, 3, and 4; hence these assessment could not be done during the PPG. Implemented regionally, in all of the participating countries, this Component will have one major Outcome and a number of specific Outputs.

90. **Outcome 1. 1. Caribbean countries use soil data to make informed decisions and contribute to regional and global soil and climate knowledge systems.** Caribbean countries generate and use Soils and Land Management Data, Information and Maps for Informed Decision Making for LDN and Sustainable, Resilient Land Use Systems in the Caribbean and Establishment of a Sub-regional Soil Support Group.

91. ***Output 1.1.1: Caribbean Soil Support Group for SSM/SLM established and collaborating, with the Latin American and Caribbean Soil Partnership (ASLAC)*****:** Currently the Focal Points for the UNCCD and the Global Soil Partnership (GSP) operate independently at the national level. One of the implications of the Decision by the COP/UNCCD to use LDN as a major vehicle for the attainment of SDG 15.3. is the need for a more integrated approach, at the national level, through greater cooperation and collaboration, between the Focal Points for the UNCCD and the Global Soil Partnership (GSP), respectively, on soil management, including the assessment of Soil Organic Carbon (SOC). To facilitate this enhanced cooperation and collaboration, during the PPG Phase a **Caribbean Soil Support Group** has been established comprising of UNCCD and GSP Focal Points of the participating countries, respectively as well as a limited number of targeted soil experts from Caribbean SIDS, thus enabling Caribbean SIDS to benefit from the scientific and technical knowledge of the region. This Group builds on the UNCCD and GSP National Focal Point System. The Group is chaired by the Senior Soil Expert from the University of the West Indies who has the responsibility for taking the lead on the execution of this Component with the countries.

92. At a meeting of the Central America, Mexico and Caribbean Regional Soil Partnership and the South American Regional Soil Partnership held in Quito, Ecuador 2019, a decision was made to merge the two regional partnerships into one grouping namely; the Latin American and Caribbean Regional Soil Partnership (ASLAC). ASLAC, as the overarching grouping, now consists of three sub-regional partnerships of which the English-speaking Caribbean is one. It is against this backdrop that the PISLM was selected to administratively support ASLAC-Caribbean and the Caribbean Soil Support

Group (CSSG) will have a critical role[22][22] in ensuring that the Caribbean?s viewpoints on the priorities established by this group are adequately reflected in ASLAC.

93. To facilitate the PISLM to carry out its functions and activities and also facilitate synergies between the activities being undertaken as part of the SOILCARE under Component 1 and the activities under the Global Soil Partnership, institutional support will be provided through SOILCARE.

94. ***Output 1.1.2 National soil data including soil organic carbon reviewed and updated supported by integrated field sampling, laboratory analysis and remote sensing in support of local, national and regional planning and international reporting:*** The focus of this Output will be three-fold; firstly, the updating of existing analytical data linked geospatially and secondly, assessment, data collection and analysis and digital mapping of soil quality, key degradation processes (such as erosion, salinity, loss of SOC and biodiversity, nutrient imbalance, pollution) and fertility indices and potential for SOC sequestration, as a basis for LDN implementation and in support of NDCs (mitigation). Secondly, this output will assist the participating countries in meeting their LDN Targets by providing the essential soil data including soil organic carbon necessary for reliable assessment and monitoring of their LDN targets on the ground and thirdly, provide accessibility to data and information which can easily be integrated into the participating countries physical, environmental and development planning processes as well as making these data and information resources accessible via the Caribbean Information System which will be established as an integral part of this project.

95. During the PPG Phase emphasis was placed on the collection of legacy data and information for each of the countries participating in this Component. To facilitate this, an Information Questionnaire was circulated as well as the compilation of all existing soil legacy data. This information provided the baseline information which was used to facilitate the development of the methodological framework for reviewing and updating soil data including soil organic carbon for the participating countries. The methodological framework is guided by a digital soil sampling strategy based on data-driven decisions. It will include:

96. **Step 1**: Involves the building of an initial soil data exploration and inventory of soil information for each of the participating countries. Country specific soil datasets were combined with multiple sources of soil-related environmental information (ancillary information) in a common Geographical Information System (GIS). These sources include environmental covariates to represent soil forming factors in gridded data formats that are required to generate Digital Soil Maps (DSM)?a reference framework for understanding soil distribution and the response of soils to global environmental change. One important objective of DSM is to inform future sampling strategies from the synthesis of environmental information available across the world. These sources are surrogates of the soil forming environment and they are: a) remote sensing, b) geomorphometry, c) gridded climatology and d) soil legacy maps and data.

97. **Step 2:** Using the Digital Soil Maps (DSM) as a basis, the next step, is to identify sampling sites representing the full environmental variability?the result of combining country-specific soil information with global soil-related datasets?of soil forming factors in each of the participating countries in a 4D space (latitude, longitude, soil depth and time). In determining the field sampling sites consideration will be given to the collection of representative samples from the National Intervention Project Sites in order to gain a better understanding of the soil quality in those areas and by extension, to facilitate the design better implementation strategies.

98. **Step 3: Field Sampling/Ground Truthing:** Field Sampling will be undertaken in each of the participating countries to verify the information capture in the DSM. Soil profiles will be sampled to a maximum depth of 1.5m separated vertically by the presence of horizons or layers and in the absence equivalent intervals. Standard soil sampling equipment will be used along with proven methods reported by Petersen and Calvin (1986). For each country a national soil sampling team would be formed to support the technical team from the UWI and GSP. The GSP focal point will lead the national soil sampling team.

99. **Step 4**: **Analysis of the Samples**: A key objective of Step 4 is to strengthen the soil analytical capability of the Caribbean, in particular of the participating countries. In this regard, a Network of Soil Analytical Capability will be established with the Soil Science Laboratory of the University of West Indies (UWI), St. Augustine, Trinidad and Tobago as the apex of this Network. Disturbed and undisturbed samples will be prepared in country, prior to shipping to the Soil Science Laboratory of UWI. Samples will be analyzed following standard methods for the following properties or part thereof, depending on the availability of resources[23][23] and country interest to address priority degradation problems. Consideration will be given to the measurement of a number of parameters, including, inter alia: pH; Electrical Conductivity (EC); Total Organic Carbon (TOC); Soil Organic Carbon (SOC); Total Kheldhal Nitrogen (TKN); Available P; Extractable K, Ca, Mg, Na, Al; Particle Size Distribution (PSD); Cation Exchange Capacity (CEC); Bulk Density (BD); Infiltration rate (IR); Water Holding Capacity (WHC); Extractable Fe, Cu, Zn, Mn, As, Pb, and Pesticides[24][24]

100. Sample sites will be geo-positioned to facilitate proper mapping through extrapolation and statistical analysis. These outputs would support a suitability analysis for various soil series for current and future land use. The land capability analysis would be restricted to agricultural land use with the aim of identifying and prescribing the most suitable land for food production.

101. **Step 5: Updated Soil Maps for the participating countries:** In addition to the updated soil maps, a critical output which must result from the various stages outlined above is information on the **minimum set of indicators** recommended for tracking progress towards LDN against a baseline. These are currently:

? **Soil organic carbon** denotes overall soil quality.[25][25] On seasonal to decadal time scales, carbon stocks of natural and managed systems may be explained largely by changes in plant biomass (?fast variable?) but, on longer time scales, soil organic carbon stocks (?slow variable?) become a more relevant indicator of the functioning of the system, its adaptive capacity and resilience to perturbations (e.g., floods, drought), and thus its capacity to provide ecosystem services in a sustainable manner over the long term.

? **Land cover and land cover change** has multiple applications for evaluating progress towards various SDG targets and gives a first indication of land degradation? and a first indication of a

reduction or increase in vegetation, habitat fragmentation and land conversion.[26][26] (Global Mechanism of the UNCCD 2016a).

? **Land productivity** points to long-term changes in the health and productive capacity of the land. The default indicator is monitoring changes in biomass through remote sensing of NDVI (net differentiated vegetation index) analysis and correcting for reflectance, invasive species etc.

102. These minimum set of indicators will be augmented according to country interest by a number of other national/regional indicators, that could be piloted in target landscapes as appropriate, namely: i) land productivity - assessing impacts of improved soil/land management practices on crop, livestock or forest productivity (using control plots to take into account farm inputs, climatic and other factors); ii) Climate change sensitivity maps (SDG 13); iii) Sustainable agricultural practices; (SDG 2.4); iv) Food and nutritional security (SDG1) and v) Biodiversity hotspots in terms of richness, threatened species, invasive species etc. (Aichi Targets).

103. In the case of information on land cover and land cover change and land productivity, existing, available information will be utilized.

104. ***Output 1.1.3. Caribbean Soil Laboratory Network (CARLAN) established based on the strengthening of national soil laboratories under the standards of GLOSOLAN***: A major focus of this Output will be an assessment of the soil analytical capability of the participating countries. This will enable a determination of the available analytical capability in the region to support the University of the West Indies in undertaking the assessments required under the project. Where sufficient capability exists, additional strengthening will be provided with the view of enhancing the quantity and quality of soil data (e.g. chemical, physical and biological parameters) and information collected and analysed in support of the project. In this regard, focus will be placed on data collection (generation), analysis, validation, reporting, monitoring and integration, as a means of strengthening the National LDNs which have and/or in the process of being developed. Generally, Soil laboratories and service providers will be strengthened in standard soil sampling and analysis through additional support from the Latin America network of soil laboratories (LATSOLAN) to support farmer?s knowledge of soil constraints and need for soil amendments.

105. ***Output 1.1.4. Caribbean Soil Information System established and integrated with Regional and Global Soil Information Systems (SISLAC and GLOSIS) and digital mapping capacity built:*** The participating countries do not possess soil information systems, although recent projects have allowed for collection of new data[27][27]. This complimentary data is useful input for developing an up-to-date and accessible national information system. Noting the cost and technical challenges associated with hosting and maintaining soil and land information systems, SOILCARE proposes a Sub-regional Approach aimed at sustainability. This will take the form of a **Caribbean Soil Information System** which will be **integrated with Regional and Global Soil Information Systems (SISLAC and GLOSIS).** The UWI will host the **Caribbean Soil Information System** since it possesses the requisite technical and physical capacity to do so. The Caribbean Soil Information System will have links to the Soil Information System for Latin America and the Caribbean (SISLAC) and the Global Soil Information System (GLOSIS). UWI currently has two locations that are capable of

housing the required servers for the databases and competence in software development to suit the needs of member countries.

106. Data generated from Output 1.1.2 will be input into the sub-regional database. Data will be quality checked for accuracy and consistency prior to uploading, with uploading access restricted to registered and verified country representatives. Once the data has been verified, further transfer to SISLAC will be facilitated by UWI. The sub-regional information system will be accessible (output) by all CARICOM members with opportunity for digital analysis and geo-statistics to aid in data use. An open source policy is advocated to allow greatest access and use of the data. Countries will be supported in their data analysis for national development planning or international responsibilities. Hosting the information system at the UWI also facilitates integration into teaching and research enabling sustainability. An Information Protocol will be signed between UWI, PISLM and participating countries on access to the data and information generated by the project. In SISLAC a particular accent is put on the property of the data. Each data can refer to the corresponding owner.

Component 2: Addressing the Drivers of Land Degradation Through the Rehabilitation of Land and Soil Degraded Areas; the Promotion of Integrated Landscape Management and Restoration and the Identification and Implementation of Livelihood Alternatives for Communities.

107. In the implementation of this Component, the project elements of the LDN conceptual framework related to ?achieving neutrality?[28][28] considered so that the cumulative effect of the interventions can be properly accounted towards the claimed global environmental benefits to be generated. The activities undertaken to support land and soil degraded areas will be done in tandem with the creation of livelihood options. Building on the results of the assessment of soil and land degradation and relevant data and maps produced in Component 1, multi-variable assessments (e.g. land potential, land condition, resilience, social, cultural and economic factors, including consideration of gender), of the project sites will be undertaken to inform the rehabilitation process. The results of assessment of the Land and Soil Degraded Areas will be presented in Integrated Land Management Intervention Plans which address the drivers of land degradation in the various sites as well as to facilitate their rehabilitation. Every effort will be made to ensure that land management aligns with the capability of the land to minimise the risk of future land degradation and help identify and prioritize appropriate land use practices.

108. The aims will be improving soil productivity; improving the ability of these systems to provide ecosystem services within landscapes more efficiently and the adoption of new and innovative approaches for protecting and restoring the natural ecosystems and soils on which they depend. In addressing the drivers of land degradation, particular attention will be paid to the incorporation of the relevant principles which underpin the implementation of Land Degradation Neutrality Transformative Projects and Programmes (LDN TPP). An integral part of the rehabilitation process will be the identification and implementation of alternative livelihood options for the communities as a means of easing the pressure being exerted on the natural resource base of the area. In this regard, the use of climate resilient technologies, methods and approaches will be promoted as part of the rehabilitation process. National Implementation Project Sites for this Component were selected by the participating countries taking into consideration the following criteria (i) priority areas identified through the LDN Target Setting process, (ii) multi-activities protected landscapes in which productive activities are being undertaken and contributing to significant land degradation, and (iii) land which been degraded

through unstainable economic activities (e.g. unsustainable agricultural practices, small scale mining activities etc.) and are in need of rehabilitation and or restoration. National Implementation project Sites for this Component are listed below. This component will benefit approximately 1600 people in the target areas:

? Choiseul in St. Lucia; this is a relatively dry area with relatively low rainfall which has suffered from poor agricultural practices overtime resulting in heavily eroded soils. The project will target approximately 2,000 hectares of degraded agricultural lands.

? Port Kaituma in Guyana, located in Region 1 which occur along the lower floodplains of the Waini, Aruka, Kaituma, Barima and Barama Rivers, extending up to 65km inland of the coast and abutting abruptly with soils of the crystalline shield uplands. The project will target approximately 4,000 hectares of degraded agricultural lands.

? Les Advocat is the site selected for Grenada under this component. This site forms part of the Grand Etang Forest Reserve on the South Eastern portion of Grenada in the parish of St. David?s. The area is well known for its ecosystem services as an upland watershed which provides a water production and distribution supply for NAWASA at the Mincore water treatment plant. The project will target approximately 2,000 hectares of forests.

? The interventions in Haiti will be concentrated at Lac Azeui of Fond Parisien in Noth Between Cornillon Grand Bois, outh Fond Verette. The project will target approximately 5,000 ha of forest lands.

? The National Park Area of Barbados where focus will be placed on identified degraded areas within the National Park Area. The project will target approximately 2,000 ha.

Outcome 2.1. Land and Soil Degraded Areas in Haiti, Guyana, St. Lucia; Grenada and Barbados are rehabilitated, ecosystem services restored and sustainable livelihoods built.

109. This outcome will focus on an Assessment of Land and Soil Degraded Areas and the formulation of an Intervention Plan to Address the Drivers of Land Degradation and Participatory Strategies for the Rehabilitation and Restoration of Degraded Landscapes to Productive Use and the Enhancement of Ecosystem Services. It should be noted that the assessments to be undertaken form an integral of the soil assessments which will be undertaken under Component 1. In this regard, detail information, particularly, on soil carbon will be collected for each National Project Implementation Sites where specific activities will be undertaken. This also applies to the National Implementation Sites in implementation (Output 2.1.1, 3,1,1 and 4,1,1). Based on the data collected in Component 1 on the National Project Intervention Sites, there might be a need for specific measures to be taken to improve soil quality as part of the overall package of intervention measures.

110. ***Output 2.1.1 Participatory strategies for rehabilitation and restoration and Intervention plans available and implemented based on the hot and bright spots identified in the land degradation assessment*:** An assessment of Land and Soil Degraded Areas will be undertaken for each target landscape drawing on available tools and experiences in the Caribbean. A number of methodologies for assessing land degradation will be considered, adapted and applied, as necessary, within an Integrated Landscape Management framework. Each of these sites will be assessed to determine their current land use, related drivers, pressures, status, impact and responses (DPSIR) for land degradation and the strategies which need to be implemented for achieving sustainable land management. For all of the sites a range of stakeholders will be involved in the participation and consultation processes as well as in the delivery of the outputs. These stakeholders will include, *inter alia*; members of the communities in which the sites are located; farmers, women?s groups, extension officers who will be trained to provide the technical advice required by the participating stakeholders and Non-Governmental Organisations where they exist.

111. For each of the sites Integrated Land Management Intervention Plans to Address the Drivers of Land Degradation and Participatory Strategies will be formulated as well as Participatory Strategies for Rehabilitation and Restoration through Integrated Landscape Management practices, incorporating, *inter alia* Analog and Agroforestry Systems. The principle drivers of land degradation in the project sites, include, *inter alia*, inappropriate agricultural practices, deforestation and unstainable mining practices and the use of the forest resources for energy generation. Since a significant portion of the destruction of vegetation cover in some of the Implementation Sites is due to the harvesting of the forest for the production of energy, in order to reduce the pressure on the resource base **alternative sources of energy** will be promoted (e.g. solar energy systems etc.). Opportunities aimed at contributing to the better management of soil and land resources will be identified, mainstreamed and integrated into the Participatory Strategies and implemented. For example, as a means of creating livelihood options for the participating communities, **community-private sector partnerships** will be promoted. The sustainable management practices impacts, to the extent practicable, will be quantified by the soil indicators described in the *Protocol for SSM assessment of the voluntary guidelines of sustainable soil management* [29][29](VGSSM) (AO, 2017)**.** In this regard, the quantification by soil indicators will be guided by the Sustainable Soil Management indicators which have been developed under this Protocol in order to accurately assess the effectiveness of implementation of selected SSM practices in varying circumstances, including different soil types, climate, food production systems and available means.[30][30] Implementation will be supported by Environmental and Forestry Department in the respective participating countries. These steps will be guided by taking into consideration the LDN TPP Checklist and national priorities.

112. ***Output 2.1.2. Community Propagation Centres established and/or upgraded to Facilitate the Provision of Plant Materials and Soil Amendments*:** Since people are an integral part of the landscapes under consideration and being cognizant of the main drivers of land degradation (e.g. in unsustainable agricultural and mining practices etc.) in the National Implementation Sites, part of the rehabilitation process will embrace more climate resilient technologies, methods and approaches (e. g. rain water harvesting). In this regard, Community Based Propagation Centres will be established and/or upgraded to provide the plant materials necessary to facilitate rehabilitation of the degraded land and soil areas at the project sites in close collaboration with participating communities and other stakeholders. A combination of indigenous plant species and tree crop production species (e.g. mangoes, avocadoes, breadfruit etc.) which can be used commercially and provide livelihood options will be propagated to support the rehabilitation process where appropriate. The Propagation Centres will be equipped in such a manner to facilitate Rain Water Harvesting (RWH) and will be co-managed

by the communities, including Community Based Organization (CBO), in which they are located, where appropriate.

113. ***Output 2.1.3. Integrated Landscape Management (ILM), including analog forest and agroforestry systems implemented in target areas in five participating States*****:** Land rehabilitation interventions (e.g. agro-forestry, indigenous vegetation species, improving soil conditions etc.) shall be implemented in the deforested and degraded areas, seeking not only to increase forest cover but to also enhance biodiversity richness and multiple ecosystem services, including the identification of and implementation of livelihood options for the participating communities. To this end, integrated land management approaches will be reviewed as a means for ensuring multi-sectoral collaboration and an inclusive multi-actor process for each target landscape and agreements developed for collaboration. In addition, adapted agroforestry systems and analog forest systems (FN)[31][31] will be explored and planned in a participatory manner so as to mimic natural forest structure and functions to the extent possible, enhancing habitat, food production and other products, pollinators and seed dispersal, as well as seasonality responses. The latter includes buffering seasonal dynamics (wet and dry) through providing shade, regulating carbon and hydrological cycles, influencing water availability in soil and access to plants/water stress and hence optimizing plant growth and decomposition, soil organic matter and carbon sequestration (in biomass and soil). The aim in the medium to long term is to restore healthy forested ecosystems that provide resilience to climate change through sustained biodiversity and ecosystem services as well as generating a range of socio-economic and environmental benefits.

114. One of the modalities which will be used in the rehabilitation of the damaged/degraded land resources, as well as for the implementation of Output 2.1.2 is ?Cash Based Incentives? (commonly referred to Cash-for Work) in which these tasks are done by the participating community itself. The principle is that people work and receive pay. Criteria will be established to help guide the selection of persons to be involved in the programme. Persons selected for participation in the programme must have some form of vulnerability such as women heading households; households with disabled and elderly persons and unemployed youth. This modality will be used as an incentive to encourage work on land management conservation activities as well as to stimulate economic activity in the targeted area and to build ownership of the rehabilitation process. The Cash Based Incentives will be coupled with training in conservation measures as a means of encouraging long term behavioural change, beyond the provision of cash. In terms of its operationalisation specific work targets will be assigned on a weekly basis and monitored by the National Project Units. This programme modality will be used carefully since it is expected that the Government will need to absorb the most productive persons after the project ends.

115. ***Output 2.1.4.–Cost-Benefit Analysis (goods and ecosystem services) of the restoration strategies are conducted, documented and shared as a basis for scaling out to other locations in participating States and to other SIDS***: An analysis of costs and benefits shall be done at the sites where rehabilitation and restoration practices are implemented, including an analysis of costs or investment (for implementation, maintenance, etc.), potential benefits from household use and trade of wood and non-wood forest products as well as a valuation of ecosystem services restored. A combination of relevant tools and approaches will be employed including, inter alia, FAO?s cost-benefit analysis of forestry interventions, and the IUCN?s Cost-Benefit Framework for Analyzing Forest Landscape Restoration Decisions, in order to estimate the value of the restoration systems and resulting ecosystem goods and services in the landscape. In addition, validated restoration strategies based on cost benefit analysis for different farmer context will be documented and shared through FAO?s regional information communication system. Information resulting from these activities will be summarized and made available to farmers participating in the project and to other farmers, nationally

and regionally. A number of communication channels will be used to accomplished this including, inter alia; extension units within Ministries of Agriculture and Environment, the Caribbean Land-Soil Outlook and as part of the Regional SLM and LDN Public Education and Awareness Initiative, both of which are integral elements of this project. The summarized information will also be integrated in the various elements of the proposed Knowledge Hub so they can reach a wide as possible audience.

Component 3: Resilience Building to Land Degradation, Natural Disasters and Climate Change through Climate Smart Agriculture and Drought Risk Management

116. It is generally accepted that an increase in climatic variability will have a profound impact on agricultural production. In this regard, extreme events such as hurricanes, tropical storms, floods and droughts, are likely to become more frequent and more severe, with serious implications for both crop and livestock production. Already in the Caribbean, there is evidence that the number of hot days in the year has been rising and the number of cool days declining and climate models suggest that there will be drier wet seasons and longer dry seasons in future.[32][32] Adaptation to short-term climatic variability and long-term climate change will become a necessity for farmers in Caribbean SIDS while at the same time retaining production to sustain social and economic wellbeing. To assist farmers in addressing this reality, SOILCARE will use Climate Smart Agriculture to build climate resilience within the regional agricultural sector. This will be done firstly, through supporting a number of Demonstration Model Climate-Smart Agriculture Farms, from a selected number of participating countries. The information and data derived therefrom will then be used in mainstreaming climate resilience, regionally, by building institutional capacity and in support of policy development and application at the regional and national levels. This component will in the main, target small farmers. However, climate resilience measures and practices will be mainstreamed into all CARICOM regional policy frameworks, that are applicable to its Member States.

117. The nature of the Demonstration Model Farms will differ from country to country depending on the specific local circumstances. A key aspect of this component will be the provision of training, particularly, in-field training for small farmers as a means of transferring tools, and methods and approaches for implementing climate-smart agriculture. The use of climate smart technologies and processes on these Demonstration Model Farms to reduce the vulnerability of agriculture can then be scaled and replicated across the region. For each of the Demonstration Model Climate Smart Agriculture Farms a Strategic and Marketing Plan will be prepared since another strategic objective of these farms is to increase income and strengthen farmers? livelihoods and to attract and keep youth in this field of endeavour. A key guiding principle for the design of the Strategic and Marketing Plan will be the establishment of direct linkages with value-adding facilities, government services (e.g. school feeding programmes etc.) and other economic sectors (e.g. tourism sector etc.), as an incentive to attract the farmers' participation and endorsement of the programme.

118. In selecting the Sites for the Demonstration Model Farms, the following criteria, were used, to guide their selection:

? Land which is currently not under production and/or under utilised (these are productive lands which are currently not in production) and/or degraded;

? Land under different ownership patterns (e.g. communal ownership, crown land, private ownership);

? Land under different production systems and which have the potential for generating value added livelihood options

? Offers the potential for the involvement of unemployed youth.

119. Based on these criteria, the following sites were selected. The project is expected to benefit approximately 2,150 people (900 women) through this component.

? In the case of Guyana, Climate Smart Demonstration Agriculture Model Farms will be implemented in Region 10 ? the Intermediate Savannahs of North-East Guyana which lies immediately to the South of the coastal plain, extending both east and west of the Berbice River in a South-Westerly direction, and adjoin the upland rain forest regions; and Region 5 ? the Mahaica Mahaicony Abary area which extends east of the Mahaica River to the west bank of the Berbice River. Results from the model farm are expected to upscaled to 4,000 ha in Guyana.

? In Grenada, the site selected under this Component is the? Chambord/Rose Hill Area? on the main island of Grenada. This is one of the Land Degradation Hot Spots identified. This area is located in the River Sallee watershed in the east of the parish of St. Patrick. The area is dominated by flat lands which are bordered by gently sloping lands. The total land area is over 100 acres. The farm sizes range from 0.5 and 3 acres. Twenty-five farmers and by extension their families depend on the area for their livelihoods. Results from the model farm are expected to upscaled to 3,000 ha in Grenada.

? In St. Lucia the Demonstration Model Farm will be located in Bois Den Jacmel an intensely farmed agricultural area where extensive land degradation is occurring aided by bad agricultural practices**.** Results from the model farm are expected to upscaled to 3,000 ha in St Lucia.

? In the case of Haiti, the Model Farm will be located in Rio Marion Watershed (target area: 7,000 ha).

? In the case of Barbados, the Demonstration Model Farm will focus on the Nature Fun Ranch located within the National Park at Bruce Vale, St. Andrew.[33][33] Results from the model farm are expected to upscaled to 3,000 ha in Barbados.

3.1. Soil productivity restored through Climate Smart Agriculture Model Farms established on selected landscapes in Guyana, St. Lucia, Haiti, Grenada, and Barbados and applied regionally: Though Climate Smart Agriculture is not entirely new to Caribbean SIDS, it is still not as widespread and mainstreamed as it should be. A review will therefore be undertaken of the known examples in the region where Climate Smart Agriculture has been employed and the lessons learnt applied to this project. In establishing the Climate Smart Agriculture Model Farms care will be taken that they are designed to address the three main objectives namely, sustainably increasing agricultural productivity and resulting incomes through improved sustainable production approaches; adapting and building resilience to climate change by reducing vulnerability to climate-related risks and shocks such as drought, pests, diseases as well as making available more climate resilient crop varieties; and reduced emissions by pursuing lower emissions for each kcal of food produced as well as avoiding deforestation from agriculture. Other key aspects which will be put in place to support the Climate Smart Agriculture Model Farms will include; developing a context specific marketing strategy to assist farmers identify markets for increased volumes of produce anticipated from increased levels of productivity. In addition, the progress of the Model Farms with respect to their implementation and use of climate smart approaches will be monitored and documented accordingly. The Climate Smart Farms will be established being cognizant of the broader context of the respective landscapes in which they are located. The regional adaptation element of this Output will be reflected in regional policy and institutional changes, with the view of integrating climate resilience as a standard practice in agricultural planning, policy development and also at the operational level, as the basis for mainstreaming. Previous to the project, there was a lack of regional and relevant specific climate resilient data, on which to plan. With SOILCARE and the generation of climate resilient related data and approaches; regional agriculture will transformed to include climate resilience.

Output 3.1.1: Climate Change Implications Assessed and Validated at the farm and landscape levels and the Results used and promoted to support climate resilient and viable/ productive farming systems and value chain integration at the regional level. Each of the areas selected for the model farms will be subjected to a Land Capability Analysis to understand underlying constraints, assess key land degradation processes (types, severity, trends) and identify main climate risks in the target farms and farming systems. In addressing climate risks, a number of issues will be considered; including, *inter alia*: How will the project?s objectives or outputs be affected by climate risks over the period 2020 to 2030, and what measures will be needed to mainstream specific action aimed at building climate resilience as a means of minimizing those impacts? What measures and climate resilience practices must be implemented to address the impacts of climate change? What technical and institutional capacity, and information, will be needed by the various stakeholders to address climate risks and mainstream climate resilience enhancement measures? The answer to these questions will form the basis for a systematic assessment of climate risks and strategies for the mainstreaming of climate resilience measures into the farming systems of the participating countries and by extension, regionally.

120. Parameters which will be used for the land capability classification include, inter alia, slope; depth of soils and other limiting factors (e.g. stoniness, wetness, gully dissection, frequent flooding, etc.). For identifying best SLM and CSA practices to address identified constraints and risks at farm

and wider land use /farming system level, a variety of assessment methods will be considered for use, including, inter alia, the tools for participatory selection of best practices, questionnaires for assessing technologies and approaches (QT-QA) (in the field with on-line entry into a country/global database) and the WOCAT platform for sharing of SLM best practices-the UNCCD preferred SLM best practices database for knowledge sharing. Most appropriate SLM **and CSA** practices will be selected and adapted for different model farms and opportunities for value addition identified to support more resilient, **productive and viable** farming systems.

***Output 3.1.2: Climate Resilience Measures Integrated into Model Farms and the Information Gathered Use to Form the Basis of the Regional Guidelines which will Guide Farmers in Transitioning to Climate Smart Agriculture Production at the Regional Level**:* Though there is growing consensus in the Caribbean about the benefits to be derived from the climate smart agricultural practices; operationally, there are not as yet, widespread in the region. More practical on the ground examples are needed as well as the more systematic training of farmers in climate smart agricultural approaches, methods and technologies. In addition, based on practical demonstration work in the field, there is a **need for the formulation of Regional Guidelines** which farmers could be guided by to make a transition to embracing climate smart agriculture farming as a norm. This is particularly timely since the COVID-19 crisis has underscored the need for the region to focus more intensely on addressing food security issues.

121. Demonstration farms have proven to be smart investments in helping to accelerate the testing and adoption of game-changing innovations and climate resilient practices. As such, they will be used to introduce farmers to new ways of doing things including, *inter alia*, the application of climate resilient agricultural practices and technologies as well as providing the information and data necessary **for the formulation of Regional Guidelines on Climate Smart Agriculture for Caribbean SIDS.** In establishing the Climate Smart Model Farms a number of specific activities will be undertaken, including, inter alia, the promotion and **expansion of climate-resilient agriculture** to include the increased production of targeted organic inputs and greenhouse production; **introduction of resilience of crop systems to potential climatic shocks** through increasing access to new, stress-tolerant crop varieties and/or more nutritious staple crop foods and the **promotion of innovative technologies** to increase crop value, reduce post-harvest losses, improve food safety and enhance the value-added potential of the agricultural products produced. Emphasis will also be placed on a range of conservation techniques and approaches, including, inter alia, the implementation of soil conservation practices; composting; multi-cropping; agro-ecological and organic approaches; integrated pest management (to reduce pesticide use); low-carbon practices; use of renewable energy sources. Allowance will also be made for the provision of basic equipment and materials for farmers such as water efficient irrigation equipment, low-energy tools and machinery, climate resilient storage facilities and specially designed greenhouses. In order to transfer the knowledge (e.g. data and information etc.) emanating from the Model Farms will be used in capacity building of Extension Officers and Extension Unit in the respective participating countries, to mainstream climate resilient agriculture. It will also be integrated into regional and national agricultural planning processes, thus ensuring that climate resilience is mainstreamed.. A key element in this regard, will be the Strengthening and Upgrading of the Agriculture Extension Units of countries participating in this activity. The end result of this will be an increase in capacity and capability of Extension Officers to enable them to provide the necessary advice and guidance to assist farmers in mainstreaming climate-resilient agricultural practices.

122. ***Output 3.1.3: Climate Smart Agricultural-baseline and marketing strategy designed and applied, and Legal Agreements established as a Basis for Scaling Out Successes, under a gender approach*:** Since one of the goals of climate smart agriculture is to climate proof the agriculture sector

through the building of climate resilience while at the same time ensuring sustainability of livelihood and the minimization of poverty, it is essential that the increase production resulting from smart investments reach the market in a timely and effective manner**.** To achieve this, an essential and necessary aspect of the promotion of climate smart agriculture must include marketing. To facilitate this, a Strategic and Marketing Strategy for each of the Climate Smart Farms will be undertaken to ensure that commodities produced by the Farms have viable markets. The main elements of each Plan will be synthesized and included in the **Regional Guidelines of Climate Smart Agriculture for Caribbean SIDS**. Activities which will be undertaken in developing the Marketing Strategy, include, *inter alia*, market analysis to determine which crops/products have the most commercial potential and adaptable to the changing climate, who are the potential buyers of the commodities, how large is the market? Price points and value-added opportunities etc. A sustainable and climate resilient supply chain with regard to the efficient production and supply of products from the Model Farms to the consumers to meet consumers' requirements reliably in terms of quantity, quality and price is vital for their success and the contribution they will make to LDN in the participating countries. Linkages will be built with existing markets such as; agri-processors, the tourism sector, restaurants and caterers including those associated with state funded catering services such as School Feeding Progammes, hospitals and other state institutions and local commercial food distribution supermarkets to provide viable opportunities for produce emanating from these Model Farms. Since women play critical roles in agricultural supply chains from production through to sales and utilization, specific focus will be placed in specifically targeting and addressing the role of women along the value/supply chain for each of the Climate Smart Model Farms. To ensure continuity during the project, participating farmers will be required to sign Agreement re: their commitment to participate in the project throughout its duration.

123. ***Output 3.1.4. Baselines, indicators and methods for the implementation of Climate Smart Model Farmland and Landscapes established using the High Nature Value Index (HNVI):*** In order to monitor the progress made key indicators which will be monitored are the extent to which climate resilient crops and the assimilation and use by farmers of new climate resilient techniques have been employed in the Climate Smart Model Farms. To monitor these and other parameters the High Nature Value Farming Index (HNVI) will be used. The collection of baseline data from the commencement of the Model Farms will be necessary to determine how eco-friendly/sustainable the current farming practices are; after which the HNVI will be applied at prescribed times throughout the Model Farm?s life cycle. The HNVI involves interviewing farmers using the HNVI questionnaire designed to provide information on farm characteristics and practices employed on different farms. The information gathered from the questionnaire will be fed into a computer programme that uses a set of established criteria to derive an HNVI index which quantitatively describes how sustainable or ?eco-friendly? a farm is and identifies specific areas for improvement that will increase the sustainability of the farm. Once the baseline is established, the HNVI will be applied on an annual basis throughout the life of the project to monitor progress being achieved with respect to the implementation of farming practices that will improve farm productivity and profitability and help farmers adapt to and mitigate climate change. The staff of the extension departments in the respective countries will be trained to use and gather the data required for analysis and formulation of recommendation by the HNVI consultant. The data generated will be computerised and form and integral part of the HNVI Monitoring Programme for the Climate Smart Model Farms. The results of the HNVI monitoring programme will help inform the development of Regional Guidelines for Climate Smart Agriculture for Caribbean SIDS and SIDS, in general. The experience gained from using the HNVI will enabled its refining as a tool to be used regionally to determine how to describe quantitatively how eco-friendly, sustainable and climate resilient a farm is and specific areas where improvement toward increasing sustainability are climate resilience.

124. **Component 4: Enhancement of Food Systems and Alternative Livelihoods through the promotion of innovations in agriculture[34][34] and livestock production systems and Mobilisation of the Private Sector in Support of LDN Special Climate Change Fund (SCCF):** The overriding objective of this component is to enhance food systems by embedding within the landscape in a manner that creates livelihood options for communities; improving food production without causing environmental harm; improving soil management and soil organic content; increasing vegetation cover and the minimisation of the use of agro-chemicals as well as attract private sector investment in SLM. The agricultural production systems targeted under this Component, in multiple countries, will be designed to generate multiple economic and social benefits.

? In Belize project intervention actions will be concentrated in the northern districts of Belize, often referred to as the Northern Sugar Belt of Belize. Focus will be placed on the restoration of arable land (degraded overtime by inappropriate agricultural practices on sugarcane lands) and the enhancement of ecosystem services and livelihood options for dependent communities. Project sites will be concentrated in Libertad and Patchacan which are sugarcane growing areas characterised by declining yields and degraded soils as a consequence of years of monoculture cropping systems.

? In St. Lucia the activities under this component will be undertaken in Cendre de FEU/Sarot Bexon, an agricultural area consisting primarily of abandoned banana farms in which farmers are trying to identify alternative crops to sustain their livelihoods. The focus of this intervention is to work with the farmers in the development of alternative crops as a means of sustaining their livelihood. Crops identified by local farmers, include, inter alia: tree crops such as cocoa; cut flowers and short-term crops such as mushroom.

? In Carriacou focus will placed on addressing the challenges of land degradation - soil erosion and soil fertility decline due to overgrazing and poor pasture management. Interventions will be focused on improving pasture management for year-round availability of high-quality forage through the installation of ten (15) Rain Water Harvesting Systems and establishment of ten (10) enclosed paddock systems integrated with RWH and irrigation systems.

? In the case of Jamaica activities will focus on the agro-economic zone at the Holland Estate, a Government owned property, located in the west central section of the parish of St. Elizabeth (a food basket Parish) which was previously used over decades for sugar cane cultivation and the grazing of cattle. Farmers have been allotted plots for the cultivation of a variety of crops. However, laboratory analysis conducted by the Agricultural Land Management Division has indicated that the soil in this former sugarcane estate has been degraded in ways which include; low nitrogen and organic content, acidification, soil erosion and soil compaction.

? In Barbados the project interventions will be concentrated in the communities of Bawdens, Turners Hall and Codington all located in the parish of St. Andrew in the Scotland District Barbados. These communities are engaged in and are promoting organic food production.

125. Overall, approximately 20,000 ha will be targeted under this Component for the establishment of Adapted Land Use/ Food Production Systems creating Alternative Livelihood Options using innovative technologies and approaches with private sector. The acreage targeted per participating country is as follows: Barbados: 1,500 hectares; Belize: 8,000 hectares; St Lucia: 1, 500 hectares; Grenada: 2,000 hectares and Jamaica: 7,000 hectares.

126. **Outcome 4.1. Food production systems and alternative livelihood options implemented with innovative technologies and private sector support are more resilient and adapted to climate change in Belize, St. Lucia, Carricou-Grenada, Jamaica and Barbados:** A starting point in the implementation of this Outcome will be an assessment of the Land Capability of the Selected Sites. In this regard, all of the sites identified will be assessed to determine their capability before specific interventions are undertaken. This will enable the best combination of corrective actions to be taken. A major result from this Outcome, will be an improved land capability of targeted food and livelihood systems.

127. ***Output 4.1.1: Land use, food and livelihood systems assessed as a basis for identifying alternative options and innovations[35]*** [35] ***and setting a baseline for monitoring as a Basis for Developing Resilient Food Production Systems and Alternative Livelihood Option*****s:** The focus of this intervention will be on productive lands that are under considerable stresses and threat from a variety of sources, be it, inappropriate and unstainable farming practices, destruction resulting from extreme events, over exploitation from decades of use, chemical contamination, and/or abandonment. Emphasis will be placed on embedding these productive land/production systems into the landscapes in the respective participating countries that enhances the provision of ecosystem services including the restoration of soils and natural ecosystems. To increase one?s understanding of the state of the resources a review and assessment of all available data (e.g. demography, employment, land sizes, cropping patterns, types of livestock farming as well as the maps showing the geographical areas with delineation of important administrative boundaries) of the targeted areas will be undertaken and used as the basis for the development of Options for the development or identification of alternative Resilient Food Production Systems and Alternative Livelihood. The results of which are presented in Options Action Plans which shared with and implemented by the participating stakeholders.

128. The review and assessment of reports and studies relating to livelihoods of the project areas such as by international and national agencies and NGOs will be undertaken. UN agencies may also have pertinent livelihood information, which will be used in helping to develop the baseline. They include the United Nations Development Programme (UNDP), World Food Programme (WFP), United Nations Children?s Fund, UNHABITAT, United Nations High Commissioner for Refugees, UNOSAT, and others. Additional data or gaps will be addressed through structured interviews conducted by trained, and experienced, field assessors. A standardized instrument will be prepared and used to direct the structured interviews. In the case of Carriacou focus will place on the improvement of the pasturage of small farmers to enhance production of small ruminants. This will be accompanied by a value chain analysis as well as opportunities for the regionalization of this livestock production system and reflected in a Report and Action Plan.

129. ***Output 4.1.2. Financial Options for Enhancing SSM and SLM Including Opportunities for Private Sector Collaboration for Potential Financing identified****:* Access to finance and technical assistance by Small and medium-sized enterprises (SMEs) in the Agricultural Sector is a major constraint. The growth of private sector funds such as the Moringa, & Green, and the LDN fund which invest in profit-generating sustainable land management and restoration projects provide possible sources of financing LD projects. An assessment of existing financing mechanisms (public-private, private, innovative) will be done. An integral part of the project, therefore, will be the design of bankable projects which could be considered by these private funds for financing selected initiatives. Resources will, therefore, be allocated to enable the PISLM to finance the development of a proposal aimed at developing LD investment projects for possible financing by these Funds. In addition, the successful implementation of the Regional LDN Strategy will require private sector support and investment. It is therefore critical that a strategically focus programme be instituted to build linkages and enhance cooperation with the private sector. In this regard, linkages will be built with the private sector, in particular with the banking system and incentives put in place to encourage more investment to be directed to sustainable land management. Consultations will be facilitated between the participating Governments and the banking system to put schemes in place to target, support and attract youth to get involved in sustainable climate resilient agriculture as a post COVID-19 strategy, given the growing concerns and increase focus being currently directed to enhance the Region?s food security. In addition, once the proposed SIDS LDN Transformation Funding Mechanism is operationalized, investments in supporting the Region?s increasing relaisation to enhance its food security capacity will one of its major areas of focus.

130. ***Output 4.1.3 Promotion of Innovations in Agriculture Systems, , considering a gender approach*****:** The contribution of agriculture to local and national economies, food security and sustainable livelihoods, requires successful and sustainable adaptation supported by appropriate technologies. It is generally accepted that technologies in agriculture enhance resilience to climate change and can offer co-benefits of adaptation and mitigation.[36][36] One of the major constraints confronting the use of the region?s land resources, particularly, for agriculture is the slow pace at which innovation takes place as well as the efficient and effective manner is the widespread use of environmentally sound climate resilient technologies are employed. With the advent of Climate Change the need for such technologies, in particular new adaptation technologies and the training of farmers in these technologies have become even more critical. Recognising these as major gaps, in the context of climate adaptation, a critical need exists for the design and implementation of climate resilient food production systems by carrying out regional capacity building activities such as funding research on new adaptation technologies; the results of which will be applied to this and other regional and national projects as well as providing a platform for facilitating regional knowledge sharing. The knowledge and experience gained will be transferred to the participating countries and mainstreamed to enhance livelihood options and the identification of financing to implement them. To facilitate this, a PISLM/SOILCARE Regional Research, Advisory and Capacity Building (RAC) Facility on New Adaptation Technologies will be established to support various aspects of the implementation of the project, with a focus on building climate smart and climate resilient agricultural systems as well as testing new adaptation technologies or practices that can inform SLM projects in Caribbean. Given the regional structure of the University of the West Indies, the possibility exists for subsidiary Facilities to be established other properties owned by the specific Campuses (e.g. Cave Hill in the case of Barbados[37][37] etc.). In terms of climate change adaptation, the Facility will also be used to conduct regional trainings on climate change adaptation, including linkages to agriculture; developing regional research/advice about how new adaptation technologies or practices that can inform SLM projects; supporting regional knowledge sharing and exchange on adaptation; and work with regional institutions to mainstream adaptation in SLM and agricultural policies and plans; Regional climate modeling/projections that can feed into or inform SLM in the Caribbean.

131. A critical aspect of the establishment of the PISLM/SOILCARE RAC Facility on New Adaptation Technologies will be the undertaking of Soils and Sustainable Land Management Technology Needs Assessments (SSLM-TNAs), of the participating countries which identify, prioritise and highlight technology needs, and the preparation of Technology Action Plans (TAPs). The TAPs are developed on the basis of TNAs to address specific barriers, and identify targets, strategies, budgets and responsible stakeholders for prioritised technologies, in the participating countries. In addition, the PISLM/SOILCARE RAC Facility on New Adaptation Technologies will play an important role in providing the training requirements of SOILCARE Phase 1, in collaboration with the Universities of Guyana and Belize and other training institutes and entities such as Foundation for Research Innovation Enterprise Entrepreneurship Training and Development in the Organisation of Eastern Caribbean States (OECS)[38][38] (FRIEETAD). The training will employ a range of training methods, including, field training, in support of the capacity requirements of the SOILCARE Phase 1

132. To facilitate the establishment of the PISLM/SOILCARE RAC Facility on New Adaptation Technologies, the University of the West Indies, St. Augustine, Trinidad and Tobago has allocated 25 acres of its farm, to be used for this purpose. In the execution of this activity the University of the West Indies will involve other University in the participating countries, namely the Universities of Guyana and Belize. To facilitate the implementation of this initiative, a portion of the resources leverage from the SCCF contribution will be used as seed resources to facilitate the development of regional research/advice about how new adaptation technologies or practices that can inform SLM projects in Caribbean SIDS and by extension in other Small Island developing States (SIDS).

133. **Component 5: Mainstreaming SLM and Sustainable Soil Management (SSM), Strengthening Knowledge Management, Enhanced Training and Capacity Development, the Building of Financial Capability to Implement SLM, the Regional LDN Strategy and Monitoring and Evaluation**: A key dimension of the implementing a strategy in Caribbean SIDS in support of LDN will be mainstreaming of SLM and Sustainable Soil Management into National and Regional Policy and Legislative Frameworks with the view of strengthening land and agricultural-related policies, programmes, land use planning processes and financing strategies and mechanisms at all levels as well as improving and enhancing the use of productive lands. Complimentary to this, will also be ensuring that this is done in a climate sensitive manner, in particular through the mainstreaming adaptation into regional and sub- regional policies and strategies.[39][39] To achieve this will require investments in a number of areas, including, *inter alia*, the enhancement of human capital and delivery systems managing productive landscapes (e.g. food systems etc.); information knowledge systems with the view of providing and sharing timely and early warning information to stakeholders highlighting early signs where a combination of environmental risks are contributing to fragility and conflict vulnerability to promote preventive or remedial actions as appropriate and the establishment of mechanisms for SIDS-SIDS Cooperation to facilitate the free flow and exchange of expertise among the participating countries where it is most required at a particular point in time.

134. To facilitate this, seed resources programmed from the Global LD set-aside funds ($228,000 approx.) will be used to support (i) the establishment of Caribbean SIDS SOILCARE Knowledge Management Hub, (ii) the preparation and development of the Concept of the Caribbean Land-Soil Outlook, (iii) Institutionalisation of Training on SLM and SSM to ensure the region has the capability to address SLM and Sustainable Soil Management (SSM) Issues, (iv) support the design and

implementation of SLM and SSM mainstreaming and scaling out strategies to integrate SLM and SSM into key decision-making processes including policies, land use planning processes, and financing mechanisms at national, regional and international, linking it to regional levels; (v) Enhancement of Policy Dialogue between the PISLM/SOILCARE and the Caribbean Community (CARICOM) and integration of SLM and SSM in Regional Policy Instruments and facilitating Approval by the Conference of the Heads of Government thus giving them legal effect in the participating countries (e.g. The Community Environmental Policy and Natural Resources Policy Framework etc.).

135. **Outcome 5.1. Regional Institutional Capacity Development and Training Programme Established:** An important activity which will be undertaken as part of SOILCARE, Phase I, is regional capacity enhancement in Sustainable Soil Management (SSM) and Sustainable Land Management (SLM). In this regard, capacity will be built in a number of areas relevant to sustainable soil and land management, including, inter alia: collection of soil samples and their analyses; the training of Extension Officers (in agri-related areas supportive to the project?s activities inclusive of Climate Smart Agriculture methods and approaches); farmers, field and laboratory technicians and soil scientists (at the academic level). In terms of climate change adaptation, building on existing baseline activities efforts will be taken to strengthen regional efforts to address climate change by supporting regional climate modeling/projections that can feed into or inform SLM in the Caribbean; carry out regional trainings on climate change adaptation (including links to agriculture); supporting regional knowledge sharing and exchange on adaptation; and developing regional institutional measures to mainstream adaptation in SLM policies and plans; and/or enable CCA and SLM regional institutions to work closer together**.** The capacity development will be so designed to capture a wide cross-section of stakeholders, at various levels, including, *inter alia*, Soil Scientists responsible for undertaking Soil Analysis and Recording of Results of the soil surveys which will be undertaken as part of Component 1; Extension officers, Trainer of Trainers; Targeted Stakeholders, in particular, farmers trained and training at the Academic level Initiated and institutionalized through involvement of universities and agricultural colleges. To ensure gender equality at least forty percent of the training provided through SOILCARE Phase 1, will be for women as a means of ensuring skill development to ensure greater access and application of climate smart technology and approaches by women.

136. ***Output 5.1. Capacity Development of Stakeholders Strengthened*****:** To identify the Training Needs required for the implementation of SOILCARE**,** a Training Needs Assessment will be undertaken at the commencement of the project, to assess the training and capacity development needs of the participating countries and the region, as a whole. Once completed the results for each country will be consolidated into a Regional Climate Resilient Soils and Sustainable Land Management Needs Assessment and Learning Plan. The Needs Assessment will cover the range of potential training areas as well as to a wide cross-section of stakeholders in a range of thematics relevant to SOILCARE, including, *inter alia,* soil survey, land capability, SOC mapping, soil laboratories, SLM and Climate Smart Agricultural practices such as methodologies for assessing land degradation, land use systems and landscapes. It is evident that training in specific areas are required to support the various areas being covered by the SOILCARE. As an example, Caribbean Focal Points to the GSP are not qualified soil experts nor are there any attached to the relevant ministries in project participating countries. This reality is reflective of the low participation at regional and international soil meetings and the snail pace of implementation of activities under the GSP pillars, namely the application of the voluntary guidelines of sustainable soil management. It is also portrayed by the low awareness of Caribbean people of the role and function of soils and by extension their importance to livelihoods and development. To build the capacity necessary, training will be conducted at a number of levels, including, *inter alia*:

? The scientists responsible for undertaking the analysis of the soils and for recording the data and information, resulting therefrom. Two groups of stakeholders will be targeted under this target group,

namely (a) the members of the Regional Soils Support Group, and (b) the laboratory scientists who are not part of the Regional Soils Support Group, but are playing a critical role in the analysis of the soil samples and the collation of the results.

? Trainer of the trainers, in particular, targeting the Agricultural Extension Officers of the respective Ministries of Agriculture of the participating countries as well as members of Target stakeholders, particularly the farmers operating in the national sites. A key element of the training provided under this project will focus on enhancing stakeholder?s capability in methodologies for assessing land degradation (drivers, status, trends, impacts, etc.), and land use systems, SLM practices and landscapes as well as training in climate-smart agricultural technologies and practices and improve agricultural stakeholder resilience and climate change adaptation, including links to agriculture. In this regard, focus will be place on the training on a cadre of technical specialists who can work directly with the farmers in helping them to mainstream climate smart methods, tools and approaches into their farming systems.

? Targeted Stakeholders, particularly Farmers: A major target group for this training will be the farmers who are involved in the Climate Smart Model Farm Initiatives in the respective participating Member States. A major component of the training will focus on ?effective delivery of infield training for farmers? as well as on increasing their adaptive capacity to build resilience against the impacts of climate change and variability through knowledge sharing and technology transfer, thereby contributing to building their adaptive capacity and resilience. An important part of the training will be in-field training for small farmers as a means of transferring tools, methods and approaches for implementing climate-smart agriculture. In this regard, from SCCF contribution leverage for the GEF to mainstreaming adaptation into regional and sub-regional policies and strategies approximately 1000 farmers (minimum 40% women) will benefit from training and capacity-building activities on risk assessment and CSA best practices for decision-makers and technicians from relevant counterparts and institutions in Caribbean SIDS in the participating countries.

? Training at the academic level, to ensure that the region has the necessary technical and expert capacity going forward to address its needs, pursuant to Article 58 of the *Revised Treaty*, which calls for the adoption of *?[?] effective measures to assist the Member States in the management of their natural resources****[40]***[40] *in support of the transformation and sustainable development of the agricultural sector*;? Article 57.1.(c) which supports ?*research and development with a view to the adaptation, dissemination and application of appropriate technologies at all levels of the sector and all stages of production*; and Article 57.2.(b), ?*upgrading of national and regional capabilities in the areas of sustainable natural resources management.?*

Taking a long-term view of the capacity needs of the region; resources will be allocated to facilitate the institutionalisation of the training. This will take the form of the delivery of formal education training and research and/or short professional courses. In this regard, sponsorship will be provided up to four students to pursue postgraduate level training in soil and land management at the UWI. Preference will be given to students form countries with SLM and CSA projects to support and work with the project. The research to be undertaken by the students must be relevant to the issues being addressed by SOILCARE and must be nationals of any of the participating countries in the project. The research being undertaken should contribute directly to the project output. Possible areas of investigation could include, *inter alia:*

? Research on new adaptation technologies or practices that can inform SLM projects (investments would be done using country?s STAR allocations or co-financing). This an area identified by the GEF.

? Remediation of degraded sugarcane lands in Northern Belize [Research to be funded from LDN Set Aside Resources and must be have been identified in the Island Programme on Chemicals].

? Research on agricultural financial systems, including insurance, bearing in mind the special needs of small farmers, foresters and agro-processors. [Article 57.1 (b) of the Revised Treaty]

137. A key dimension of the training will be the consideration of options for its institutionalisation so that after the project is completed the region is left with the capability to continue the work.

138. **Outcome 5.2. Knowledge Management, Technical Assistance and Communication on SLM and SSM Strengthened and Enhanced:** Major gaps exist within Caribbean SIDS with respect to adequacy of information on SLM and SSM as well as an effective mechanism for facilitating the movement of technical expertise to address specific issues and problems relating to LD, SLM and SSM, among many others. Resources will therefore be allocated through SOILCARE Phase 1 to address these gaps. In doing so, a number of initiatives will be launched, in particular, the establishment of Caribbean LDN and SLM Knowledge Hub and Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism. Whereas the former, will be designed to capture data and information generated through SOILCARE Phase 1 and to facilitate its use and transfer across the region, thus increasing accessibility; the latter, will provide a mechanism for the identification and transfer of specific expertise across the region to address specific issues and problems. It is anticipated that future SSM and SLM projects in Caribbean SIDS will build on SOILCARE Phase 1, as it considered a foundational project for the region. To alert CSIDS of this issue will be discussed and documented by the PISLM High Level Ministerial Annual General Meeting. In addition, it is also anticipated that the GEF in approving LD projects for the Member States of the Caribbean SIDS this point will be emphasised.

139. ***Output 5.2.1. Caribbean LDN and SLM Knowledge Hub Established:*** The LDN and SLM Knowledge Hub will facilitate digital collaboration between the participating Member States as well as with other SIDS and the rest of the world in general, thus enabling the sharing of experiences, knowledge and learning about LDN, SSM and SLM issues particularly relevant to SOILCARE Phase 1 as well as the UNCCD and the activities of ASLAC-Caribbean. The PISLM Knowledge Hub will be a computer-based system established at the PISLM Support Office Headquarters. Its purpose will be to capture data and information generated through SOILCARE Phase 1 (e.g. new knowledge on soils, soil carbon, tools and methods for Climate Smart Agriculture; new climate resilient technologies, etc.) as well as to facilitate knowledge transfer across the region, thus increasing accessibility to the knowledge generated by the project. It will also facilitate the strengthening of the Technical-Policy Interface in Caribbean SIDS where the project outputs will be integrated into policy frameworks and the national and regional levels.

140. To facilitate its establishment a Feasibility Study will be undertaken to flesh out the elements of the Knowledge Hub and its operational modalities. A key activity of the Feasibility Study will be the mapping of ?current knowledge management and communication hubs? in the Region that GEF and other major donors have invested in, in addition to being structured in a manner so as to build linkages and tap into existing infrastructure and networks. This is necessary to ensure that the lessons learnt from earlier projects can feed into SOILCARE Phase 1 in a more systematic way. In addition, in developing the Knowledge Hub consideration will be given to the design of a Social Learning Platform as an integral part of the system, as a means of enabling social and informal learning, where learners network, share, collaborate and exchange ideas to solve problems, which confront them. The use of Social Media Platforms will play an important role in this regard. A Regional Network to support the indigenous peoples of the Region will also form an integral part of the Knowledge Hub. In addition, in its design, emphasis should also be placed on a commercial aspect that seeks to generate income through subscribing private sector and international organisations.

141. Other activities which will form part of the Knowledge Hub are: Learning and Data/Information Gathering and Dissemination Mechanism; the publication of the Caribbean Land-Soil Outlook 2030 to facilitate dissemination of knowledge generated by the project and a Regional SLM and LDN Public Education and Awareness Initiative as the basis for establishing and implementing a Sustained Public Education and Awareness Programme on SLM, SSM and LDN. The Knowledge Hub, in the medium term, will serve as the Focal Point for ASLAC-Caribbean and its interaction with the other GSP entities in the Hemisphere?ASLAC-South America and ASLAC-Mexico and Central America.

142. With respect to the Learning and Data/Information Gathering and Dissemination Mechanism, this will involve the collection and synthesis of relevant information and data emanating from SOILCARE as well as from the UNCCD and the ASLAC-Caribbean in a format that is easily accessible to stakeholders. Generally, it this mechanism will facilitate the Knowledge Hub being used as the depository of all the information generated from the project as well as other land degradation information and data on Caribbean SIDS; including, *inter alia*, the Project Lessons Learnt on the Contribution to LDN and Landscape Management at Regional and National Levels. The lessons learnt from this project will provide a solid basis not only the mainstreaming of SLM and LDN in Caribbean SIDS, but will also establish the baseline conditions and enabling environment for the launch for Phase II of the project, on the successful conclusion of Phase 1.

143. In the case of the Land-Soil Outlook 2030, the information published in the Land-Soil Outlook will draw heavily on the knowledge and information generated through SOILCARE to inform stakeholders and to keep the general public informed of project implementation progress and key findings. It will contain a wide scope of policy and research information, including, *inter alia*, official Information on land and soils in Caribbean SIDs; knowledge and lessons learned on successful management technologies and approaches shared across Caribbean SIDS; LDN contribution to the various SDGs etc. Issues of the Outlook will be published during the implementation of the project to keep stakeholders updated on progress being achieved and on additional actions which are required to

achieve the project objectives. To facilitate its preparation and production, a number of specific actions will be taken including, *inter alia*,

? A Task Force will be established to assist with guide the development of an initial annotated outline for the Caribbean soil/land Outlook.

? Analysis of soil status and trends in relation to different land use systems and management practices in each country;

? Review and report on soil /land policy, legislation and institutions in each country;

? Preparation of case studies on selected soil/land issues and sustainable soil/land management experiences in each country;

? Identification of key authors to write the chapters of Caribbean LSO, supported by expert members of the Intergovernmental panel on soils (ITPS) and Science-Policy interface of UNCCD (SPI).

144. Since the successful implementation of the LDN Strategy will, of necessity, require fundamental changes in how soils and land are managed in the participating countries by extension in the region, a major vehicle for effecting those changes will be an evidence-based information and data mechanism, in the form of a Regional SLM and LDN Public Education and Awareness Initiative. This Initiative will target the general public as well as the technical and policy makers alike and play a critical role in changing attitudes on these issues. In its delivery social media and other soft approaches will be used while incorporating more direct traditional media (TV, radio, town hall) at the national scale.

145. ***Output 5.2.2: Regional Cooperation in SLM and SSM Encouraged and Facilitated:*** To complement the information sharing and learning implicit in the operations of the Knowledge Hub a modality for the actual transfer of expertise and practical solutions among Caribbean SIDS a Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism will be established as a means of the strengthening of regional cooperation and collaboration among Caribbean SIDS in SLM and SSM, to address specific problems, issues and or identified gaps. Building on the concept of a Small Island Developing States Technical Assistance Programme (SIDS/TAP) as contained in the Programme of Action for the Sustainable Development of SIDS (commonly referred to as the Barbados Programme of Action) and referenced in a number of other publications[41][41], a LDN SIDS-SIDS Cooperation Mechanism will be established to facilitate the movement of technical personnel, as necessary, between the participating country. As an example, given the state of land degradation in Haiti, technical resources from other participating countries will be deployed, within the context of this project, to assist Haiti in specific areas. Elements which will form part of the SLM/LDN SIDS-SIDS Cooperation Network include: (i) a regional and South-South platform for the exchange of experiences on soil, SLM methodologies and practices within the region and with other countries regions and SIDS and (ii) the development/strengthening of a regional network dedicated to support indigenous peoples in the regions. Resources for the Land Degradation Set Aside have been programmed to undertake the baseline worked necessary to elaborate these concepts.

146. **Outcome 5.3. Climate Resilient SLM and Regional LDN Strategy mainstreamed/ integrated into Caribbean Community Regional Policy Frameworks and Decision Making Processes and in National Level Planning Processes:** All the participating countries are members of the Caribbean Community and Party to the *Revised Treaty of Establishing the Caribbean Community Including the CARICOM Single Market and Economy (CSME)*, and being cognizant that ?[?] the

policies and work of the Community are effected through the Organs and Bodies of the Community [?]? [and the decisions of] the Organs reflect the will of the Community.? Against this backdrop, it is prudent that the concepts (e.g. LDN etc.) which SOILCARE Phase I promotes, and its Outcomes and Outputs be integrated into the various Community Policy Instruments (e.g. Caribbean Community Agricultural Policy, Draft Community Environment and Natural Resources Policy Framework etc.) and adopted by the relevant Community Organ(s). Resources leveraged from the SCCF contribution have been allocated to mainstreaming adaptation into regional and sub-regional policies and strategies; the establishment of a sub-regional SSM framework agreement contributing to LDN; an updated sub-regional implementation plan for SSM and LDN, and an operational soil/LDN platform across institutions and decision-making bodies.

147. ***Output 5.3.1: Review and Updating of the Caribbean Community Regional Policy Frameworks and Adopted by its Decision Making Processes****:* An important area of focus, which has already began, is the enhancement of Policy Dialogue between the PISLM/SOILCARE and the Caribbean Community (CARICOM) and integration of SLM and SSM in Regional Policy Instruments (e.g. The Community Environmental Policy and Natural Resources Policy Framework etc.); and facilitating Approval by the Conference of the Heads of Government thus giving them legal effect in the participating countries. The institutional arrangements for efforts towards mainstreaming climate change adaptation in SLM will be done through its integration into the various Community Regional Policy Instruments. A critical step in this process, will be the review and updating of a number of Caribbean Community Regional Policy Frameworks. An important aspect of this will be the integration of environmentally sound and climate resilient measures with the view of strengthening and mainstreaming SLM, SSM, and Climate Smart Agriculture principles into those policy instruments. Once this is achieved at the Community Policy level, Member States, are mandated, unless otherwise stated to implement those measures at the national level, including, if need be, the updating of relevant legislation.[42][42] To facilitate the review and updating of the various relevant policy frameworks of the Caribbean Community and to convene the relevant Community Organs responsible for their adoption, the PISLM will work closely with the Caribbean Community Secretariat through its Sustainable Development and Agriculture Directorates to ensure complementarity and integration of the concepts, outcomes and outputs which this project promotes. It is anticipated that the PISLM High Level Ministerial Group will play a leading role in this endeavor by providing the policy links with the Council for Trade and Economic Development (COTED) [Environment] and COTED [Agriculture]. To provide the opportunity for the COTED to consider the issues being addressed in the SOILCARE and for them to be officially integrated into the Caribbean Community Policy Frameworks and Policies[43][43], during project implementation resources will be allocated for the convening of three Meetings of the combined COTED for environment/sustainable development and Agriculture.

148. ***Output 5.3.2. A Sub-regional Sustainable Soil Management (SSM) Framework Agreement Contributing to LDN and Strengthening Regional Efforts to Address Climate Change Established*****:** The Review and Updating of the Caribbean Community Regional Policy Frameworks would not be complete unless the various Community Institutions which will be required to implement these Frameworks and/or charged with the responsibility of development and in some instance financing of programmes in the region, are fully onboard and embrace the changes made in the various Policy Frameworks. Since these institutions have their own Management Framework and do not necessarily engage in joint planning and delivery of programmes in the region; it is necessary to provide a framework for them to work cooperatively together as well as to encourage synergies between their respective programming. To facilitate this, a Sustainable Soil/Land Management Framework Agreement Group will be established. The purpose of this Group is to get a commitment in writing from the main regional bodies in the region which have mandates for aspects of the region?s

natural resources and/or their use (e.g. soils, land, water resources, biodiversity etc.) to mainstream soils, land management and adaptation into their respective regional and sub-regional frameworks. The entities which will form part of the Framework Agreement Group, include, *inter alia*, the Caribbean Community Secretariat in particular the Directorates of Environment and Sustainable Development and Agriculture; the Institutions of the Caribbean Community in particular, CARDI and the Caribbean Community Climate Change Centre (CCCCC); the Environment and Agriculture Directorate of the OECS Commission; the Inter-American Institute for Cooperation on Agriculture[44][44] (IICA), Universities of the West Indies, Belize and Guyana, the Caribbean Forum[45][45] (CARIFORUM) Secretariat, the Caribbean Development Bank (CDB) and the Development Bank of Latin America[46][46] (CAF).

149. The main functions of this entity? Sustainable Soil/Land Management Framework Agreement Group?will be to provide technical advice on and assistance in the implementation of the clearly identified elements of the project, as required as well as facilitate through its own respective organization the mainstreaming of climate resilient measures into their operations. This mechanism will enable the PISLM to benefit from the experience and expertise of regional and international organisations, and/or to draw on a wider range of expertise available through to assist with the execution of elements of the project. In addition, this mechanism will organize itself in a number of Standing Project Platforms, namely on:

? Soils which will oversee the updating of Soils and Soil Carbon.

? Climate Smart Agriculture, Sustainable Foods Systems and Integrated Landscape Restoration;

? Partnership Development, Financing and Resource Mobilisation. This Working Group will work closely with the Private Sector and its Organisations and Multilateral Financial Institutions (e.g. Caribbean Development Bank, Development Banks of Latin America (CAF); IADB etc.).

? Regional Cooperation and Public Education whose function is to ensure that the relevant outputs are fed into the Decision-Making Organs of the Caribbean Community and the necessary actions

? are taken to enhance Public Education about SLM and LDN.

150. To facilitate the implementation of the activities under the *Framework Agreement Contributing to LDN* a post of SOILCARE Sustainable Soil Management (SSM), Sustainable Land Management (SLM) and Climate Change Adaptation (CCA) Specialist[47][47] will be established. This post will be financed, in the main, by the resources leveraged from the SCCF contribution to SOILCARE to facilitate mainstreaming of adaptation into regional and sub-regional policies and strategies. The Officer will work closely with the Secretary to the ASLAC-Caribbean and ensure that the work being undertaken within that context is mainstreamed at the regional and national levels.

151. ***Output 5.3.3: Building Synergies and Strengthening Cooperation between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals:*** As directed by the GEF Secretariat emphasis will be directed on Building Synergies and Strengthening Cooperation between SOILCARE and the SIDS Island Programme on Chemicals across national strategies on soil/land issues. One of the dimensions of SLM and SSM which SOILCARE will have to address in some of its interventions is the impact of chemical contamination in soils, which have either resulted from decades of use of agricultural chemicals and or chemical contamination resulting from other activities (e.g. small-scale farming, mining, industrial etc.). Taking into consideration the directive from the GEF that synergies should be developed between SOILCARE and the Island Programme on Chemicals, a key area of synergy which SOILCARE is willing to take the lead on, providing that resources can be leveraged from the SIDS Island Programme on Chemicals, within the framework of a Soil Chemical Pollution Reduction and Sustainable Soil/Land Management Programme. An important element of this programme will be the promotion of the application of *FAO Code of Conduct for Sustainable Use of Fertilizers* (2019) and *FAO Code of Conduct for Pesticide Management* (2013). In addition, a number of possible activities have been identified which can form the basis for the collaboration and further project development. These activities include, *inter alia,*

? The Sources and Fate of Organic and Inorganic Pollutants in Caribbean Soils

? Absorption, Mobility, and Degradation Properties of Contaminants

? Green Chemistry in the Sustainable Use and Management of Chemicals Across Productive Sectors in particular with Respect to Sustainable Soil, Land and Water

? Sustainable Management of Contaminated Soils and the surrounding environmental conditions

? Status of Soils Contamination with Heavy Metals and Pesticides

? Remediation of Polluted Agricultural Soils in the Caribbean

? Prevention, Remediation, and Adaptation approaches

? Managing Contaminated Sites in Old Agricultural Lands

? Development and Implementation of National Plans for Preventing Soil Pollution

? Heavy Metal Contamination in Agricultural Soils

? Soil Pollution from Irrigation Water sourced from Rivers and Water Courses

152. Preliminary work on these activities could be initiated using LD set-aside funds, and financed by resources from SIDS Island Programme on Chemicals, thereby strengthening the synergies between these two initiatives as recommended by the GEF.

153. **Outcome 5.4. Promotion of Investment and Financing in SLM and SSM with Private and Public Sector Partners and Others:** A major constraining factor impacting upon the ability of

resources managers and users to implement SLM, particularly small farmers, is the access to financing. In order to address this constraint a LDN Transformation Financial Mechanism will be established. In addition, within the context of COTED, the Organ of the Caribbean Community with responsibility for defining Community policy with respect to environmental and sustainable development issues, the issue relating to the creation of an enabling environment related to finance, in support of LDN. Issues including, inter alia; the reduction of degradation-associated subsidies (negative cost); the inclusion of restoration, rehabilitation and landscape approach considerations under agricultural credit schemes; and deter finance of degradation associated activities, will be place on the Agenda.

154. **Output 5.4.1.** ***Caribbean SIDS LDN Transformation Funding mechanism established and resources mobilised for climate resilient SSM/SLM*****:** The main instrument for promoting SLM and SSM in Caribbean SIDS is through the Establishment of a Caribbean SIDS LDN Transformation Funding mechanism**.** The Financial Mechanism will serve as a depository for the resources which will be generated from bankable projects which are prepared. A first step in this process will be the undertaking of a Feasibility Study to explore the possibility of establishing such a Regional Fund to ensure the necessary resources are available to stakeholders, in particular, small farmers, to incorporate SLM and Climate Smart approaches and methods into their farming systems and into landscapes. The Feasibility Study will also make specific recommendations on the opertionalisation of the funding mechanism. In this regard, consideration will be given to a range of funding options, including inter alia, the issuing of a Regional Bond backed by the participating countries; voluntary contribution from Governments, the private sector and private Foundations and contribution generated through innovative funding mechanisms and possibly resources generated through the PISLM/SOLICARE Regional Research, Advisory and Capacity Building Facilities on New Adaptation Technologies. The Feasibility Study will also consider and explore other innovative financing mechanisms and models such as PES, the Caribbean Biodiversity Fund, and other domestic and regional resource mobilization options. On the basis of the results of the Feasibility Assessment, a LDN Transformation Financial Mechanism will be established.

155. **Outcome 5.5 A Gender Sensitive Monitoring and Evaluation Framework in Support of Project Implementation:** To facilitate the effective monitoring of the implementation of the activities under SOILCARE Phase 1 a Gender Sensitive Monitoring and Evaluation Framework will be put in place. With respect to monitoring this is an ongoing process that will be done throughout the entire project implementation cycle. This will include the integration of gender into monitoring processes and systems in order to capture changes in women?s social and economic empowerment and well being. In the case of Evaluation, this will comprise of an Independent Mid-Term Evaluation and an Independent Terminal Evaluation.

156. ***Output 5.5.1. Monitoring and Evaluation Process for the Project executed in accordance with GEF Guidelines*****:** Consistent with the GEF Monitoring and Evaluation Framework, the project will be subjected to an Independent Mid-Term Evaluation, the results of which will inform project implementation and an Independent Terminal Evaluation. The Terminal Evaluation will influence the areas on which emphasis will be placed in SOILCARE Phase 2.

(4) Alignment with GEF Focal Area/Impact Programme Strategy

157. The project is aligned with the GEF-7 LD Focal Area Strategy. Its implementation will contribute to the achievement of the goals LD Focal Area strategy in GEF-7, namely, the alignment of GEF support to promote UNCCD?s Land Degradation Neutrality (LDN); maintaining and improving the flow of agro-ecosystem services to sustain food production and livelihoods through Sustainable Land Management (SLM); reducing pressures on natural resources from competing land uses and increase resilience in the wider landscape and creating enabling environments to support scaling up and mainstreaming of SLM and LDN and CCA. Together these will contribute to the generation of multiple benefits and provide a basis harnessing private sector participation on LD activities, including investments as well as establishing and building co-operation with the LDN fund and other innovative financing mechanisms.

(5) Incremental/additional costs reasoning and expected contributions from the baseline, the GEFTF, LDCF, and co-financing.

158. The Project will contribute to global environmental benefits in a number of ways. Overall it contribute to the achievement of Target 15.3: "By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation neutral world." The project will also contribute to the work of the Global Soil Partnership, in particular improving information and data on soil carbon, a critical element required by the participating countries to complete their LDN processes. This information which will be generated mainly in Component 1 of the project will ensure that Caribbean SIDS viewpoints on the priorities established by them are adequately reflected in the Latin America and the Caribbean Soil Partnership and by extension at the Global level. As exemplified in Component 2 of the project, it will also contribute to the reduction of land degradation in Caribbean SIDS by stemming soil and land degradation; including, inter alia, soil erosion, chemical degradation, land slippage and sedimentation which eventually reaches the marine ecosystems. The adoption of SLM practices in Caribbean SIDS to reduce land degradation and secure ecosystem services across Caribbean SIDS will result in significant global benefits. A common tread which underpin all the Components of the project which is reflected more explicitly in Components 3 and 4 from a technical perspective and Component 5 from a policy and capacity development is the building of climate change resilience in SSM and SLM in Caribbean SIDS. This is particularly important since SIDS are among the most vulnerable countries to climate change, the impacts of which are largely adverse. One of the participating countries?Haiti?is considered to be the fourth most vulnerable country in the world to the effects of climate change. In addition, Global Climate Models outputs and observational records suggest a consistent drying trend in the Caribbean, which obviously have an impact on both SSM and SLM. In addition, these models also project an increase in hurricanes with maximum winds intensity of at least 2 to 10 percent before 2050. As an example, officially, the decade with the most Category 5 hurricanes is 2000?2009, with eight Category 5 hurricanes having occurred: Isabel (2003), Ivan (2004), Emily (2005), Katrina (2005), Rita (2005), Wilma (2005), Dean (2007), and Felix (2007). Additionally, some of the participating countries, in the project, in particular Belize, Guyana and Haiti have identified both reforestation and sustainable forest management as mitigation commitments in their Intended Nationally Determined Contributions (INDC) as a means of contributing to climate benefits and all of them have identified SSM and SLM as part of their INDC?s adaptation commitments. The high vulnerability of Caribbean SIDS to climate change therefore provides a justification for the support provided by the SCCF to support the mainstreaming of climate resilience as a central element of each of the Components of the project.

Table: Benefits associated with alternative resource management and production systems promoted by project

Current Practices	GEF Alternative/Alternative production systems	Expected Benefits
Sustainable Development Goal 15.3 not currently being implemented in most Caribbean SIDS in a systematic manner to achieve the desired 2030 target.	Systematic approach to the implementation of SDG 15.3. in a regional context	? Contribution to the achievement of the Sustainable Development Goals (SGGs). ? Implementation of Land Degradation Neutrality (LDN) a s a tool to assist resource managers and users to sustainably manage land and land resources and the mobilization of resources for doing so.
Inadequate information on the status of soils in Caribbean SIDS which hinders which hinders national physical planning and development and commitments to international agreements.	The soil data and information for Caribbean SIDS have been considerably improved and integrated into the Global Soils Data Set	? Improvement of soil information on Caribbean SIDS as well as ensuring that the Caribbean SIDSs viewpoints on the priorities established by them are adequately reflected in the Central America, Caribbean and Mexico Soil Partnership and by extension at the Global level and by extension the Global Soils Partnership
Inadequate policy and planning with respect to SLM as well as limited capacity in climate resilient measures to mitigate against the climate change and climate variability. These are also impacted by the availability of adequate financial resources.	The policy and planning frameworks at both the regional and national levels will be enhanced, in particular with respect to the integration of climate resilient measures in SLM and the agriculture sector. In addition, capacity will be built to enable stakeholders, in particular small farmers to mainstream climate resilient methods, approaches and tools.	? Enhanced policy and planning frameworks in particular with respect to the mainstreaming of climate resilient measures into SLM and the agriculture sector. ? Better husbandry of soil and land resources. ? Increase productivity of soil and land resources.
Unsustainable agricultural management practices resulting in a range of environmental issues, including, inter alia, soil erosion, increasing sediment flows into aquatic ecosystems, etc.	Improved soil data and information in Caribbean SIDS to inform decision making and to serve as a major pillar of the Regional Land Degradation Neutrality (LDN) Strategy	? Enhance National and Regional Policy on soils ? Preparation of a Regional LDN Strategy to provide a framework addressing land degradation in Caribbean SIDS

Current Practices	GEF Alternative/Alternative production systems	Expected Benefits
Unsustainable forest management practices (deforestation including on steep slopes,clear felling for agricultural purposes, etc.) resulting in extensive soil erosion and land slippage, sedimentation and flooding etc	Reforestation using native species, establishment of agro-ecological production systems and the promotion of integrated lands cape management and restoration and on-going care and monitoring of reforested areas etc	SLM measures adopted on forest lands in Caribbean SIDS, resulting in: ? Increased forest cover ? Reduced soil erosion, land slippage and flooding ? Establishment of agro-ecological production systems aimed at improving productivity, improving ecosystem services etc. ? Increased carbon sequestration ? Reduced biodiversity loss
Inappropriate use of agrochemical inputs (primarily pesticides and fertilizers) leading to soil acidifcation and chemical degradation and declining water quality.	Adoption of organic principles and integrated pest management, adherence to requirements for chemical inputs, crop rotation to reduce pests	SLM measures adopted on z ha of agricultural lands, resulting in: ? Improved soil quality ? Improved food safety ? Reduced contamination of drinking water supplies and aquatic and near shore marine ecosystems

(6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

159. The project will contribute to global environmental benefits in a number of ways, including, inter alia, contributing to the achievement of Target 15.3?by 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought, floods, and strive to achieve a land degradation neutral world. Other global benefits which will result from the project is the contribution it will make to the work of the Global Soil Partnership, particularly through Component 1, which deals with improving the soil information, particularly of soil organic carbon in Caribbean SIDS, a prerequisite for the effective implementation of LDN. Global benefits will also be derived by the delivery of the LD objectives as outlined, including, inter alia, through the reduction of soil erosion, chemical degradation, land slippage and sedimentation as exemplified in Component 2. In addition, the project through Component 3 as well as elements of Component 4 contribute to global environmental benefits as it relates to enhancing climate resilience by promoting and implementing Climate Smart Agricultural practices as well as testing, promoting and the deployment of climate resilient sensitive technologies to farmers in the participating countries. Global benefits will also be derived form a range

of other activities, including, inter alia, the establishment of agro-ecological food production systems in degraded areas by improving soil management and increasing soil organic matter content, increasing the vegetation and tree coverage, and thereby generating multiple environmental and socio-economic benefits, and building of resilience against climate change and natural disasters through the promotion of Climate Smart Agriculture and promoting an integrated approach to implementing SLM to increase the prospects for food security for smallholders and communities that are dependent on farming for their livelihoods as well as shifting degraded lands into production systems.

160. In addition, this project creates an enabling environment, as exemplified in mainly in Components 4 and 5 to support the participating countries in developing their LDN Strategy, albeit, in a regional context. In this regard, focus is placed on building capacity at all levels required to address land degradation, reforestation and restore and maintain functional landscapes and developing monitoring and information systems and targeted research on issues such as soil carbon and facilitating lessons learning and knowledge exchange and south-south cooperation within the Caribbean SIDS region. Another key focus of this project is the provision of technical assistance required to bring bankable projects to the investment. In addition, to harnessing the potential of national and regional private sectors in Caribbean SIDS, emphasis will also be placed on the development of bankable projects and programmes which could benefit from financing through private LDN funds and other innovative financing mechanisms.

161. The project will contribute to the Core Indicators :

? 15,000 hectares of degraded lands rehabilitated and ecosystem services restored in Barbados (2,000 ha), Grenada (2,000 ha), Guyana (4,000 ha), Haiti (5,000 ha) and St. Lucia (2,000 ha). This includes 9,000 ha of forest lands restored (Core Indicator 3.2) and 6,000 ha under improved management to benefit biodiversity (Core Indicator 4.1).

? 20,000 hectares of agricultural lands converted into Climate Smart Model Farms in Barbados, Grenada, Guyana, Haiti and St. Lucia (Core Indicator 3.1).

? 20,000 ha Food Production Systems established creating Alternative Livelihood Options in Barbados, Belize, Grenada, Jamaica and St. Lucia (Core Indicator 4.3).

? Avoidance/capture of an estimated 5.4 million tonnes of CO2-eq over a period of 20 years

? 5,900 direct beneficiaries (2400 women). Project beneficiaries include 1000 individuals that will be trained on CC adaptation best practices for agriculture (Outcome 5.2) accounted for in the SCCF Tracking Tool

162. Caribbean SIDS will also benefits from SCCF contribution to mainstreaming adaptation into regional and subregional policies and strategies including (i) one subregional SSM framework agreement contributing to LDN , (ii) an updated subregional implementation plan for SSM and LDN, and (iii) one operational soil /LDN platform across institutions and decision making bodies. Dissemination of adaptation practices and experiences will be promoted as well as capacity development of relevant policy players and key stakeholders. Finally, approximately 1000 farmers (50% women) will benefit from training and capacity-building activities on risk assessment and CCA best practices for decision-makers and technicians from relevant counterparts and institutions in Caribbean SIDS in the 7 participating countries.

(7) Innovation, sustainability and potential for scaling up

163. **Innovation:** As observed by the STAP, it was pleased with the innovativeness of the SOILCARE Phase 1. Its design is innovative as it combines regional aspects with a range of bio-geo-physically, similar, yet to some extent, varying sub-national - characteristics. This provides opportunities for cross-fertilization and horizontal and vertical learning across partners and from national to regional level and back respectively. Specific forms and nature of innovation in the various domains, include, inter alia, i) establishment of an LDN regional strategy, ii) the design of ?bankable? LD investment projects to mobilise the private sector in support of LDN and iii) the adoption of climate -smart model farms. In elaborating the project during the PPG Phase other innovative elements have been included at the recommendation of the GEF Secretariat, namely, the establishment of Research/Advice Facility on New Adaptation Technologies. With respect to the?establishment of an LDN regional strategy?SOILCARE Phase 1 is one of the first examples of a group of countries with similar characteristics to approach LDN, on a regional basis. It, therefore, contributes to the development of a regional perspective on LDN and places these countries in a better position to influence the integration of LDN into regional technical policies. It establishes an innovative approach to the implementation of SDG 15.3; an approach which could be adopted by other SIDS Regions. It also links the SDG agenda with UNCCD objectives.

164. With respect to the design of ?bankable? LD investment projects to mobilise the private sector in support of LDN. This is a deliberate strategy aimed at encouraging and facilitating the private sector to provide targeted investments for Sustainable Soil Management (SSM) and Sustainable Land Management (SLM). Given the nature and severe root causes of the issues being experience by the participating countries and the expected exacerbation by changing climate in the future, fundamental transformational changes will be required to preserve (and successfully restore) the resource base and ensure its long term sustainable management. In this regard, the promotion of Climate Smart Agriculture (CSA) is an attempt to start preparing farmers for the transition which has to be made in farming systems to cope with climate variability and climate change. In addition, the Research/Advice Facility on New Adaptation Technologies; is intended to be at the forefront of test climate resilient technologies which could be deployed in the field and supported by training. The successful deployment of those climate resilient technologies could provide the basis for the fundamental transformational changes which are required.

165. **Sustainability:** At the regional level a key consideration which will contribute to sustainability is the provision made for the integration of the LDN and the project results into the policies which stem from regional decision making processes, including endorsement and adoption by the Caribbean Community Councils (e.g. the Council on Trade and Economic Development (COTED) and the Conference of the Heads of Government of the Caribbean Community). In addition, sustainability will also be achieved in the training approach with formal certification at the graduate level, as those persons trained through the project will be required to give back service to the region for a specified period of time.

166. The re-structuring in June 2019 of the Latin America and the Caribbean Soil Partnership (ASLAC) and the designation of the PISLM?the Executing Agency for SOLICARE Phase 1?by the Latin American and Caribbean Soil Partnership (ASLAC) Caribbean as the Focal Point for (ASLAC) Caribbean was done as a means of increasing and sustaining the participation of the Caribbean SIDS in the GSP. Hence the establishment of the Caribbean Soil Support Group for SSM/SLM as part of SOILCARE Phase 1 will play a key role in facilitating collaboration with the Latin American and

Caribbean Soil Partnership (ASLAC) as a means of updating and Strengthening national and regional soils information, technical capacity and coordination as a basis for Improved Decision Making Including on SSM and SLM.

167. In order to ensure sustainability of the project activities, particularly, with respect to increasing focus in the Caribbean on Sustainable Soil Management the The Faculty of Food and Agriculture (FFA) University of the West Indies, St. Augustine Campus, Trinidad and Tobago has been selected as a Supporting Project Executing Entity. The inclusion of other regional institutions such as the Caribbean Community and its Organs - the COTED and the Caribbean Community Secretariat, its institutions such as the Caribbean Research and Development Institute (CARDI) is, also among other elements, designed to give sustainability to the activities being implemented by SOILCARE Phase 1 by integrating key elements of the project into the Community Regional Policy Frameworks and processes. Similarly, the involvement of other regional institutions, particularly through their participation in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group**,** will serve as an operational soil/LDN platform across institutions and decision-making bodies and also constitute another mechanism aimed at contributing to the sustainability of the project. The various Networks and Groups mentioned are embedded into existing institutions and processes which will contribute to their sustainability in the short, medium and long term.

168. Another important factor which will contribute to the sustainability of this project is the direct involvement of key stakeholders at the regional and national levels in, particular, the participation of the relevant Ministries in the participating countries as well as local communities and small farmers from the outset of the project. The knowledge gained by stakeholders, including farmers and other local community members through training in the various areas of the project (e.g. soil and land capability analyses; tools, methods and approaches to Climate Smart Agriculture etc.) as well as the experience gained in their application, will be invaluable in ensuring that these approaches are actively adopted and hence contribute to the sustainability of the project outcomes.

169. The benefits the various stakeholders will derive from the project, include, incentives for the adoption of SLM and Climate Smart Agriculture (CSA) practices, opportunity for increased incomes and improved livelihood options, improved environmental stewardship and safeguarding of natural resources, ecosystem services and food production for future generations, and in many instances preservation of cultural heritage.

170. **The scaling ? up potential**: The implementation of this project offers significant potential for the scaling up of various activities particularly with respect to the promotion and inculcation of the principles of climate smart agriculture practices across the region. Since the project will only exposed a limited number of stakeholders to climate smart technologies and approaches, a major challenge in the up-scaling process will be putting in place an effective dissemination strategy to reach a wider cross-section of farmers. In this regard, the mechanisms included in the project to facilitate learning and the development and testing on new climate resilient technologies is a *sine qua non.* Fundamental to the need of expanding CSA and the introduction of new climate smart resilient building technologies and approaches in the agriculture sector in the region will be reform of the sector, institutionally and from a governance standpoint. Early and continued effective engagement of stakeholders across multiple scales will need to be a necessary part of the upscaling process.

171. In terms of scaling up of SLM interventions in support of LDN implementation, the information and data generated from project activities as well as the training of a wide cross-section of stakeholders from the participating countries will be used as a vehicle to facilitate the scaling up and replication of SLN interventions at the national level. A systematic approach will be used to disseminate relevant and applicable project results to non-SOILCARE participating countries through existing regional organisations. In addition, the non-SOILCARE participating countries will also benefit from the results produced by SOILCARE implemented activities through policy changes which will be made at the regional level within the context of the Caribbean Community, since decisions made within that body collectively are applicable to all Member States which are part of the CARICOM Single Market and Economy (CSME).

[1] Nurse L, Climate Change and Climate Variability: Implications for SIDS, UNESCO International Seminar on Climate Change Education, Paris, July 27-29, 2009

[2] Ibid

[3] United Nations Development Programme (UNDP), An Overview of Modelling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, 2009

[4] Caribbean Soil Fertility Mapping Project will establish a database with updated information regarding the availability of fertile soil on the islands of Antigua and Barbuda, St. Lucia, Grenada, St. Vincent & The Grenadines, St. Kitts & Nevis and Dominica

[5]Initiated as an integral part of the Caribbean SIDS Programme?The Basis of UNEP and UNEP-Caribbean SIDS Collaboration for the Further Implementation of the Barbados Programme of Action?at a Caribbean Sub-regional Workshop on Land Degradation, which was held in Port-of- Spain, Trinidad from February 3rd ? 6th 2004.

[6] Of the participating countries in SOILCARE Grenada and Guyana have completed their LDN/TSP, while St. Lucia, Belize, Haiti, Antigua and Barbuda are in the process of completing their LDN/TSP.

[7] A state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems.

[8] Government of Barbados, Speech from the Throne, Delivered by Her Excellency the Hon, Sandra Mason, GCMG, DA, QC, to the Joint Houses of the Senate and the House of Assembly, 15 September 2020.

[9] Bureau of Statistics, Report of the 2002 Census, 2005

[10] Ibid

[11] David Klautky and Associates. (1997). Land-Use Plan for the Agricultural Component of the Intermediate Savannahs Development Project. Georgetown.

[12] Cate and Sukhai, 1963

[13] Michel, 2003

[14] MDE, 2016

[15] Kramer, et al., 2016,

[16] MDE/INESA, 2008

[17] Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT) 2015).

[18] Chi et. al

[19] Effect of Long-Term Sugarcane (*Saccharum* spp.) Cultivation on Chemical and Physical Properties of Soils in Belize. Luciano Chi a, Jorge Mendoza-Vega a, Esperanza Huerta a, and Jos? David ?lvarez-Sol?s http://dx.doi.org/10.1080/00103624.2016.1254794

[20]De Le?n and Gonz?lez 2011.

[21] Physical Development Plan of Barbados

[22] The work of the ASLAC_Caribbean will be guided by the 5 pillars of action under the Global Soil Partnership: 1- Soil Management: Promote sustainable management of soil resources for soil protection, conservation and sustainable productivity; 2- Awareness Raising: Encourage investment, technical cooperation, policy, education awareness and extension in soil; 3- Research: Promote targeted soil research and development focusing on identified gaps and priorities and synergies with related productive, environmental and social development actions; 4- Information and Data: Enhance the quantity and quality of soil data and information: data collection (generation), analysis, validation, reporting, monitoring and integration with other disciplines and 5- Harmonisation: Harmonisation of methods, measurements and indicators for the sustainable management and protection of soil resources

[23] Consideration will also be given, depending on the availability of resources to the introduction of a biological indicator. For example, the respiration rate of the soil (e.g. D.C. Chambers method and CO2 measurement.

[24]Pesticide analysis will depend on a previous risk analysis (agricultural and industrial practices nearby, water quality, etc) and will be restricted to obsolete persistent pesticides identified under FAO project ?Disposal of Obsolete Pesticides including POPs, Promotion of Alternatives and Strengthening Pesticides Management in the Caribbean? and listed by national authorities.

[25] Ibid

[26] Global Mechanism of the UNCCD. 2016a. ?Achieving Land Degradation Neutrality at the Country Level. Building Blocks for LDN Target Setting?.

[27] Caribbean Soil Fertility Mapping Project will establish a database with updated information regarding the availability of fertile soil on the islands of Antigua and Barbuda, St. Lucia, Grenada, St. Vincent & The Grenadines, St. Kitts & Nevis and Dominica

[28] Orr, B.J., A.L. Cowie, V.M. Castillo Sanchez, P. Chasek, N.D. Crossman, A. Erlewein, G. Louwagie, M. Maron, G.I. Metternicht, S. Minelli, A.E. Tengberg, S. Walter, and S. Welton. 2017. Scientific Conceptual Framework for Land Degradation Neutrality. A Report of the Science-Policy Interface. United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany. Published in 2017 by United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany ? 2017

UNCCD. All rights reserved. UNCCD-SPI Technical Series No.01. Pay specific reference to Module D.

[29] Developed through within the framework of the Global Soil Partnership (GSP). The guidelines provide technical recommendations on how sustainable soil management can be achieved. The technical principles recommended by VGSSM, are: (1) to minimize soil erosion; (2) to enhance soil organic matter content; (3) to foster soil nutrient balance and cycles; (4) to prevent, minimize and mitigate soil salinization and alkalinization; (5) to prevent and minimize soil contamination; (6) to prevent and minimize soil acidification; (7) to preserve and enhance soil biodiversity; (8) to minimize soil sealing; (9) to prevent and mitigate soil compaction; and (10) to improve soil water management.

[30] See Protocol for the assessment of the impact of sustainable soil management practices at http://www.fao.org/fileadmin/user_upload/GSP/eighth_PA/SSM_Protocol_PA2020.pdf

[31] Analog forests is a forestry management system born in Sri Lanka in the 1980?s as an alternative to prevalent monocultures that seeks to establish an ecosystem dominated by trees, which is "identical" or very similar in architectural structure, dynamics and ecological function to the original diverse vegetation. (IAFN, 2007).

[32] Future Caribbean Climates in a World of Rising Temperatures: The 1.5 vs 2.0 Dilemma Taylor and Clarke et.al; Journal of Climate; Volume 31 2018.

[33] This is a facility which targets at-risk young men, as a way to offer positive and attractive alternatives to the negative lifestyles which they and their peers experience daily.

[34] This is being used in the context of the project to refer to the introduction of new models of farming and agricultural production, including the use of environmentally sound and climate resilient measures, processes and approaches to the ways food is grown and distributed.

[35] Innovation in agriculture is used in this document to refer to the process whereby individuals or organizations bring new or existing products, processes or ways of organization into use for the first time in a specific context in order to increase effectiveness, competitiveness, resilience to shocks or environmental sustainability and thereby contribute to food security and nutrition, economic development or sustainable natural resource management, according to FAO, 2019.

[36] See United Nations Framework Convention on Climate Change, Technologies for Adaptation in the Agriculture Sector, Technology Executive Committee, TEC Brief #4.

[37] The Cave Hill Campus of the University of the West Indies, Barbados is currently in the process of developing a Science and Technology Agro-Park on agricultural land donated by the Duke Family for to facilitate the advancement of research and training in the agricultural sciences. Since the Cave Hill Campus does not have an Food and Agriculture Faculty, *per s*e, the allocation of a portion of land within their Science and Technology Agro-Park to be used by SOILCARE Phase 1 as part of the PISLM/SOILCARE Regional Research, Advisory and Capacity Building (RAC) Facility on New Adaptation Technologies, to be used for the promotion of youth entrepreneurship in climate smart technologies would contribute significantly to visibility of the Cave Hill Campus Science and Technology Agro-Park Development.

[38] Headquartered in Saint George?s, Grenada, the Foundation has subsidiary offices in Antigua and Barbuda, the Commonwealth of Dominica, Saint Kitts Nevis, Saint Lucia and Saint Vincent and the Grenadines. The objectives of the Foundation, include, inter alia, promotion of Research, Innovation, Enterprise and Entrepreneurship through Training particularly among the youth and women in the OECS; the development via public private partnerships in all fields of socio-economic endeavour while tackling socio-economic issues of unemployment, gender issues, and governance primarily in the OECS and development of progressive-minded socio economic interests and jointly undertake programmes while promoting strategic alliances with Private sector, Government interests and their respective authorities, globally with material and technical support and monetary assistance from regional and International organisations.

[39] These actions would need to be complemented by a number of actions at the regional level, including, inter alia, This will require the elevation of LD/SLM, landscape management and the concept of LDN into the highest regional policy and political levels (e.g. COTED and the Heads of Government etc.) as well as its integration into the various regional policy (e.g. Caribbean Community Environment and Natural Resources Policy Framework, etc.), policy processes (regional strategies and programmes and political documents (the Jagdeo Initiative ?which aims to catalyse the operationalisation of the Regional Transformation Programme for Agriculture (RTP) etc). This will be achieved through the preparation of a LDN Strategy for Region which will be integrated into the respective regional policy frameworks (e.g. Community Environment and Natural Resources Policy Framework, the Jagdeo Imitative etc.).

[40] These include *inter alia*, the soil, air and all water resources, the conservation of and the sustainable use of biological resources, especially those of important medicinal and traditional value.

[41] Griffith, M.D., A Concept Note on Trade in Environmental Services: Towards the Formulation of a Strategic Framework and Action Plan for the Caribbean Community Single Market and Economy (CSME). Prepared for CaribInvest (West Indies) Ltd. And the Caribbean Community Secretariat, CaribInvest (West Indies) Limited and the Caribbean Community Secretariat (CARICOM), January 2009. Also See Griffith, M. D. and D. Oderson, Strengthening the Inner Circle for Environment and Development: The Case of the Caribbean Community. CaribInvest Publishing, Barbados in collaboration with Wade Ross Publishing, Mexico, Publidisa Mexicana S.A.; September 2009.

[42] This is in keeping with the supremacy of Caribbean Community Law over national law. See TCL and TCL Guyana v The State of the Co-operative Republic of Guyana [2010] CCJ 1 (OJ) as [48].

[43] The Caribbean Community have a number of policy Frameworks which are grounded in the Revised Treaty of Establishing the Caribbean Community Including the CARICOM Single Market and Economy (CSME), the Regional Legal Instrument of the Community. It is important therefore that SLM and the Regional LDN are integrated into these instruments and be approved by the relevant Organs of the Community

[44] The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the Inter-American System that supports the efforts of Member States to achieve agricultural development and rural well-being. It mission is to encourage, promote and support Member States in their efforts to achieve agricultural development and rural well-being through international technical cooperation of excellence. All of the participating countries are members of IICA.

[45] The Caribbean Forum (**CARIFORUM**) is a subgroup of the African, Caribbean and Pacific Group of States and serves as a base for economic dialogue with the European Union. It was established in 1992. Its membership comprises the 15 Caribbean Community states, along with the Dominican Republic.

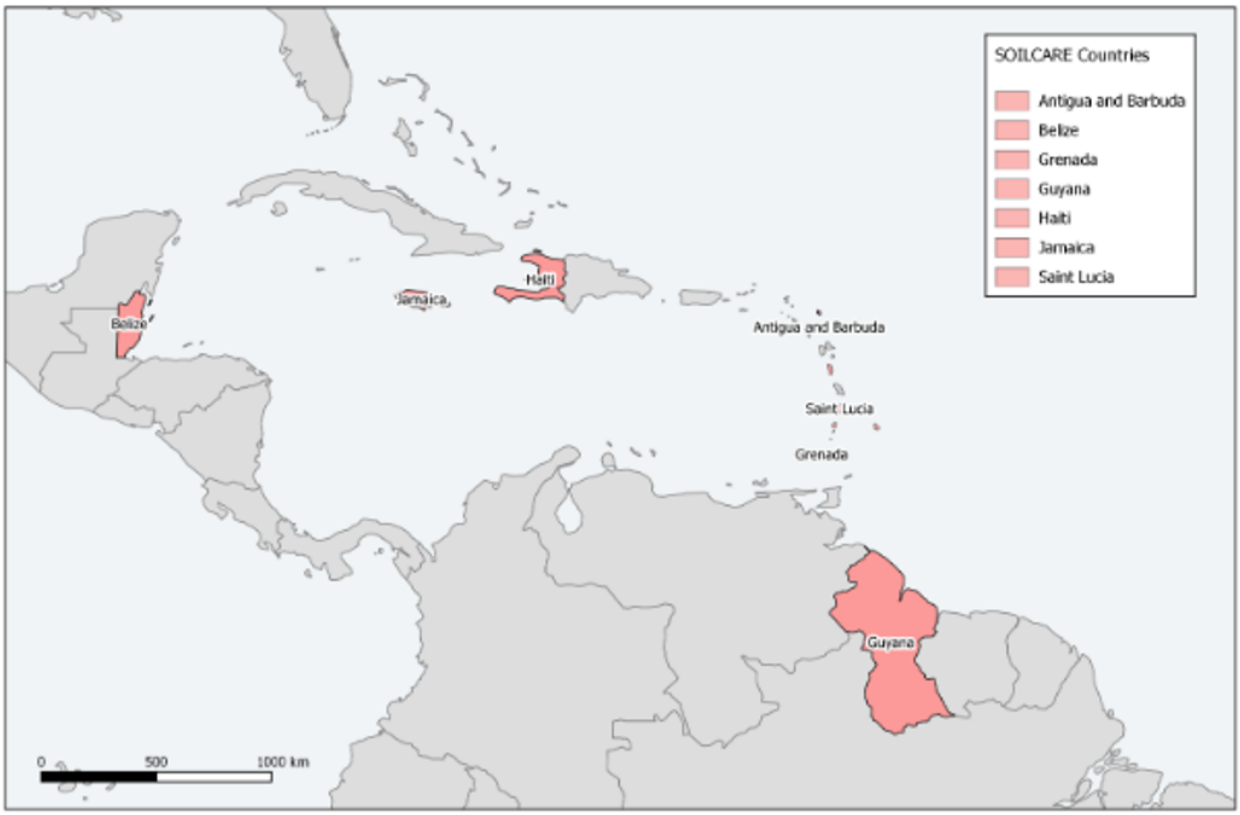
[46] Three Caribbean Member States are members of CAF: Barbados, Jamaica and Trinidad and Tobago.

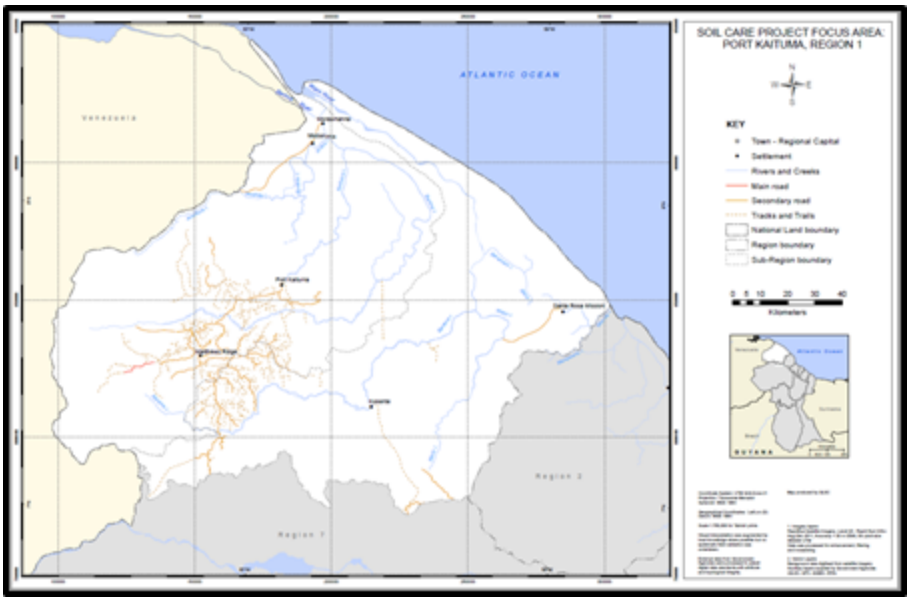
[47] See the Terms of Reference contained in Annex

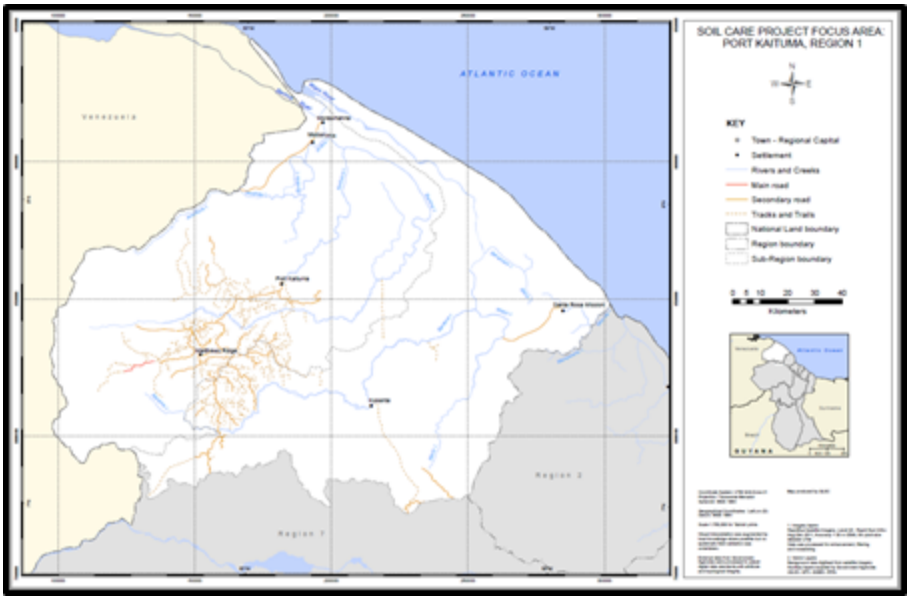
1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

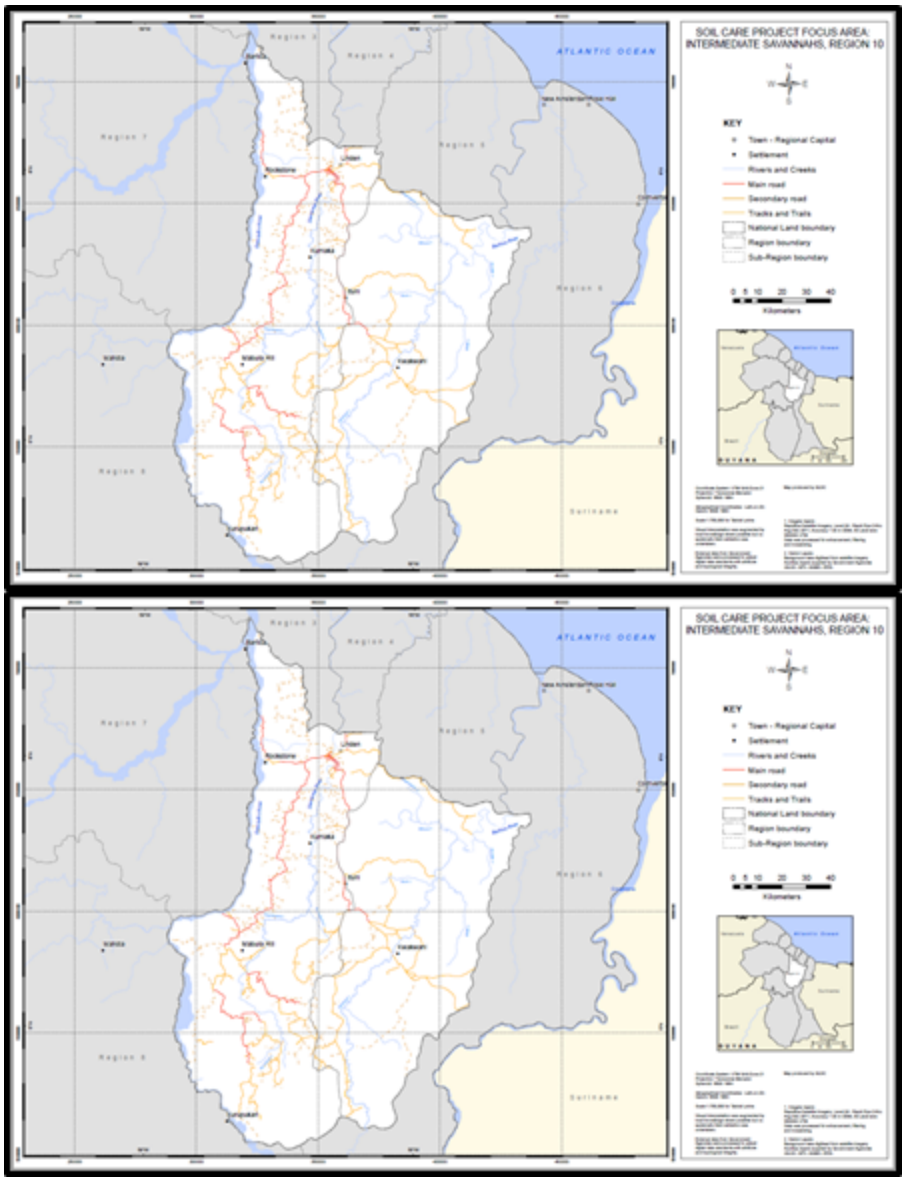
Please refer to the maps in Section 1. Target countries are highlighted below



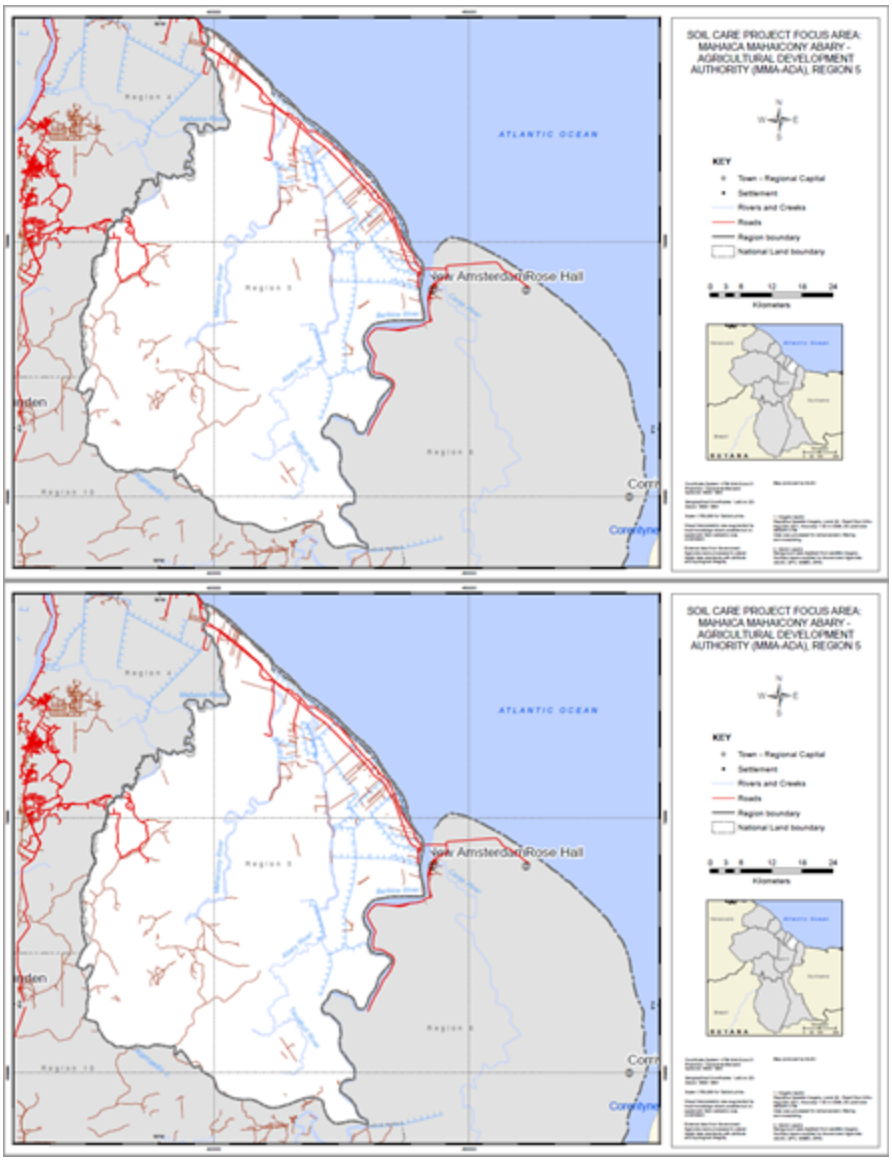




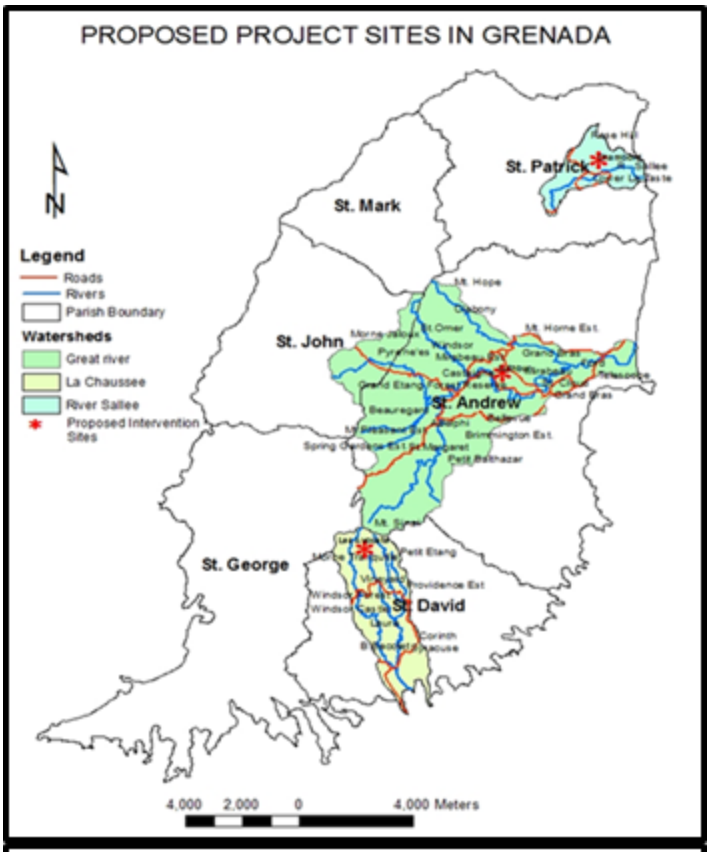
Map 1: Region 1?Port Kaituma

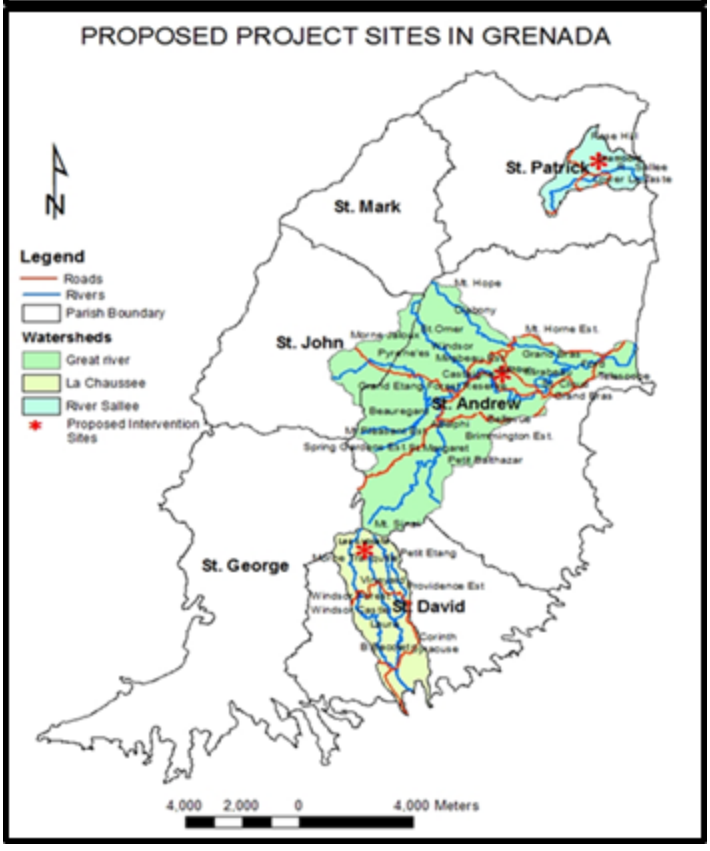


Map 2: Region 10?Immediate Savannahs



Map 3. Region 5 ? Mahaica Mahaicony Abary


PROPOSED PROJECT SITES IN GRENADA
N
Legend
Roads
Rivers
Parish Boundary
Watersheds
Great river
La Chaussee
River Sallee
Proposed Intervention Sites
St. Patrick
St. Mark
St. John
St. Andrew
St. George
St. David
4,000 2,000 0 4,000 Meters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River Sallee
Proposed Intervention Sites
St. Patrick
St. Mark
St. John
St. Andrew
St. George
St. David
4,000 2,000 0 4,000 Meters

Map 4: Land Degradation Hot spots which were identified by the LDN/TSP for the main island of Grenada

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

N/A

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
The Caribbean Community and its Organs (e.g. the Conference of the Heads of Government, Council on Trade and Economic Development (COTED) etc.)	Other ? Decision Maker (Strategic Advice)	Regional Government Bodies	**Project preparation** The project was presented and discussed during meetings of the different organs to obtain their guidance and to align with regional policy frameworks **Implementation** During project implementation, will be consulted at least once a year during the Joint COTED-Environment and Agriculture meeting to be organized by the PISLM	Representatives agreed to integrate the project into the various Policy Frameworks of the Community as well as to provide the regional policy framework for the implementation of the various Project Outputs.
The PISLM High Level Ministerial Group	Other ? Decision Maker (Strategic Advice)	Regional Government Bodies	**Project preparation** The project was presented and discussed during meetings of the PISLM High Level Ministerial group **Implementation** During project implementation, PISLM will report periodically to the High Level Ministerial Group	Agreed to provide overall policy oversight for the project and to advice regarding integration with the various Caribbean Community Policy Framework.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Partnership Initiative for Sustainable Land Management (PISLM) Support Office	Partner	Regional Government Bodies	**Project preparation** PISLM led project design **Implementation** PISLM is the Executing Agency. Will lead project implementation	PISLM will act as the Executing Agency for the project implementation phase.
Ministries of Environment and Agriculture in the participating countries.	Partner	National government institutions	**Project preparation** Met periodically during project design at the national level as well as during the launch and validation workshops **Implementation** As main project partners, will benefit from capacity building activities under comp. 1 and 5, and will participate in the design of activities under Comp. 2, 3, and 4.	Participated during national consultations in project design and validation.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Caribbean Institute of Meteorology and Hydrology (CIMH)	Partner	National government institutions	**Project preparation** Met periodically during project design at the national level as well as during the launch and validation workshops **Implementation** Will participate in the project steering committee. Will provide advice in the design of project components, particularly in the design of climate smart farms	Will provide support to the project on climate related issues, in particular on drought monitoring and forecasting through its Caribbean Drought and Precipitation Monitoring Network (CDPMN)
Indigenous Peoples and their Organisations	Beneficiaries	Local communities	**Project preparation** Participated in project design during national consultations **Implementation** As project beneficiaries will be actively involved in project design. The project will make every effort to engage them in the FPIC process according to national and FAO guidelines.	Significant interest in benefiting from project activities. Interested in participating in components 2, 3, and 4 as beneficiaries. Will benefit from capacity building activities,

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Youth Organisations in the Participating Countries	Beneficiaries	Local communities	**Project preparation** Participated in project design during national consultations **Implementation** As project beneficiaries will be actively involved in project design, particularly under components 2, 3, and 4. Will participate during national activities.	The competent national organisation for Youth and/or voluntary umbrella organization representing them will sit on the National Inter-Agency Advisory Group. One of the principle functions will be to ensure that the Executing Agency involves youth in the various components of the project. A strategic goal of various components, in particular, Component 3 is to attract youth involvement in agriculture

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Women?s Organisation in the Participating Countries	Beneficiaries	Local communities	**Project preparation** Participated in project design during national consultations **Implementation** As project beneficiaries will be actively involved in project design, particularly under components 2, 3, and 4. Will participate during national activities and regional knowledge sharing activities. The project will provide incentives to ensure their participation.	At the national levels in the participating countries, the competent national organisation for the promotion of women?s rights (e.g. Ministries/Bureaus of Women?s Affairs etc.) and/or voluntary umbrella organization representing women?s groups will sit on the National Inter-Agency Advisory Group. One of the principle functions will be to ensure that the Executing Agency works with communities and organizations, as may be necessary, to ensure gender equity in participation of women in project activities and to help ensure that the socioeconomic benefits resulting from project activities impact equally on the lives of woman.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Farmers organizations in the Participating countries	Beneficiaries	Local communities	**Project preparation** Participated in project design during national consultations **Implementation** As project beneficiaries will be actively involved in project design	Role in the Project: Farmers? organizations will participate by providing inputs on sustainable agricultural approaches that could be promoted by the project, and on the best delivery mechanisms for those approaches.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Academia, in particular, the University of the West Indies, St. Augustine Campus, Trinidad and Tobago, University of Guyana, Guyana and the University of Belize, Belize.	Partner	Resource partner Non-governmental organization	**Project preparation** Participated in project design during national and regional consultations **Implementation** As project partners, will participate in the annual Regional Project Steering Committee. Will be actively involved in project design and execution.	UWI was Selected as responsible agency for implementing Component 1 by project partners (PISLM and country representatives) University of Guyana will provide technical and scientific support to the Government of Guyana in implementing its national project activities (Comp. 2 and 3) University of Belize, will provide technical and scientific support to the Government of Belize in the implementation of component 4. The Universities will also participate actively sit on the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group as well as assist with the delivery of the training aspects of the project.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Civil Society and Other Major Groups, in particular, Foundation for Research Innovation Enterprise Entrepreneurship Training and Development in the Organisation of Eastern Caribbean States (OECS) (FRIEETAD).	Beneficiaries	Civil society organization	**Project preparation** Participated in national level consutlations **Implementation** As project partners, will participate in the annual Regional Project Steering Committee. Will be actively involved in project design and execution of field level activities under Components 2, 3, and 4	Provision of training, particularly in the OECS participating Member States as well as providing back stopping to the National Project Units in the OECS Member States as a means of strengthening national capacity.
Caribbean Development Bank (CDB)	Other	Resource partner/Donor	**Project preparation** Participated in project design during regional consultations **Implementation** As project partners will participate in RPSC	Will support project by mobilizing private and public funds for specific aspects of the project implementation. Provide technical assistance in structuring financial options for post project continuation within Caribbean SIDS.

Stakeholders	Stakeholder Type	Stakeholder Profile	Consultation Methodology	Findings
Caribbean Agricult and Research and Development Instit (CARDI	Regional Partner	International institution	**Project preparation** Participated in project design during regional consultations **Implementation** As project partners will participate in RPSC	CARDI will provide technical guidance and training in sustainable agricultural practices, as may be necessary as well as participate actively in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group various Project Platforms
Inter-American Institute for Cooperation in Agriculture (IICA)	Regional Partner	International institution	**Project preparation** Participated in project design during regional consultations **Implementation** As project partners will participate in RPSC	IICA will provide technical guidance and training in sustainable agricultural practices, as may be necessary as well as participate actively in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group and the various Project Platforms.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

1. A sustained consultation process was undertaken as part of the PIF preparation process and continued during the PPG Phase of the Project Development. Since August 2018 an intensive consultative process was launched to allow countries to clearly define, not only their interest in participating in the project but also to define the various interventions which should form part of the project. The consultation process was led and coordinated by the PISLM Support Office in the following countries were Antigua and Barbuda, Belize, Barbados, Dominica, Grenada, Guyana,

Jamaica, Haiti, Saint Vincent and the Grenadines and St Lucia. In all the countries visited, consultations were held with the UNCCD and GEF Focal Points as well as the Ministries of Environment and Agriculture and key Major Groups, in particular, civil society and academia. The inputs from the participating countries were consolidated into a briefing document which was reviewed by the High-Level Ministers Meeting of the PISLM held in October 2018 in Guyana and approved by the meeting.

2. The preparation of the PIF commenced following the Decision of the High Level Ministers Meeting of the PISLM agreed that ?all the volunteer country Parties implementing LDN-TSP from CARICOM, will allocate funding from their GEF 7 STAR allocation for Land Degradation towards the implementation of SOILCARE Project? as an ?essential pillar for the sub-region in meeting its obligations under the UNCCD and SDG 15.3? and that the PISLM shall serve as the Executing Agency for this project (Decisions of the 3rd PISLM High Level Meeting, October 2018). Once prepared, the first draft of the PIF was circulated to all participating countries ahead of the convening of the 7th Meeting for the Review of the UNCCD held in Guyana in January 2019 for review. The High Level Ministers Meeting Group of the PISLM comprises of both Ministers of Environment and Agriculture, depending on which Ministry serves as the Focal Point for the UNCCD.

3. A Validation Workshop of the project was convened on the side-lines of the UNCCD Committee to Review the Implementation of the Convention (CRIC), held in Georgetown, Guyana, 28 ? 30 January, 2019, to review the Draft PIF and to validate its content. Following the convening of the Validation Workshop, an Information Template was circulated to all the participating countries to solicit additional information and to identify any gaps in the Draft PIF which needed to be filled. Once the Draft PIF was revised it was again submitted to the participating countries for a further review before it was submitted to the GEF for consideration. In addition, to the Country Parties, the Draft PIF also benefited from the input of a number of regional organisations, including, the Caribbean Community Secretariat; the University of the West Indies, CARDI and IICA.

4. The consultations which started during the preparation phase of the PIF for which the STAP appreciated ?[?] the depth of consultation [?]? continued during the PPG Phase. National consultants were assigned for each of the participating countries to carry out various consultations and analyses of the National Implementation Sites. These were complimented by visits by the Core Consultants who have the responsibility of preparing the Project Document. To complement the technical work which was undertaken further analyses and oversite was provided by a number of Committees. Firstly, the outputs of the work undertaken during the PPG was synthesized and presented to the Task Force of the PISLM and the High-Level Ministerial Body of the PISLM. These were done to keep the participating Member States abreast of the work being undertaken and to receive policy guidance on various issues. These consultations were undertaken at the specific request of the participating Member States.

5. In addition, Technical Meetings were convened on a regular basis between the Core Consultants; the Executing Agency and the Implementing Agency. These Technical Meetings were convened for the Core Consultant to provide updates on the PPG implementation as well as to discuss technical issues underpinning the work being done in the field. To complement the Technical Meeting, Policy Meetings were held periodically between the IA and the Executing Agency to consider policy type issues which could impact of the implementation of the PPG, in light of concerns of the COVI-19.

6. Private sector stakeholders who were consulted during project preparation included a number of small farmers in the various project sites as well as a number of large farmers particularly in Belize and Guyana and farming organisations. These stakeholders will continue to be engaged throughout the project implementation process. During implementation of the project direct consultations will be held with development banks and other similar type financial institutions to explore the nature and type of enabling environment which will be required for them to allocate specific resources for financing sustainable land management in the participating countries. In addition, given the dual focus on climate change resilience and sustainable soil and land management, the National Climate Change Focal Points for the participating countries will be engaged directly in the

project through their respective National Project Steering Committees, so will the National Meteorological Offices in each of the participating Member States. Regional level organizations with a climate focus that will also be involved in project implementation are the **Caribbean** Institute for **Meteorology** and Hydrology (CIMH) and the University of the West Indies.

7. The table immediately hereunder presents how the project stakeholders will be engaged and the means by which information will be disseminated to these stakeholders. There are a number of mechanisms built into the project design which facilitate the engagement of the listed stakeholders. These mechanisms cover a wide spectrum of stakeholders, spanning from policy makers at one end of the spectrum to farmers and local communities on the other side of the spectrum. At the policy level the main vehicle for their engagement will be through the PISLM Ministerial Body and the Council of Trade and Environment (COTED) of the Caribbean Community. In terms of regional technical personnel attached to a range of Regional Institutions their engagement will be accomplished in part through the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group which comprise of a number of regional institutions (e.g. University of the West Indies, CARDI, Caribbean Community Secretariat Directorates of Environment and Sustainable Development and Agriculture, the Agricultural Directorate of the Organisation of Eastern Caribbean States (OECS); FAO sub regional and regional programmes, IICA and Civil Society etc.). At the national level, two mechanisms?the Caribbean Soil Support Group which comprise of the National Focal Points of the UNCCD and GSP, respectively and the National Project Steering Committees? are built into the project design to facilitate effective participation and exchange of information on project activities, their implementation and the results resulting therefrom.

8. As it relates to the dissemination of information about the project and its activities, provision is made in the project design for the establishment of the Caribbean LDN and SLM Knowledge Hub which will play a key role in ensuring effective communication and public awareness on the project, its activities, results and achievements. To accomplish this task, the Knowledge Hub will have at its disposal a number of instruments, including, inter alia, a Learning and Data/Information Gathering and Dissemination Mechanism; the publication of the Caribbean Land-Soil Outlook 2030 to facilitate dissemination of knowledge generated by the project and a Regional SLM and LDN Public Education and Awareness Initiative as the basis for establishing and implementing a Sustained Public Education and Awareness Programme on SLM, SSM and LDN. All of these instruments will be used to effectively communicate information regarding project and in particular, to keep the participating countries and their stakeholders constantly apprised and informed and to receive pertinent feedback as necessary.

Stakeholders	Summary of Mandates	Roles in Project Implementation
The Caribbean Community and its Organs (e.g. the Conference of the Heads of Government, Council on Trade and Economic Development (COTED) etc.)	The Organs of the Community are its Decision-making bodies which reflect the will of the Community.	Consider the Outputs of the project and agree to their integration into the various Policy Frameworks of the Community as well as provide the regional policy framework for the implementation of the various Project Outputs.

Stakeholders	Summary of Mandates	Roles in Project Implementation
The PISLM High Level Ministerial Group	Policy directives and political support for strengthening Sub-Regional Land Management agenda and the Caribbean vision for SLM	The Minister who sits on the PISLM High Level Ministerial Meeting will have overall policy oversight for the project. They will also play an important role in ensuring that the project outputs are integrated into the various Caribbean Community Policy Framework.
Partnership Initiative for Sustainable Land Management (PISLM) Support Office	PISLM was established based on a decision taken at the Caribbean Sub-Regional workshop on Land Degradation in February 2004. PISLM serves as a mechanism to facilitate exchange of good land management practices between participating countries, and serves as a mechanism for stimulating the replication of approaches, tools and methodologies throughout the region.	PISLM will act as the Executing Agency for the project implementation phase. The PISLM will establish a Regional Project Office at its Headquarters in Georgetown, Guyana with Sub-Offices at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago.

Stakeholders	Summary of Mandates	Roles in Project Implementation
The PISLM Task Force	The main function of the PISLM Task Force is to provide operational policy guidance to the PISLM taking into consideration the policy directives which are provided by the various Ministerial and Inter-government Bodies.	monitor the application of the resources of the recurrent and capital budgets of the PISLM in order to ensure that such resources are being employed in accordance with this Agreement and the Work Programme of the PISLM approved by the Task Force
United Nations Food and Agriculture Organization (UN FAO), in particular, the FAO Regional Office for the Caribbean based in Guyana and it?s National Offices which have responsibility for FAO activities in those countries.	The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations that leads international efforts to defeat hunger. Its goal is to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active and healthy lives.	The Food and Agriculture Organization (FAO) will be the GEF Implementing Agency for the proposed project, and as such, will provide Project Cycle Management Services as Established in the GEF Policy as well as provide technical support to the PISLM and the participating countries, as necessary and as requested. FAO will, in its capacity of Implementing Agency, will have responsibility **for** providing oversight, technical backstopping and supervision of project implementation to ensure that the project is being carried out in accordance with GEF guidelines and and requirements. Technical backstopping will be provided by FAO in coordination with government representatives participating in the Regional Project Steering Committee (RPSC).

Stakeholders	Summary of Mandates	Roles in Project Implementation
Ministries of Environment and Agriculture in the participating countries.	The legal mandates for Environment and Agriculture, respectively.	The participating countries in the project will have multiple roles. At the Policy Level, The UNCCD Focal Points of the participating countries which will also serve as the Focal Point for this project, will be responsible for the overall management of the Project at the national level and ensuring effective participation in the regional activities being undertaken under the project.
National Focal Points in the Participating Countries for SLM (UNCCD); SSM (Global Soil Partnership; Climate Change (UNFCCC) and GEF	National Representatives with responsibility for UNCCD, SSM, UNFCCC and the GEF, respectively.	Serve as the Focal Points for these entities and processes on the behalf of their respective country.
Caribbean Institute of Meteorology and Hydrology (CIMH)	To assist in improving and developing the Meteorological and Hydrological Services as well as providing the awareness of the benefits of Meteorology and Hydrology for the economic well-being of the CIMH member states. This is achieved through training, research, investigations, and the provision of related specialised services and advice.	Will provide support to the project on climate related issues, in particular on drought monitoring and forecasting through its Caribbean Drought and Precipitation Monitoring Network (CDPMN)

Stakeholders	Summary of Mandates	Roles in Project Implementation
Indigenous Peoples and their Organisations	Indigenous Peoples are a major target group of this project, in particular, in those countries (e.g. Guyana) where specific activities are being undertaken with the participation of Indigenous peoples	At the national levels in the participating countries, the competent Indigenous Peoples organisation, particularly, in those countries, which have a significant number of Indigenous Peoples (e.g. Dominica and Guyana) will sit on the National Inter-Agency Advisory Group. One of the principle functions will be to ensure that the Executing Agency involves Indigenous Peoples, especially the youth in the various components of the project. Specific project activities involving indigenous peoples will be undertaken in Guyana.
Youth Organisations in the Participating Countries	A major target group for the project will be the youth of the participating countries.	At the national levels in the participating countries, the competent national organisation for Youth and/or voluntary umbrella organization representing them will sit on the National Inter-Agency Advisory Group. One of the principle functions will be to ensure that the Executing Agency involves youth in the various components of the project. A strategic goal of various components, in particular, Component 3 is to attract youth involvement in agriculture
Women?s Organisation in the Participating Countries	Women will be one of the major beneficiaries of the project, and will participate in all aspects of the project. .	At the national levels in the participating countries, the competent national organisation for the promotion of women?s rights (e.g. Ministries/Bureaus of Women?s Affairs etc.) and/or voluntary umbrella organization representing women?s groups will sit on the National Inter-Agency Advisory Group. One of the principle functions will be to ensure that the Executing Agency works with communities and organizations, as may be necessary, to ensure gender equity in participation of women in project activities and to help ensure that the socioeconomic benefits resulting from project activities impact equally on the lives of woman.

Stakeholders	Summary of Mandates	Roles in Project Implementation
Farmers organizations in the Participating countries	The farmers? organizations and their members in the participating countries are the downstream beneficiaries of the project.	Role in the Project: Farmers? organizations will participate by providing inputs on sustainable agricultural approaches that could be promoted by the project, and on the best delivery mechanisms for those approaches.
Academia, in particular, the University of the West Indies, St. Augustine Campus, Trinidad and Tobago, University of Guyana, Guyana and the University of Belize, Belize.	To Undertake Research and Training	In the case of the UWI, responsibility for implementing Component 1 has been assigned to this organisation under the overall direction of the PISLM. It, therefore, has the principle role of ensuring that Component 1 is implemented in an effective and efficient manner. In the case of the University of Guyana, they will provide technical and scientific support to the Government of Guyana in implementing its national project activities; sit on the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group as well as assist with the delivery of the training aspects of the project. In the case of the University of Belize, they will provide technical and scientific support to the Government of Belize in implementing its national project activities; sit on the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group as well as assist with the delivery of the training aspects of the project. The Universities will also participate actively sit on the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group as well as assist with the delivery of the training aspects of the project.

Stakeholders	Summary of Mandates	Roles in Project Implementation
Civil Society and Other Major Groups, in particular, Foundation for Research Innovation Enterprise Entrepreneurship Training and Development in the Organisation of Eastern Caribbean States (OECS) (FRIEETAD).	In the case of FRIEETAD this Foundation is Headquartered in Saint George?s, Grenada, with subsidiary offices in Antigua and Barbuda, the Commonwealth of Dominica, Saint Kitts Nevis, Saint Lucia and Saint Vincent and the Grenadines. The objectives of the Foundation, include, inter alia, promotion of Research, Innovation, Enterprise and Entrepreneurship through Training particularly among the youth and women in the OECS; the development via public private partnerships in all fields of socio-economic endeavour while tackling socio-economic issues of unemployment, gender issues, and governance primarily in the OECS and development of progressive-minded socio economic interests and jointly undertake programmes while promoting strategic alliances with Private sector, Government interests and their respective	Provision of training, particularly in the OECS participating Member States as well as providing back stopping to the National Project Units in the OECS Member States as a means of strengthening national capacity.

Stakeholders	Summary of Mandates	Roles in Project Implementation
Caribbean Development Bank (CDB)	Assist Borrowing Member Countries in, but not limited to: optimise the use of their resources, developing their economies and expanding production and trade, promote private and public investment, encourage financial upturn in the Region and facilitate business activity and expansion provide technical assistance to its regional borrowing members support	Assist in mobilizing private and public funds for specific aspects of the project implementation. Provide technical assistance in structuring financial options for post project continuation within Caribbean SIDS.

Stakeholders	Summary of Mandates	Roles in Project Implementation
Caribbean Agricultural and Resear and Development Institute (CARD	An Institution of th Caribbean Commu charged with the responsibility of providing for the research and development needs the agriculture of t region as identifie national plans and policies, as well as providing an appropriate researc and development service to the agricultural sector member countries.	CARDI will provide technical guidance and training in sustainable agricultural practices, as may be necessary as well as participate actively in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group various Project Platforms
Inter-American Institute for Cooperation in Agriculture (IICA)	IICA supports member countries to improve the productivity and competitiveness of their agricultural sectors, including improving agriculture?s capacity to mitigate and adapt to climate change. In Dominica, IICA provides technical support on rural livelihoods, women and youth in agriculture, apiculture, and agrotourism, and it supports the development of agricultural policy and strategic plans.	IICA will provide technical guidance and training in sustainable agricultural practices, as may be necessary as well as participate actively in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group and the various Project Platforms.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier; Yes

Member of project steering committee or equivalent decision-making body;

Executor or co-executor; Yes

Other (Please explain) No

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

1. Gender is indeed an important issue especially within this Region and as such, it has been taken into consideration in the project design, particularly in the field based activities. In the consideration of gender at the regional level the overarching framework which have been used to guide the integration of gender equality, women?s empowerment and the participation of indigenous peoples into the project is the Charter of Civil Society for the Caribbean Community adopted by the Conference of the Heads of Government of the Caribbean Community. The Charter of Civil Society has been signed by all of the participating SOILCARE Member States. With respect to the Memorandum of Understanding (MOU) signed between the Caribbean Community (CARICOM) Secretariat and UN-Women to support the Community?s work on gender and regional statistics, this makes provision for the collaboration in the provision of Caribbean-wide data, statistics and analysis on the implementation of the gender dimensions of the Sustainable Development Goals (SDGs) and the SIDS Accelerated Modalities of Action known as the SAMOA Pathway. This project to the extent practicable contribute to these statistics. These regional instruments are complemented by the National Policies of the respective countries on Gender Equity and Equality (e.g. Government of Dominica adopted a National Policy and Action Plan for Gender Equity and Equality in 2006 etc.), which provide further guidance on these issues.

2. In terms of this project specifically and how gender equality, women?s empowerment and indigenous peoples are taken into account and mainstream into the project, the above-mentioned frameworks will be used for mainstreaming gender into all areas of this project, as gender and social issues are important drivers and incentives for achieving global environmental benefits and therefore are a critical element for the success of the project. To facilitate this, at the national levels in the participating countries, the competent national organisation for the promotion of women?s rights (e.g. Ministries/Bureaus of Women?s Affairs etc.) and/or voluntary umbrella organization representing women?s groups; Youth Affairs and Indigenous Peoples Affairs (as necessary) will be core

representatives on the National Advisory Groups for this project. The representative from the Women?s organisation will have as one of the principle functions to ensure that the Executing Agency work with communities and organizations, as may be necessary, to ensure gender equity in participation of women in project activities and to help ensure that the socioeconomic benefits resulting from project activities impact equally on the lives of woman. The representatives of Youth and Indigenous Peoples will perform similar functions.

3. The project is designed in a manner which places emphasis on the promotion of gender equality and women empowerment. Hence gender issues will be mainstreamed in all of the project activities. In addition, all the data collected by this project will be disaggregated by sex. This will provide for a more reliable gender related information on this project. An important means, included in the project design of ensuring equity between the sexes, is the use of what is referred to as the ?Forty-Percent Rule??a Rule which makes provision for at least 40 percent of women, youth and indigenous peoples to be involved in the various activities of the project. Hence, at least 40 percent of persons at the managerial level of the project should be female, subject to, appropriate qualifications and experience. Further, as highlighted in *Outcome 5*.1., at **least forty percent of the training provided through SOILCARE Phase 1, will be for women** as a means of ensuring skill development to ensure greater access and application of climate smart technology and approaches by women. In this regard, SCCF contribution leverage form the GEF will be directed to mainstreaming adaptation into regional and sub-regional policies and strategies approximately 1000 farmers (minimum 40% women) will benefit from training and capacity-building activities on risk assessment and CSA best practices for decision-makers and technicians from relevant counterparts and institutions in Caribbean SIDS in the participating countries. In addition, since women play critical roles in the agricultural value chain including the availability, access, marketing and utilization of food, specific focus will be place in the development of the Marketing Strategies (***Output 3.1.3: Climate Smart Agricultural-baseline and marketing strategy)*** of the roles women play for each of the Climate Smart Model Farms. All knowledge management activities will be gender mainstreamed, including the integration of gender dimensions into publications, for instance, presenting sex-disaggregated data, using gender sensitive language in publications and photos that show both women and men and avoid presenting stereotypes. Finally, the project will ensure that women, men, youth and indigenous peoples have access to and benefit from the knowledge created by the project. These measures are included in the project to facilitate gender sensitivity and equality.

4. The main issues faced by women in the Caribbean can be summarized as follows:

? Agriculture sector. There is highly unequal participation of men and women in the agriculture sector. This is linked to gender-based inequalities in their access to land, credit and other means of production, and make women and their families more vulnerable to poverty
? Gender-based inequalities in accessing labour, financial capital, technology and market information makes women less equipped to face the challenge of transitioning from subsistence farming to commercial agricultural production
? Agricultural extension officers are not sufficiently aware of the importance of gender-equitable service provision, leading to (sometimes unintentionally) exclude women from benefits and decision-making
? Women participate significantly in unpaid work in subsistence agriculture, which is neither quantified nor validated in labour force statistics
? Women have important roles in key value chains (i.e. cassava in Belize), formalization of women?s cooperatives can help women achieve greater access to financial and non-financial services for productive projects, improving their economic autonomy
? Tourism and eco-tourism present significant opportunities for economic growth and poverty reduction, though the sector has suffered significantly from the COVID-19 pandemic. The sector presents gendered occupational segregation as women tend to predominate in the lower-wage occupations.

? Education and training are key enabling factors for employment in the different economic sectors and for generating entrepreneurship. Despite higher educational performance, women are under-represented in targeted growth areas, better paid jobs, and leadership and decision-making
? Governance and accountability. Leadership and decision-making is a deeply gendered issue globally, and despite incremental increases in female participation in high-level decision-making in the Caribbean, there is still a gender gap.

5. Please refer to the gender action plan and budget that will be implemented to address gender issues raised:

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources; Yes

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

1. Yes there will be private sector engagement in the project. This is important in order to address the barrier relating to the private sector investing directly in SLM as well as not insisting enough of promoting Sustainable land use management when financing various sectoral activities (e.g housing, etc.).A specific area of private sector engagement will be to encourage the financial sector to develop more aimed at stimulating innovative financial instruments for investment into land management activities particularly as it relates to sustainable and climate smart agriculture. The concerns about food security during the COVID-19 pandemic which resulted in the disruption of the agri-food value chain has re-focused the policy makers attention of the need for the Region to place more attention to its food security needs. The project will mobilise the Private Sector with the view of enhancing Cooperation with them as well as to explore the enable environment they need in order to provide for more investment in land management issues in the region and mechanisms for sustained private sector support from regional/national financial institutions.

2. Further, given the recent growth of Private Sector Funds which provide access to finance and technical assistance to Small and medium-sized enterprises (SMEs) in the Agricultural Sector, every effort will be made to build linkages with these Funds. The growth of funds such as the Moringa & Green, and the LDN fund which invest in profit-generating sustainable land management and restoration projects provide possible sources of financing LD projects in Caribbean SIDS, led by the private sector. An integral part of the project, therefore, will be the design of bankable projects which could be considered by these private funds for financing. Resources will, therefore, be allocated to enable the PISLM to finance the development of proposals aimed at developing LD investment projects for possible financing by these Funds. The development of bankable projects will be based on the prior review and identification of opportunities with private sector participation. The possibility exists that

some of these bankable projects could be the subject of private-public partnership in land planning and sustainable management in target watersheds (taking into account land potential, legitimate demands for use of the land, socioeconomic and environmental benefits and LDN targets). In addition, there is general consensus that the successful implementation of the Regional LDN Strategy requires cooperation with investment of the private sector. This being the case, a strategic objective of the project is to leverage private sector funds for financing LDN within Caribbean SIDs.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

1. Generally, the risks to this project as outlined in the Table hereunder are low, with the exception of hurricanes and other tropical storms and the recent COVID-19 pandemic. In the case of the former, the main mitigation measure is to build resilience against natural disasters and climate change through the promotion of Climate Smart Agriculture and Drought Risk Management. In the case of the latter, the project will depend on and be guided by the drought monitoring data which is collected by Caribbean Institute for Meteorology and Hydrology (CIMH) and the University of the West Indies. With respect to COVID-19 all the participating countries have put in place a number of Protocol to which the project will adhere. Currently, however, one of the implications of COVID-19 is the restrictions of travel between the participating countries. Should this continue it will have implications for the implementation of some project activities. It is hoped, however, that by the time field-based activities under the project are about to commence at the national level in the participating countries, a significant portion of the population would have been vaccinated.

Risk	Risk level	Mitigation Measures

The participating countries are prone to Natural Disasters, including, inter alia, hurricanes and other tropical systems, flooding, as well as volcanoes and earthquakes, which if occur can pose a risk to achievement of the project outputs. In the case of hurricanes their intensity may be increasing. As a consequence significant damage can result to agriculture, as well as to fruit crops. A good example of this is the case of Grenada after hurricane Ivan in which Grenada?s most important commercial crop, nutmeg, was devastated in a few hours by the hurricane. Since the crop requires 7-8 years, little or no foreign exchange from this source would have been received for almost a decade.	Medium	A major aspect of the project is resilience building against natural disasters and climate change through the promotion of Climate Smart Agriculture and Drought Risk Management. An important focus of the proposed project is to mitigate the risks posed by climate change related natural disasters by strengthening the resilience of ecosystems through the adoption of environmentally sound management practices. A range of mitigation efforts will be implemented including, inter alia; methods to manage soil carbon retention and enhancement; reforestation, sustainable forest management, the promotion of agro-forestry interventions and pasture management as a strategy for minimize damage to pasture resources during drought. In addition, the project makes provision for the training of resource users and managers, alike, including in-field training and demonstration which will prepare them to take the necessary proactive actions to withstand the shocks associated with meteorological events.
Active Participation of Indigenous Peoples	Low	Historically, indigenous peoples have not been sufficiently integrated into regional projects carried out in the region. To a large extent, projects targeting indigenous peoples have been promoted as standalone projects. This project makes specific provision for activities to be undertaken in areas under the jurisdiction of indigenous peoples. Consequently, indigenous peoples and their representatives will participate in the decision making instructional structures (e.g. National Advisory Groups etc.) designed for the implementation of the project.

Farmers resistant to transitioning to the adoption of climate-smart tools, methods and technologies and sustainable livelihood practices	Low	Working in conjunction with the resources users and managers alike, the project will not only introduce these practices theoretically but will also engage them in in-field application and training. A key component of this exercise will be the establishment of marketing linkages to ensure that the products produced are sold, thus given the farmers' livelihood sustainability. The project will is designed to develop sustainable agricultural practices that generate economic benefits for local farmers, as well as forest restoration programmes that employ local residents in collecting, cultivating, planting and monitoring of trees. In addition, information will be readily provided to stakeholder to allow them to make informed decisions, including the availability of targeted awareness materials...
Slow pace of Consideration of the Outputs by the relevant Caribbean Community Organs	Low	A key dimension of the sustainability strategy for this project is the integration of the Outputs in the Caribbean Community Policy Frameworks which informs the actions of the Member States of the Community. The main Organ through which this process must be initiated is through a Special Meeting of COTED [Environment]. The risk is that the COTED [Environment] has not met for the past two years, notwithstanding the need to do so. The PISLM will, therefore, be proactive in working through the PISLM High Level Ministerial Body to ensure that a COTED [Environment] meetings are convened as appropriate and necessary.

Climate Variability and Climate Change	Medium to High	A number of mitigation measures have been integrated into all the components to address the impacts of Climate variability and climate change. This is particularly exemplified in Component 3. Central to the consideration of the impacts of Climate variability and climate change a number of questions will be considered in the implementation of the project: ? How will the project?s objectives or outputs be affected by climate risks over the period 2020 to 2030, and what measures should be taken to minimize those impacts? ? What measures and resilience practices must be implemented to address the impacts of climate change? ? What technical and institutional capacity, and information, will be needed by the various stakeholders to address climate risks and resilience enhancement measures?
The Implications of COVID-19	Medium to High	Given the uncertainty associated with the re-occurrence of COVID-19 in the region during the duration of the project, COVID-19 is identified as a risk which could have an impact on Project Implementation. It should be noted, however, that all the participating Member States have Protocols in place as to how to address COVID-19 related issues. In the execution of the project, particular attention will be paid to the various Protocols which are operative in the participating countries.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

1. Since this project is designed to provide the foundation for a 10 Year LD Programme, to be delivered in three Phases (2021-2024, 2025-2027, 2028--2030); of which this project represents Phase 1 (2021 to 2024), coordination, as a foundational principle, at multiple levels, is a sine qua non. The project will build synergies with other relevant GEF projects being implemented, both at the national level in the participating countries and regionally. In particular, synergies will be built between SOILCARE and the GEF Inland Programme in Chemicals which is being implemented by UNEP and FAO. This Programme has the objectives of (i) to prevent the buildup of materials and chemicals in the environment that contain POPS and Mercury and other harmful chemicals in SIDS and (ii) to manage and dispose of existing harmful chemicals and materials in SIDS. In this regard, potential synergies could be developed with Components 1, 2, 4 and 5 of SOILCARE.

2. Most of the countries (Antigua and Barbuda, Barbados, Guyana, Grenada, Haiti, Jamaica, Saint Lucia) in this project are participating in the GEF-IUCN Land Degradation Neutrality-Target Setting

Process. At the end of the LDN-TSP, participating countries will have developed a set of targets, based on baseline data, which they will track until 2030 (SDG 15 commitment), including indicators on Land Cover, Land Productivity (metric: net primary productivity), and Carbon Stocks above and below ground (metric: SOC). The proposed project builds upon this exercise and will also contribute additional data on issues such as soils and soil carbon, which are currently in need of being updated.

3. In addition, several past projects have established data and/or built capacities that will benefit the proposed project. The GEF-UNDP Sustainable Land Management project (2008-2012) generated lessons for generating significant community support and ownership of SLM practices through community involvement and education on SLM issues, which will be used to guide the implementation of field-based activities under Components 1 and 2 of the proposed projects. Other National GEF projects of relevance (see GEF projects website and latest GEF council report and check with countries mentioned above etc.

Project Management

4. In terms of Project Management, a Structure (See Project Management Structure) has been designed that takes into account a range of institutions which will play a role in the implementation of the project. First it highlights the multiple reporting structures, which the project must span, including, inter alia, that of the FAO, in its capacity as the Implementing Agency; PISLM, both in its capacity as the Executing Agency for the project as well as the; the Caribbean Community, regional participating organisations, particularly the University of the West Indies which will play leading roles in executing various aspects of the project and last, but not least, the participating countries, their respective Ministries and Department and a wide cross-section of stakeholders at the national level. The key elements of the Project Management Structure are outlined in Figure entitled ?SOILCARE Project Management Structure.?

5. The Food and Agriculture Organization (FAO) is the GEF Implementing Agency (IA) and the Partnership for Sustainable Land Management (PISLM) for Caribbean SIDS is the Executing Agency for Project, respectively. Consistent with GEF Policy with respective to IA, FAO will have overall responsible for providing project cycle management and accountability and responsibility to the GEF for delivery of the results. More specifically, FAO in its capacity as IA, and in accordance with GEF Policies and Regulations will carry out the following responsibilities.

? Providing consistent and regular Project oversight to ensure that GEF policies and criteria are adhered to and that the project meets its objectives and achieves expected outcomes

? Performing the liaison function between the project and the GEF Secretariat

? Regularly monitoring project progress and performance and rating progress towards meeting project objectives, project execution progress, quality of project monitoring and evaluation, and risk

? Ensuring that both GEF and FAO guidelines and standards are applied and met (technical, fiduciary, M&E)

? Ensure technical quality of products, outputs and deliverables

? Ensuring timely disbursement/sub-allotment to executing agencies, based on agreed legal documents

? Administrate funds from GEF in accordance with FAO rules and procedures, including, inter alia, approval of budget revision, certify fund availability and transfer funds

? Providing technical backstopping, support and assessment of the execution of the Project

? Providing guidance, if requested, to main TORs/MOUs and subcontracts issued by the project

? Follow-up with EA for progress, equipment, financial and audit reports

? Certify project operational completion

? Conduct at least one supervision mission per year

6. In its role as IA, FAO will utilize the GEF fees to support the project in a number of ways; namely, as follows:

? A Budget Holder: The FAO Subregional Coordinator for the Subregional Office for the Caribbean will act as budget holder and will have the responsibility to ensure that the resources allocated for the implementation of Project activities are transferred to the Executing Agency in an efficient and timely manner to facilitate their implementation. The FAO Subregional Coordinator for the Subregional Office in its capacity as Budget Holder and will be supported by the GEF Project Task Manager for the Caribbean;

? A Project Technical Officer, based in FAO Regional Office, who will liaise with the Executing Agency and provide and/or arrange for FAO technical backstopping on project related activities, as necessary and agreed; and

? A Funding Liaison Officer within FAO will monitor and support the project cycle to ensure that the project is being carried out in accordance with GEF guidance and reporting is done in accordance with agreed standards and requirements.

? Supporting FAO Technical experts in the technical backstopping of the implementation of activities under the project as may be necessary.

7. The PISLM, on the other hand, as the Executing Agency, will have responsibility for the overall day to day management for Project Implementation, through its **SOILCARE Regional Project Unit.** The overall responsibility for coordinating the execution of the regional interventions rest with the PISLM, in its capacity as Executing Agency, with the assistance of the FAO, in its capacity as the Implementing Agency.

The PISLM shall have the following roles:

? Oversee Project execution in accordance with the project results framework and budget, the agreed work plan and reporting tasks.

? Provide the necessary support to the national and regional entities involve in the Project to ensure that the objectives of the project are met.

? Signing of relevant Legal Instrument to allow disbursement of funding

? Provide the PISLM Liaison Office at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago and the National Project Offices in each of the participating countries to ensure the effective and efficient implementation of the Project.

? Support the PISLM Liaison and National Project Coordinators in discharging their respective responsibilities under the project in an effective and efficient manner.

? Provide technical expertise through its personnel and networks.

? Ensure technical quality of products, outputs and deliverables, including reports to FAO.

? Provide guidance and coordination to the co-executing agencies and national stakeholders, in conjunction with the PISLM Liaison Office at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago and the National Project Coordinators in the participating countries.

? Support logistical issues, e.g. through organization of meetings and provision of relevant facilities.

? Addressing and rectifying any issues or inconsistencies raised by the IA

? Support the PISLM Liaison Office at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago and the National Project Coordinators in regular Project reporting, including progress, financial and audit reporting to IA.

Mobilisation of Regional Secretariats and Institutions in the implementation of project activities

8. To facilitate this function a **SOILCARE Regional Project Unit** will be established. It will be staffed by a **Regional Project Manager; a SOILCARE Regional Technical Officer, Procurement Officer and a Secretary.** In addition, the **SOILCARE Sustainable Soil Management (SSM), Sustainable Land Management (SLM) and Climate Change Adaptation (CCA) Mainstreaming Specialist will also form part of the Project Unit.** The principle responsibility of this person will be to facilitate mainstreaming of adaptation into regional and sub-regional policies and strategies and the coordination of the activities financed by the Land Degradation Set Aside resources. **T**his post will be financed in the main by the resources leveraged from the SCCF contribution to SOILCARE to facilitate mainstreaming of adaptation into regional and sub-regional policies and strategies and the LD Set Aside allocation.

9. **Supporting Project Executing Entity: The Faculty of Food and Agriculture (FFA) University of the West Indies, St. Augustine Campus, Trinidad and Tobago. The Faculty of Food and Agriculture (FFA)** consists of the Department of Agricultural Economics and Extension, the Department of Food Production and the Department of Geography. The mission of the Department of Food Production is to contribute to the sustained improvement of the region?s well-being through outreach, provision of relevant education and research in tropical food and agricultural production and utilisation, sustainable environment, and natural resource management. It seeks to advance education and create knowledge through excellence in teaching, research, innovation, and outreach in food production and agriculture, thus supporting food and nutrition security nationally, regionally and internationally.

10. The **Department of Food Production** which provides academic training in wide cross section of areas, including, *inter alia*, Organic waste management and utilisation; Soil and land use studies; Soil conservation and erosion management; Engineering properties of soils; Soil fertility and plant nutrition, will play an important and critical role in the implementation of various aspects of the SOILCARE Phase I.

Similarly, the **Soil Chemistry Laboratory** which is part of the Faculty, will support the SOILCARE Phase I, and serve as the apex institution of the **Network of Soil Analytical Centres of Excellence**, one of the project key outputs. The **Soil Chemistry Laboratory** is well equipped to carry the requirements under SOILCARE Phase 1. Equipment contained therein include, inter alia, an Agilent, FS (Fast Sequential) 240 Atomic absorption Spectroscopy with the capability of performing flame and furnace operations analysing elements at very high speeds.

11. Another FFA facility which SOILCARE Phase 1 will utilize is **the Agriculture Innovation Park (AIP**) which is located on two hundred (200) acres of land at the Orange Grove Estate, East Trinidad. The overall objective of the AIP is to be a Centre of Excellence for research, innovation development, teaching and demonstration of tropical crop production in addition to showcasing a range of crop production and value-added technologies operating under a high level of financial, technological and environmental sustainability. The facility is supported by the highly trained and experienced staff of the Faculty of Food and Agriculture in disciplines which include; agronomy, pest and disease management, soil science, environmental geography, extension and agricultural economics and farm management. It is also equipped with a fleet of tractors with requisite land preparation implements, small machinery and hand tools and equipment in support of field crop production, greenhouses and shade houses, irrigation system, farm buildings, a road network and periphery security fencing. The University has agreed to lease at least 25 acres of the Agriculture Innovation Park to the project for the purpose of establishing the PISLM/SOILCARE Facility on the New Adaptation Technologies for the Agriculture Sector in Caribbean SIDS.

12. The aims and objective of the **PISLM/SOILCARE Facility on the New Adaptation Technologies** are:

? Provision of a facility for the identification and evaluation of agricultural practices and technologies that enhance productivity, food security and resilience in specific agro-ecological zones and farming systems in the Caribbean.

? Undertake Soils and Sustainable Land Management Technology Needs Assessments (SSLM-TNAs), of the participating countries to identify, prioritise and highlight technology needs, and Technology Action Plans (TAPs), which are developed to address specific barriers, and identify targets, strategies, budgets and responsible stakeholders for prioritised technologies.

? Evaluate various technological options?hardware[1], software[2], and orgware[3]? and their applicability and the provision of support to Member States and encouraging them to implement all three technology types in a mutually supportive manner, in order to ensure sustainable and effective application of technologies for adaptation in the agriculture sector.

? Provision of training, including, field training, in support of the capacity requirements of the SOILCARE Phase 1.

13. The Caribbean Soil Support Group for SSM/SLM has been established to Strengthen Soil Science in Caribbean SIDS; to provide a mechanism for the cooperation between the Focal Points for the UNCCD and the Global Soil Partnership (GSP) which currently operate independently at the national level as well as to Facilitate Enhanced Collaboration with the Latin American and Caribbean Soil Partnership (ASLAC). This Group builds on the UNCCD National Focal Point System and the Regional Partnership which has been established to support the Global Soil Partnership (GSP) and has focal points for each of the 5 pillars of action of the GSP. The Group is chaired by the Senior Soil Expert from the University of the West Indies who has the responsibility for taking the lead on implementation of Component 1.

14. Another supporting mechanism is the **Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group which comprise of a number of** regional institutions (e.g. University of the West Indies, CARDI, Caribbean Community Secretariat Directorates of Environment and Sustainable Development and Agriculture, the Agricultural Directorate of the Organisation of Eastern Caribbean States (OECS); FAO sub regional and regional programmes, IICA and Civil Society etc.). This mechanism will provide advice on technical and scientific matters of relevance to the implementation of SOILCARE, thus enabling the PISLM to benefit from the experience and expertise of regional and international organisations, and/or to draw on a wider range of expertise available through to assist with the execution of elements of the project. Given the wide scope of the Project, the SSM Framework Agreement Group, will organize itself in a number of Standing Project Platforms, namely on:

? Soils which will oversee the updating of Soils and Soil Carbon.

? Climate Smart Agriculture, Sustainable Foods Systems and Integrated Landscape Restoration;

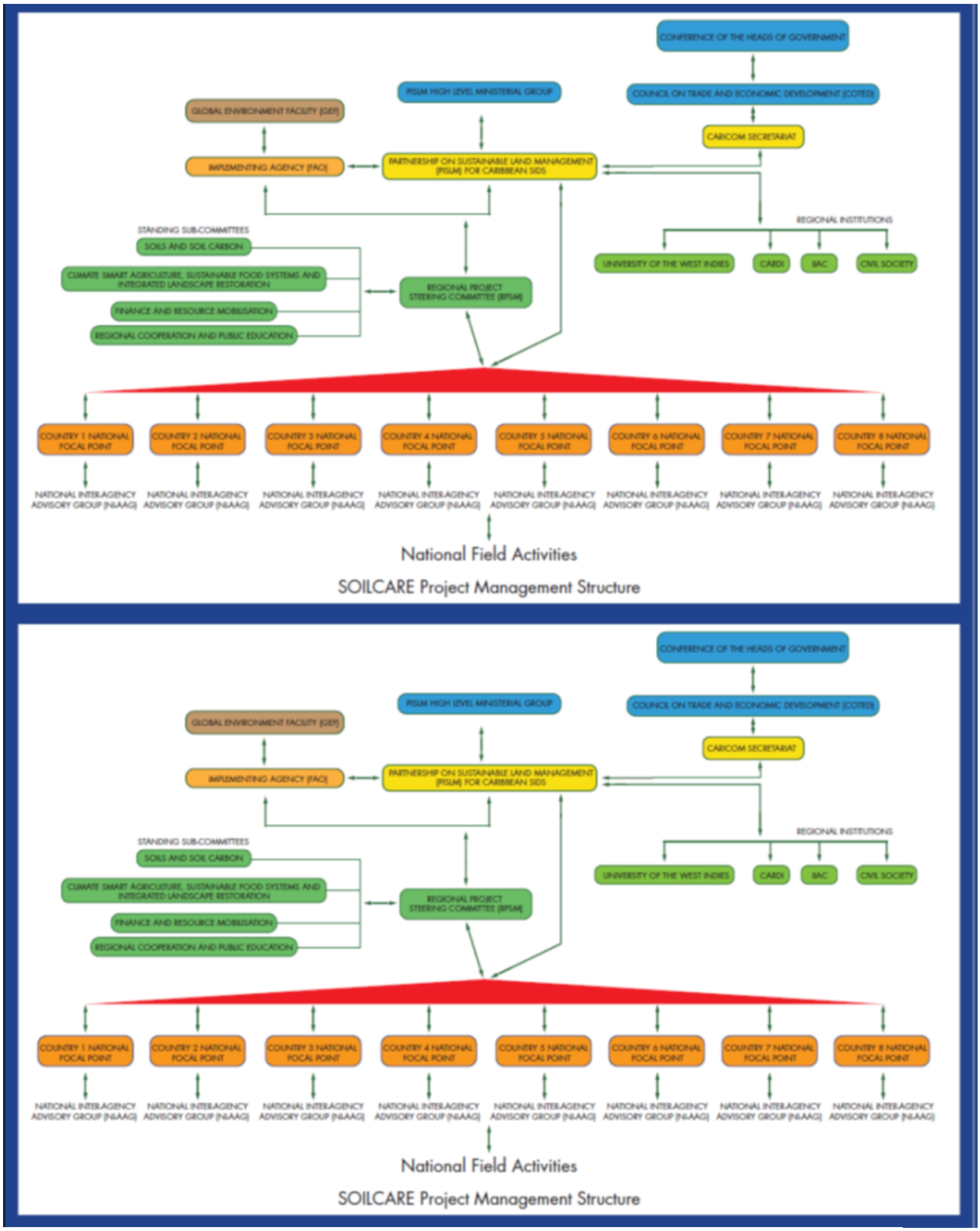
? Partnership Development, Financing and Resource Mobilisation. This Working Group will work closely with the Private Sector and its Organisations and Multilateral Financial Institutions (e.g. (Caribbean Development Bank, Development Banks of Latin America (CAF); IADB etc.).

? Regional Cooperation and Public Education whose function is to ensure that the relevant outputs are fed into the Decision-Making Organs of the Caribbean Community and the necessary actions are taken to enhance Public Education about SLM and LDN.

15. A **Regional Project Steering Committee (RPSC) will be established** to give Technical Oversite to Project Implementation. The RPSC will comprise of representation from each of the participating countries as well as key strategic partners, such as the University of the West Indies, the Caribbean Community Secretariat Sustainable Development Directorate, CARDI, IICA, etc. The IA will be Ex-officio of the RPSC, whereas the PISLM will serve as the Secretary to the RPSC.

16. At the National Level, each of the participating countries will establish a SOILCARE Project Office in the Office of the UNCCD Focal Point and/or an Office so identified by the participating country and will be staffed by a SOILCARE National Project Officer. The SOILCARE Project Office will be supported by a **National Inter-Agency Advisory Group (NI-AAG)** and each participating country is required to establish such a coordination mechanism. The NI-AAG main function is to assist the National Focal Point in providing oversite of the activities being located nationally as well as ensuring maximum participation in regional activities. It will be mandatory for the National Inter-Agency Advisory Group to have representation from Women?s, Youth, Indigenous Peoples and the Private Sector (as appropriate) Organisations and the climate change community, including the National Climate Change Focal Point for the country.

17. Overall Policy oversite of the project will be provided at a number of levels. Firstly, by the PISLM High Level Ministerial Body, which have policy oversight of the work of the PISLM and secondly at the Caribbean Community through its Organ[4]?the Council for Trade and Economic Development (COTED), both as COTED?Environment and COTED Agriculture. Since these two Caribbean Community Organs, rarely do not meeting in Joint sessions; to facilitate effectiveness and efficiencies, the project will allocate resources for the convening of Joint COTED?Environment and Agriculture, at least one meeting per annum, during the duration the project. The COTED in turn is accountable to the Conference of the Heads of Government, the supreme Organ of the Community. [5]



CONFERENCE OF THE HEADS OF GOVERNMENT
COUNCIL ON TRADE AND ECONOMIC DEVELOPMENT (COTED)
CARICOM SECRETARIAT
PISLM HIGH LEVEL MINISTERIAL GROUP
GLOBAL ENVIRONMENT FACILITY (GEF)
IMPLEMENTING AGENCY (FAO)
PARTNERSHIP ON SUSTAINABLE LAND MANAGEMENT (PISLM) FOR CARIBBEAN SIDS
REGIONAL INSTITUTIONS
UNIVERSITY OF THE WEST INDIES
CARDI
IIAC
CIVIL SOCIETY
STANDING SUB-COMMITTEES
SOILS AND SOIL CARBON
CLIMATE SMART AGRICULTURE, SUSTAINABLE FOOD SYSTEMS AND INTEGRATED LANDSCAPE RESTORATION
FINANCE AND RESOURCE MOBILISATION
REGIONAL COOPERATION AND PUBLIC EDUCATION
REGIONAL PROJECT STEERING COMMITTEE (RPSM)
COUNTRY 1 NATIONAL FOCAL POINT
COUNTRY 2 NATIONAL FOCAL POINT
COUNTRY 3 NATIONAL FOCAL POINT
COUNTRY 4 NATIONAL FOCAL POINT
COUNTRY 5 NATIONAL FOCAL POINT
COUNTRY 6 NATIONAL FOCAL POINT
COUNTRY 7 NATIONAL FOCAL POINT
COUNTRY 8 NATIONAL FOCAL POINT
NATIONAL INTER-AGENCY ADVISORY GROUP (N-IAAG)
National Field Activities
SOILCARE Project Management Structure

[1] Hard technologies, or hardware, refer to physical tools. In the agricultural context, hardware is exemplified by different crop varieties
[2] Soft technologies, or software, refer to the processes, knowledge and skills required using the technology. In the agricultural context, software by farming practices or research on new farming varieties
[3] Orgware, refers to the ownership and institutional arrangements pertaining to a technology. In the agricultural context, orgware, refers to local institutions that support the use of agricultural adaptation technologies.

[4] According to the Caribbean Court of Justice (CCJ) in Johnson v CARICAD
[5] See Article 12 of the Revised Treaty

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

1. All the participating countries in the project have ratified the UNCCD as follows: Belize: Ratified the Convention on 23 July 1998 and produced its 1st National Report in 2000; Dominica: Ratified 12 August 1997 NAP 2004 (not endorsed), 3rd national report 2006; Grenada: Ratified 28 May 1997 NAP 2006; Guyana: Ratified26 June 1997 NAP 2006; Ratified 25 September 1996, NAP 2015; Ratified07 February 1997; St. Vincent and the Grenadines: Ratified16 March 1998. This project is also consistent with the plans and programmes formulated by the participating countries under the various Conventions to which they are party.

2. With respect to the UNCCD, specifically, the threats of land degradation are being addressed through the countries aligned National Action Plans towards the 2020 Strategy of the Convention to Combat Desertification (UNCCD) as well as the recent national target setting process towards Land degradation neutrality. Land degradation is also directly interrelated with biodiversity loss and climate change the threats of which are being addressed through the National Adaptation Plans (NAPAs) and nationally determined contributions (NDCs) towards the Paris Agreement under the Climate Change Convention (UNFCCC), the National Biodiversity Strategy and Action Plans (NBSAPs) and commitments to the Aichi targets of the Convention on Biodiversity. The project will also assist the countries in meeting their specific LDN targets since many of the National Implementation Sites are priority sites identified through that process. The project will also contribute the commitments/plans/strategies related to the UNFCCC. As examples, the project will contribute to the mitigation and adaptation commitments contained in the participating countries Intended Nationally Determined Contributions (INDC). For example, the project will contribute to the attainment of the adaptation commitment as identified in the respective countries INDC with respect to the enhancement of food security and sustainable food production and improve agricultural productivity in Barbados, Belize, Guyana and Haiti. The project will also contribute to the attainment of some of the mitigation commitments as outlined in their INDC, more specifically, Sustainable Forest Management/Restoration in Belize, Guyana and Haiti. The project will also contribute to the Aichi Biological Target, in particular, to Target 5 which deals with the rate of loss of all natural habitats, including forests; Target 7 which relates to the sustainable management of areas under agriculture and forestry thus contributing to ensuring conservation of biodiversity; Target 14 which speaks to the restoration and safeguarding of ecosystems that provide essential services, including services related to water, and which contribute to health, livelihoods and well-being, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable. The project will also contribute to ecosystem resilience and the enhancement of

biodiversity to carbon stocks through conservation and restoration, including restoration of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification, as articulated in the Aichi Biological Target 15.

3. In terms of climate change, climate resilience is a priority for each of the participating Member States as outlined in their respective adaptation commitments which are an integral part of their Intended Nationally Determined Contributions. It is also a priority issue for the Caribbean Community as exemplified by the establishment of a dedicated institutional structure?the Caribbean Community Climate Change Centre?to address climate change related issues of the Community. In terms of mainstreaming adaptation elements of this project at the regional scale, this will be done through the various Community Policy Frameworks (e.g. Common Agricultural Policy; the Community Environmental and Natural Resources Policy Framework etc.). In doing so care will be taken to ensure that synergies are achieved with other relevant adaptation initiatives.

4. In terms of complementarity with other GEF interventions, SOILCARE Phase 1 will compliment GEF interventions in all of the participating countries. In the case of Antigua and Barbuda the implementation of SOILCARE Phase 1 will complement a number of other GEF interventions, namely the Medium Sized Projects on *Advancing Conservation in the Eastern Caribbean* and *Capacity Building for Improved Transparency on Climate Actions through an Environment Registry in Antigua & Barbuda.* In the case of Barbados*,* it will complement the regional project entitled ?*Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (IWEco).* In Belize SOILCARE Phase 1 will complement a number of GEF Interventions, namely; *Strategic Implementation using STAR Resources mainly in LDCs and SIDs (Part 3); Enhancing jaguar corridors and strongholds through improved management and threat reduction and Integrated Transboundary Ridges-to-Reef Management of the Mesoamerican Reef.* In Grenada, the SOILCARE Phase 1 will be compliment a number of GEF initiatives including, *Advancing Conservation in the Eastern Caribbean and Climate Resilient Agriculture for Integrated Landscape Management.* In Guyana, *Securing a Living Amazon through Landscape Connectivity in Central Guyana* and *Amazon Sustainable Landscapes Program - Phase II* are to GEF projects which SOILCARE Phase 1 will compliment. In Haiti, on the other hand, synergies will be result with the GEF interventions entitled *Resilient Productive Landscapes in Haiti; Increasing Resilience of Ecosystems and Vulnerable Communities to CC*; *Anthropic Threats Through a Ridge to Reef Approach to BD Conservation* and *Watershed Management* and Strengthening *Climate Resilience and Reducing Disaster Risk in Agriculture to Improve Food Security in Haiti Post Earthquake.* SOILCARE Phase 1, will also complement the GEF in Jamaica, entitled Conserving *Biodiversity and Reducing Land Degradation Using an Integrated Landscape Approach* and in St. Lucia; *Integrated Ecosystem Management and Restoration of Forests on the South East Coast of St. Lucia*.

5. National LDN targets and project contribution to those targets are summarized below:

Country	**Target**	**LDN measures supported by SOILCARE**

Antigua and Barbuda Link here	LDN target at national level: LDN is achieved by 2030 as compared to 2015 to include the existing 9% degraded lands within our land mass becoming neutral or improved The LDN TSP is aligned to the global SDG15 to achieve by 2030 LDN sub-targets: Reporting on the land use/land cover indicator reflects a 5% change towards the improvement of the land by 2030 compared to the 2015 baseline (net increase) and achieved through strengthened development control and other appropriate measures LDN is achieved in St Mary?s (priority), and St. John?s Parish by 2030, compared to the 2015 baseline through sustainable land management practices (Indicators: stable Productivity and stable Soil Organic Carbon)	SOILCARE and PISLM will support the implementation of the following measures included in the country?s LDN commitments: ? Incorporate LDN as an innovative land use planning tool in Antigua & Barbuda ? Encourage the DCA Board and Ministry of Agriculture to improveproductivity by implementing agricultural production systems, peragricultural district, using best available and affordable technologies. ? Strengthening of existing framework at the DCA that governs decision making on the LDN prescriptions, policies and land allocation and involve relevant agencies (Survey & Mapping Division, Forestry, DOE, Lands Division, National Parks Authority, National Housing Development and Urban Renewal Co Ltd., CHAPA, Barbuda Council)

Barbados (link)	While Barbados has not established its LDN targets, the LDN framework report recommends that: A programme of LDN target-setting and implementation in Barbados should be designed to align with national physical development policies and plans. Areas of congruence could be identified via a thorough review of the PDP. LDN targets may be set at the national scale (e.g. LDN relative to a 2015 baseline is achieved by 2030), for specific areas in the country (e.g. LDN relative to a 2015 baseline is achieved in the National Park by 2030), or to address land degradation issues of specific concern to the country (e.g. halt the conversion of agricultural land to other land uses by 2030). The PDP provides a basis for setting sub-national area specific LDN targets, keeping in mind the aim to manage LDN at the same scale as land use planning. Such targets for selected components and sub-components of the growth management framework, e.g. specific targets for the Rural Working Landscape, for the Soil Protection Overlay, for the National Park, etc.	SOILCARE activities will take place in and around the Barbados National Park, which is one of the areas suggested in the Report on the framework to support LDN target setting. SOILCARE and PISLM will support country efforts to take the first steps to establish LDN targets by developing the necessary data and supporting an enabling environment to allow the targets to be established.
Belize Report here	Belize?s National Land Degradation Neutrality Target (LDN) is to have ?no net loss for all territorial lands in all land cover classes, compared to the 2000-2015 baseline by 2030.? Sub-national LDN targets: LDN is achieved within the Belize River Watershed by 2030 as compared to the 2000-2015 baseline LDN is achieved in the Orange Walk and Corozal Districts by 2030 as compared to the 2000-2015 baseline	SOILCARE and PISLM will support activities in the communities of Libertad and Patchacan located in the norther district of Corozal, which is one of the target sites as established in the LDN national report.
Grenada Report here	LDN targets at the national scale: Increase the fertility and productivity of 580 ha of cropland by 2030. Transform 800 ha of abandoned cropland into agroforestry by 2030. Implement soil conservation measures on 120 ha of land by 2030. Rehabilitation of 383 ha of degraded land at Bellevue South in Carriacou by 2030. Rehabilitation of100 ha of degraded forests in Grenada and Carriacou by 2030. Increase forest carbon stocks by 10% by 2030.	SOILCARE and PISLM will support activities in Land Degradation Hot spots which were identified by the LDN/TSP for the main island of Grenada, including Les Advocat Forest, Chambord and Luthbur, Carriacou.

Guyana Report here	National targets: LDN is achieved at the national level: aim is no net loss for the whole land area of the country and all its land cover classes, compared to the 2000-2010 baseline. (by 2030) The LDN TSP is aligned to the global SDG15 to achieve by 2030. <u>Proposed measures</u>: Land cover-Deforestation and loss of biodiversity Measure 1: Actions will be focused on avoidance and rehabilitation and restoration. <u>Avoidance</u>, including Sustainable Forest Management, Reduced illegal logging (EUFLGT), Improved regulations for land use planning, Protected Area System, Land use policy incorporating sustainable land management <u>Rehabilitation and Restoration</u>, including Mangrove (coastal), Land Productivity - Soil degradation erosion Measure 2: Management to promote and improve sustainable agriculture, improved water management, drainage, irrigation, salt water intrusion, improved land productivity, sustainable land management, research, public Awareness/Communication, mining hot spots	SOILCARE and PISLM will support activities in three National Implementation Sites, namely ? Region 1 ? Port Kaituma, which occur along the lower floodplains of the Waini, Aruka, Kaituma, Barima and Barama Rivers ? Region 10, the Intermediate Savannahs ? Region 5, the Mahaica Mahaicony Abary Region 10 has been identified as a hotspot in the LDN Target Setting report. SOILCARE will support the following measures in the three regions mentioned above: supporting SFM and SLM, improved planning, promoting sustainable agriculture and improved water management, and improved land productivity.
Haiti PRAIS report <u>here</u>	While the country has not established LDN targets, it reported to the UNCCD (PRAIS, SO1, voluntary targets, page 15) that it would (i) strengthen the protection and conservation of forest ecosystems, and (ii) support the sustainable management of degraded basins	SOILCARE and PISLM will support activities to rehabilitate the Quisqueya Fond-Parisien Natural Park including Lake Azuei and environs as well as the Rio Marion Watershed

Jamaica LDN Report here	**LDN National target** Jamaica has defined that ?LDN is achieved by 2030 as compared to 2015 and an additional 10% of degraded lands of the national territory are improved?. **LDN sub-targets** LDN measures are incorporated as development and planning objectives within the Local Sustainable Development Plans (LSDP) for parishes of Manchester, Clarendon, St. Elizabeth and St. Catherine. Additionally, going forward, LDN becomes a fixture in all LSDPs Coordinate with the Forest Department and others to increase by at least 50% reforestation efforts in the parishes of Hanover, Portland, St. Andrew, St. James and St. Mary Develop a policy framework to assess the implications of urban expansion on agricultural land decline in parishes of St. James, St. Catherine, Clarendon St. Andrew and St. Thomas LDN is achieved in the parish of Manchester by 2030, compared to the 2015 baseline when there was no net loss. Manchester Parish has the highest level of degradation and moderate biomass production. This intervention will improve efforts to increase biomass production significantly LDN is achieved in the parishes of Clarendon, Hanover and Westmoreland by 2030, compared to the 2015 baseline. These parishes have lowest levels of degradation and the most stable and improving degradation conditions and an additional 5% net gain Improve 10% the productivity and Soil Organic Carbon (SOC) stocks in cropland and grasslands for the entire country by 2030, compared to the 2015 baseline. This will be in addition to reducing soil erosion by 15% by 2030 Increase efforts to rehabilitate and replant mangroves in South Clarendon, St. Elizabeth and St. Catherine Increase forest cover by 5% by 2030 as compared to 2015, through a series of reforestation activities that would amount a total of 200 km2 in the country	SOILCARE and PISLM will support the following measures as proposed in the Jamaica National Report: ? Rehabilitating degraded lands through sustainable crop production ? Restoring land productivity through SLM practices (organic agriculture, optimizing planting dates, etx) ? Promoting and adopting SSM practices and soil loss prevention methods. Facilitating research into local soils and climate change relationship ? Strengthen the monitoring and enforcement regime

St. Lucia Reeport here	LDN target at the national level: ? LDN is achieved by 2030 as compared to 2015 and an additional 15% of degraded lands of the national territory are improved (net gain). LDN targets at the sub-national level: LDN is achieved in the Barre d?Isle- Castries area by 2030, compared to the 2015 baseline (no net loss). LDN is achieved in the Migny-Soufriere watershed area by 2025 as compared to the 2015 baseline (no net loss) LDN is achieved in Millet/Roseau watersheds by 2030, compared to the 2015 baseline plus an additional 5% has improved (net gain) LDN is achieved in Vieux Fort and Canelles watersheds by 2030, compared to the 2015 baseline plus an additional 5% has improved (net gain). Improve productivity and Soil Organic Carbon (SOC) stocks in cropland and grasslands by 2030, compared to the 2015 baseline. Improve local data and develop a mechanism for the collection and management of land productivity and soil organic carbon data for future monitoring needs.	SOILCARE and PISLM will support activities in Choiseul (Anse Citron), Bois den Jacmel and Cendre de FEU/Sarot Bexon. The project will support the following measures: ? Improving productivity and soil organic carbon stocks both by reforestation efforts (Anse Citron) and restoring agricultural lands (Bois Den Jacmel and Bexon) ? Improve data collection and availability ? Support land use planning

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

1. This project has been built on existing land degradation initiatives in the participating Member States, particularly the LDN Target Setting process from which many of the National Projects Implementation Sites have been identified as priority areas for intervention. In that tradition, SOILCARE will continue in its execution to draw on lessons learnt from previous and ongoing projects and build upon them. One example in this regard is the Soil Fertility Project.

2. One of the overarching objectives of SOILCARE Phase 1 is the enhancement of knowledge on a number of fronts.

3. Embedded in project are a number of features which identify, capture, store, create, update, represent, and distribute knowledge for use, awareness and learning across the participating countries and organisations involve in various aspects of the project. In essence KM is a key element underpinning most of the activities which will be undertaken as part of SOILCARE. KM is therefore fundamental to the

project implementation success and will therefore have a significant impact on the success of the project. To facilitate the collection and synthesis of relevant information and data emanating from SOILCARE as well as from the UNCCD and the ASLAC-Caribbean in a format that is easily accessible to stakeholders a Learning and Data/Information Gathering and Dissemination Mechanism, will be put in place. Generally, this mechanism facilitate the gathering, synthesis and management of information to support a continuous feedback learning loop and therefore support the Knowledge Hub being used as the depository of all the information generated from the project as well as other land degradation information and data on Caribbean SIDS; including, *inter alia*, the Project Lessons Learnt on the Contribution to LDN and Landscape Management at Regional and National Levels. This mechanism when operationalized will facilitate a more systematic synthesis of lessons derived from the project to facilitate sharing both within this project and with the rest of the world.

4. Further embedded therein, are a number of mechanisms and modalities which form important elements of the Knowledge Management of the project. Firstly, a key KM element is to generate new knowledge by preparing / updating soil data that will be the basis of land use planning in subsequent components. Closely linked, are the establishment of a Network of Soil Analytical Capability and the strengthening of a Caribbean Soil Information System and its integration with the Global Soil Information System (GloSIS). In the case of the former? Network of Soil Analytical Capability?this will considerably increase the region?s ability to analyse its soil resources; in particular, Soil Organic Carbon (SOC). The later on the other hand, is designed to process, store and disseminate the information and data readily available to the countries, the region and the rest of the world. The integration of the data and information with the Global Soil Information System, on an open access basis, will enhance global understanding of the soils of the participating countries. It will therefore fill a significant gap which currently does not exists with the GSP on Caribbean Soils.

5. The LDN and SLM Knowledge Hub is an important KM modality of SOILCARE Phase 1, designed to facilitate digital collaboration between the participating Member States as well as with other SIDS and the rest of the world in general. The Knowledge Hub along with its various elements?the Caribbean Land-Soil Outlook 2030; the Regional SLM and LDN Public Education and Awareness Initiative; Social Learning Platform and the ASLA-Caribbean secretariat and its interaction with the other GSP entities in the Hemisphere (e.g. ASLAC-South America and ASLAC-MesoAmerica?will facilitate the sharing of experiences, knowledge and learning about LDN, SSM and SLM issues particularly relevant to SOILCARE Phase 1 as well as the UNCCD and the activities of ASLAC-Caribbean. As indicated previously, the purpose of the Knowledge Hub is to capture data and information generated through SOILCARE Phase 1 (e.g. new knowledge on soils, soil carbon, tools and methods for Climate Smart Agriculture; new climate resilient technologies, etc.) as well as to facilitate knowledge transfer across the region, thus increasing accessibility to the knowledge generated by the project. It will also facilitate the strengthening of the Technical-Policy Interface in Caribbean SIDS where the project outputs will be integrated into policy frameworks at the national and regional levels.

6. A central aspect of the KM which will contribute to SOILCARE Phase 1 overall impact is the capture of best practices and the transfer of knowledge, skills and know how to resources users. Already the project has made use of knowledge generated through the LDN TSP and other national level SLM and LD related projects. In the case of the LDN TSP, many of the National Project Implementation Sites are priority areas which have been identified through that process. In addition, an important dimension of the knowledge management embedded in this project is the capture of best practices and the transfer of knowledge, skills and know how to resources users, particularly, small farmers and indigenous peoples. The transfer of knowledge will take many forms, including, inter alia, in- field training for farmers and foresters, the integration of the project outputs into regional training institutions, in particular, the University of the West Indies; equipping extension services with the tools and knowledge to work with farmers in the transitioning processes to Climate Smart Agriculture. In addition the PISLM/SOILCARE Regional Research, Advisory and Capacity Building (RAC) Facility on New Adaptation Technologies? will play an important role, not only in the generation of knowledge on climate resilient technologies but also in facilitating the sharing of knowledge on their application in the participating countries. The value of the knowledge which will be shared is important in that it will have a significant impact in enhancing climate resilient agriculture in the region. In addition, regional cooperation mechanism (e.g. SIDS-SIDS

cooperation etc.) will be used as a means of enhancing the sharing of knowledge between SIDS regionally. A critical aspect of the knowledge management of this project will be the Institutionalisation of Training; taking a long-term view of the capacity needs of the region. In this regard, resources will be allocated to facilitate the institutionalisation of the training.

7. Another important KM mechanism is the Sub-regional Sustainable Soil Management (SSM) Framework Agreement Group which comprised of regional institutions such as the University of the West Indies, CARDI, Caribbean Community Secretariat Directorates of Environment and Sustainable Development and Agriculture, the Agricultural Directorate of the Organisation of Eastern Caribbean States (OECS); IICA and Civil Society etc. This mechanism will enable the PISLM to benefit from the experience and expertise of regional and international organisations, and/or to draw on a wider range of expertise available through to assist with the execution of elements of the project. An important as of the responsibility of this Group will be to contribute to the strengthening of regional efforts aimed at mainstreaming climate resilient measures into sectoral planning, particularly in the agriculture sector.

8. From a climate change perspective, SOILCARE will play a critical role in mainstreaming climate resilience into sustainable land management and agricultural practices in the region. The project will therefore bring significant value-add in assisting farmers in mainstreaming climate resilience approaches, techniques and methods in their farming practices. The various mechanisms which form part of the project, for example, in field training, will play an important role in facilitating the transfer of this know throughout the region, and in particular, in the participating countries. In addition, mechanisms such as the Caribbean Land-Soil Outlook will enable the sharing and exchange of the knowledge generated with countries which are not directly participating in the project. In addition, the project is a very important in that it will play a significant complementary role in the efforts that have recently started to have the Caribbean SIDS implement and mainstream climate resilience and mitigation as an integral part in its development process. It will serve as another key and fore-front the climate resilience value-added which can be derived from investments in SSM and SLM. Given the importance of agriculture to the participating countries the development of Guidelines on Climate Smart Agriculture is of immense significance in helping that sector to mainstream climate action into their day to day operations. Furthermore, SOILCARE is expected to play a central role in help to re-shape the agriculture sector in the region by mainstreaming climate resilience into its operations. In addition, the involvement of the regional institutions involved in sustainable land management in the region is significant, since it is anticipated that SOILCARE will significantly influence their programming with respect to nexus between SSM, SLM and the building of climate resilience in Caribbean SIDS.

9. SOILCARE Phase 1 in addition to promoting and mainstreaming climate resilience as an integral part of SSM and SLM in Caribbean SIDS, it will also play a significant role in contributing to the COVID-19 Sustainable Recovery call for by the XXII Meeting Forum of Ministers of Environment for Latin America and the Caribbean hosted by Barbados in February 2021. The major benefit which SOILCARE will provide is its contribution to the food security of the Region and the sustainable husbandry of its land resources to respond to the climate crisis while contributing to food production. Another benefit of SOILCARE Phase 1 is that it provides significant baseline information and data on which specific strategies could be based to enhance food production in Caribbean SIDS.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

1. The monitoring and evaluation of progress in achieving the results and objectives of the project will be based on targets and indicators in the Project Results Framework (Annex A). Project monitoring and the evaluation activities are budgeted at USD 296,000 (see Monitoring & Evaluation Summary below). Monitoring and evaluation activities will follow FAO and GEF policies and guidelines for monitoring and evaluation. The monitoring and evaluation system will also facilitate learning and

replication of the project?s results and lessons in relation to the integrated management of natural resources.

Oversight and monitoring responsibilities

2. The monitoring and evaluation roles and responsibilities specifically described in the Monitoring and Evaluation table (see Annex H) will be undertaken through: (i) day-to-day monitoring and project progress supervision missions (PISLM Regional Project Unit or RPU); (ii) technical monitoring of indicators to measure a reduction in land degradation (RPU in coordination with partners); and (iii) monitoring and supervision missions (FAO).

3. At the beginning of the implementation of the GEF project, the RPU will establish a system to monitor the project?s progress. Participatory mechanisms and methodologies to support the monitoring and evaluation of performance indicators and outputs will be developed. During the project inception workshop, the tasks of monitoring and evaluation will include: (i) presentation and explanation (if needed) of the project?s Results Framework with all project stakeholders; (ii) review of monitoring and evaluation indicators and their baselines; (iii) preparation of draft clauses that will be required for inclusion in consultant contracts, to ensure compliance with the monitoring and evaluation reporting functions (if applicable); and (iv) clarification of the division of monitoring and evaluation tasks among the different stakeholders in the project. RPU will prepare a draft monitoring and evaluation matrix that will be discussed and agreed upon by all stakeholders during the inception workshop. The M&E matrix will be a management tool for the RPU and the Project Partners to: i) six-monthly monitor the achievement of output indicators; ii) annually monitor the achievement of outcome indicators; iii) clearly define responsibilities and verification means; iv) select a method to process the indicators and data.

4. The **M&E Plan** will be prepared by the RPU together with local communities in during PY1 and validated with the PSC. The M&E Plan will be based on the M&E summary table and the M&E Matrix and will include: i) the updated results framework, with clear indicators per year; ii) updated baseline, if needed, and selected tools for data collection (including sample definition); iii) narrative of the monitoring strategy, including roles and responsibilities for data collection and processing, reporting flows, monitoring matrix, and brief analysis of who, when and how will each indicator be measured. Responsibility of project activities may or may not coincide with data collection responsibility; iv) updated implementation arrangements, if needed; v) inclusion of data collection and monitoring strategy to be included in the final evaluation; vi) calendar of evaluation workshops, including self-evaluation techniques.

5. The day-to-day monitoring of the project?s implementation will be driven by the preparation and implementation of an AWP/B followed up through six-monthly progress reports. The preparation of the AWP/B and PPRs will represent the product of a unified planning process between main project stakeholders. As tools for results-based management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output and outcome targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output and outcome targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with all stakeholders and coordinated and facilitated through project planning and progress review workshops. These contributions will be consolidated by the RPU in the draft AWP/B and the PPRs.

6. An annual project progress review and planning meeting should be held with the participation of the project partners to finalize the AWP/B and the PPRs. Once finalized, the AWP/B and the PPRs will be submitted to the FAO LTO for technical clearance, and to the Regional Project Steering Committee (RPSC) for revision and approval. The AWP/B will be developed in a manner consistent with the Project Results Framework to ensure adequate fulfillment and monitoring of project outputs and outcomes.

7. Following the approval of the Project, the first AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with the annual reporting calendar. In subsequent years, the AWP/Bs will follow an annual preparation and reporting cycle.

Reporting schedule

8. Specific reports that will be prepared under the monitoring and evaluation program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) Annual Project Implementation Review (PIR); (v) Technical reports; (vi) Co-financing reports; and (vii) Terminal Report. In addition, the GEF-7 Core Indicator Worksheet will be updated during the Mid-Term and Final Evaluations.

9. **Project Inception Report**. After FAO internal approval of the project, an inception workshop will be held. Immediately after the workshop, the NPC will prepare a project inception report in consultation with the FAO Representation for the Caribbean and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B and the M&E Matrix. The draft inception report will be circulated to FAO, the PSC and for review and comments before its finalization, no later than four months after project start-up. The report will be cleared by FAO and uploaded it in its field programme management system (FPMIS).

10. **Annual Work Plan and Budget(s) (AWP/Bs).** The RPU will present a draft AWP/B to the PSC no later than 10 December of each year. The AWP/B should include detailed activities to be implemented by project Outcomes and Outputs and divided into monthly timeframes and targets and milestone dates for Output and Outcome indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B will be sent to FAO for no-objection the and to PSC for approval. The BH will upload the AWP/Bs in FPMIS

11. **Project Progress Reports (PPR)**. The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. These are maintained in FAO?s field program management system. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework (Annex A), AWP/B and M&E Plan. Each semester the RPU will prepare a draft PPR, and will collect and consolidate any comments from the FAO PTF. The RPU will submit the final PPR to the FAO Subregional Representation in the Caribbean every six months, prior to 10 June (covering the period between January and June) and before 10 December (covering the period between July and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by FAO.

12. **Annual Project Implementation Review (PIR)**. The RPU, under the supervision of the FAO Lead Technical Officer (LTO) and BH and in coordination with the national project partners, will prepare a draft annual PIR report covering the period July (the previous year) through June (current year) no later than July 1st every year. The LTO will finalize the PIR and will submit it to the FAO-GEF Coordination Unit for review by July 10th. The FAO-GEF Coordination Unit, the LTO, and the BH will discuss the PIR and the ratings. The LTO is responsible for conducting the final review and providing the technical clearance to the PIR(s). The LTO will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR(s) to the GEF Secretariat and the GEF Independent Evaluation Office as part of the Annual Monitoring Review of the FAO-GEF portfolio. The PIR will be uploaded to FPMIS by the FAO-GEF Coordination Unit. The PIR will replace the January-June PPR.

13. **Technical reports.** The technical reports will be prepared as part of the project outputs and will document and disseminate lessons learned. Drafts of all technical reports must be submitted by the

Project Coordinator to the RPSC and FAO Subregional Office for the Caribbean, which in turn will be shared with the LTO for review and approval and to the FAO-GEF Coordination Unit for information and comments before finalization and publication. Copies of the technical reports will be distributed to the Liaison Committee and the PSC and other project stakeholders, as appropriate. These reports will be uploaded in FAO FPMIS by the BH.

14. **Co-financing reports**. The NPC will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project co-financiers and eventual other new partners not foreseen in the Project Document. Every year, the RPU will submit the report to the FAO Subregional Office for the Caribbean before July 10th covering the period July (the previous year) through June (current year). This information will be used in the PIRs.

15. **Core Indicators worksheet**. In compliance with GEF policies and procedures, at project mid-term and completion, Agencies report achieved results against the core indicators and sub-indicators used at CEO Endorsement/ Approval.

16. **Independent Mid-Term (MTE) and Final Evaluations (FE)** will be carried out five months prior to the terminal report meeting. The FE will aim to identify the project impacts, sustainability of project outcomes and the degree of achievement of long-term results. The FE will also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities and institutions with responsibilities in food security, conservation and sustainable use of natural resources, small-scale farmer agricultural production and ecosystem conservation to assure continuity of the processes initiated by the Project. The FE will pay special attention to outcome indicators and will be aligned with the GEF 7 Core Indicators.

Evaluation Provisions

17. Two independent project evaluations, a Mid-Term Evaluation (MTE) in the 3rd quarter of project year 3 and a Terminal Evaluation (TE) three months prior to the project end date, will be carried out. FAO will arrange an independent MTE in consultation with PISLM, the RPSC, the and FAO-LTO and GEF Coordination Unit. The MTE will be conducted to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. The MTE will allow mid-course corrective actions, if needed. The MTE will provide a systematic analysis of the information on project progress in the achievement of expected results against budget expenditures. It will refer to the Project Budget (see Annex A2) and the approved AWP/Bs. It will highlight replicable good practices and key issues faced during project implementation and will suggest mitigation actions to be discussed by the RPU, RPSC, the LTO and FAO-GEF Coordination Unit.

18. The GEF evaluation policy foresees that all medium and large size projects require a separate terminal evaluation. Such evaluation provides: i) accountability on results, processes, and performance; ii) recommendations to improve the sustainability of the results achieved and iii) lessons learned as an evidence-base for decision-making to be shared with all stakeholders (government, execution agency, other national partners, the GEF and FAO) to improve the performance of future projects.

19. The FAO Budget Holder will be responsible to contact the Regional Evaluation Specialist (RES) within FAO six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED and will be responsible for quality assurance. Independent external evaluators will conduct the terminal evaluation of the project taking into account the ?GEF Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects?. FAO Office of Evaluation (OED) will provide technical assistance throughout the evaluation process, via the OED Decentralized Evaluation Support team ? in particular, it will also give quality assurance feedback on: selection of the external evaluators, Terms of Reference of the evaluation, draft and final report. OED will be responsible for the quality assessment of the terminal evaluation report, including the GEF ratings.

20. After the completion of the terminal evaluation, the BH will be responsible to prepare the management response to the evaluation within four weeks and share it with national partners, GEF OFP, OED and the FAO-GEF Coordination Unit.

Monitoring and Evaluation summary

21. The table below summarizes the main monitoring and evaluation reports, parties responsible for their publication and time frames.

Type of M&E Activity	Responsible Parties	GEF Budget (USD)	Co-finance (USD)	Time Frame
Inception Workshop	? PISLM Regional Project Unit/Project Manager ? FAO	21,600	10,000	Within one months of project start-up
Inception Report	? PISLM Regional Project Unit/ Project Manager	Implicit in cost	10,000	Within one month after project inception meeting
Measurement of project indicators (outcome, progress and performance indicators, GEF tracking tools) including baseline data collection	? PISLM Support Office/Executive Director ? PISLM Regional Project Unit ? Regional Project Steering Committee ? Department of Food Production, Faculty of Food and Agriculture (FFA) University of the West Indies, St. Augustine Campus, Trinidad and Tobago	Implicit in cost	10,000	Outcome indicators: start, mid and end of project Progress/performance indicators: annually
Semi-annual Progress / Operational reports to FAO	? PISLM Support Office/Executive Director ? PISLM Regional Project Unit /Project Manager	Implicit in cost	15,000	Within 1 month of the end of reporting period

Type of M&E Activity	Responsible Parties	GEF Budget (USD)	Co-finance (USD)	Time Frame
Regional Project Steering Committee (RPSC) meetings and Oversight Functions	? PISLM ? PISLM Regional Project Unit/Project Manager ? Members of the Regional Project Steering Committee (RPSC)	86,400	15,000	Bi-Annual Meetings
Reports of RPSC meetings	? PISLM Regional Project Unit/Project Manager ? PISLM Support Office/Executive Director	Implicit in cost		Bi-Annual Meetings
Implementation of Component 1 and Reporting on Progress including Preparation of Progress Reports	? Department of Food Production, Faculty of Food and Agriculture (FFA) University of the West Indies, St. Augustine Campus, Trinidad and Tobago ? Latin America and the Caribbean Global Soil Partnership and FAO ? PISLM Regional Project Unit/Project Manager/ ?	Implicit in Agreement	15,000	
Caribbean Soil Support Group for SSM/SLM	? Department of Food Production, Faculty of Food and Agriculture (FFA) University of the West Indies, St. Augustine Campus, Trinidad and Tobago ? PISLM Regional Project Unit/Project Manager/ PISLM Liaison Officer ? UNCCD and GSP National Focal Points	Implicit in Agreement	20,000	Bi-Weekly Virtual Meetings for the first 6 months of the project, thereafter monthly meeting
Reports of Caribbean Soil Support Group for SSM/SLM	?		10,000	Quarterly Written Updates for the First 18 Months of the Project

Type of M&E Activity	Responsible Parties	GEF Budget (USD)	Co-finance (USD)	Time Frame
Regional Sustainable Soil Management (SSM) Framework Agreement Group	?	Implicit in cost	10,000	
Reports of the Regional Sustainable Soil Management (SSM) Framework Agreement Group	?		10,000	
PISLM/SOILCARE Facility on the New Adaptation Technologies for the Agriculture Sector in Caribbean SIDS.	?	Implicit in cost	15,000	
Reports of the PISLM/SOILCARE Facility on the New Adaptation Technologies for the Agriculture Sector in Caribbean SIDS.	?		10,000	
Project Implementation Review (PIR)	? PISLM ? PISLM National Project Management Unit/Project Manager ? FAO	Implicit in Agreement		Annually, part of reporting routine
Mid Term Review/ Evaluation	? PISLM Support Office/Executive Director ? PISLM National Project Management Unit/Project Manager ? Domestic & External consultant(s) ? FAO	80,000		At mid-point of project implementation.

Type of M&E Activity	Responsible Parties	GEF Budget (USD)	Co-finance (USD)	Time Frame
Terminal Evaluation	●PISLM Support Office/Executive Director ●FAO ●Independent External consultant(s)	80,000		Within 6 months of end of project implementation
Project Final Report	? PISLM Support Office/Executive Director ? PISLM Regional Project Management Unit/Project Manager ? National Project Steering Committee ? Consultants for lessons learnt evaluation	Implicit in cost	15,000	Within 2 months of the project completion date
Co-financing report	? PISLM ? FAO ? Participating Member States ? University of the West Indies	Implicit in cost	10,000	Within 1 month of the PIR reporting period.
Publication of Lessons Learnt and other project documents	? PISLM Support Office/Executive Director ? PISLM Regional Project Management Unit/Project Manager ? FAO ? PISLM National Project Consultants for lessons learnt evaluation	Implicit in cost	15,000	Annually, part of Semi-annual reports & Project Final Report
Total M&E Plan cost		**268,000**	**190,000**	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

1. The project will target small-holder farmers in target countries in the Caribbean. In particular, it will support the expansion of climate-resilient agriculture to include the increase of the production of targeted organic inputs and greenhouse production, including the introduction of resilience crop systems to potential climatic shocks through the adoption of increasing access to new, stress-tolerant crop varieties and/or more nutritious staple crop foods. The project is expected to increase agricultural yield, reduce soil erosion, enhance water quality and quantity, and improve the income and food security of at least 1,500 beneficiaries.

2. At the national level, the project will benefit competent national organizations for the promotion of women?s rights (e.g. Ministries/Bureaus of Women?s Affairs etc.) and/or voluntary umbrella organization representing women?s groups who will sit on the National Inter-Agency Advisory Group. These organization will ensure that the Executing Agency works with communities and organizations, as may be necessary, to ensure gender equity in participation of women in project activities and to help ensure that the socioeconomic benefits resulting from project activities under component 2, 3 and 4 impact equally on the lives of woman. Similarly, representatives of youth and indigenous peoples will perform similar functions to ensure the projects benefit them by providing training, inputs and ensuring that extension services provide adequate backstopping.

3. The project will also benefit Farmers? organizations who will participate by providing inputs on sustainable agricultural approaches that could be promoted by the project, and on the best delivery mechanisms for those approaches. Significant capacity building will be provided to farmers' organizations to ensure that they improve their production practices while protecting the environment and becoming more resilient to climate change.

4. Finally, the proposed project will support national efforts to build-back better after continuous climate induced disasters and the COVID-19 pandemic by (i) investing in better preparedness including improving climate risk assessment and land suitability assessments which will in turn support better decision-making by planners and target farmers, (ii) by investing in the restoration of land and natural resources in order to increase resilience, (iii) by investing in improving the soil monitoring and assessment capacity in the region, which will in turn support better investments in the field; (iv) by exploring financing mechanisms and resource mobilization strategies that will support the implementation of climate resilient and productivity enhancing activities; and finally (v) the project will play a key role in enabling the participating countries to build back better in the post COVID-19 pandemic era through the creation of green jobs and strengthening sustainable food security.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Please refer to the attached document below (Annex N in the PRODOC)

The project is considered Medium Risk as it will provide planting material to support activities to restore productive lands and forests. The project will follow FAO guidance regarding providing seeds and/or planting material, namely:

-Avoid undermining local seed & planting material production and supply systems through the use of seed voucher schemes, for instance
-Ensure that the seeds and planting materials are from locally adapted crops and varieties that are accepted by farmers and consumers
-Ensure that the seeds and planting materials are free from pests and diseases according to agreed norms, especially the IPPC
-Internal clearance from AGPMG is required for all procurement of seeds and planting materials. -- Clearance from AGPMC is required for chemical treatment of seeds and planting materials
-Clarify that the seed or planting material can be legally used in the country to which it is being imported
-Clarify whether seed saving is permitted under the country?s existing laws and/or regulations and advise the counterparts accordingly.
-Ensure, according to applicable national laws and/or regulations, that farmers? rights to PGRFA and over associated traditional knowledge are respected in the access to PGRFA and the sharing of the benefits accruing from their use.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
SOILCARE- Climate risk screening summary	**CEO Endorsement ESS**	
ESS - SOILCARE safeguards	**CEO Endorsement ESS**	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Outcomes/Outputs	Indicators	Baseline	Mid-term Targets	End of Project Targets
Project Objective: To Strengthen Caribbean SIDS with the necessary tools for adopting policies, measures and reforming legal and institutional frameworks to achieve Land Degradation Neutrality LDN and Climate Resilience				
Component 1: Establish, update and strengthen national and regional soil information systems and technical capacities as a basis for Evidence-based Decision Making for Sustainable Soil Management (SSM) and Sustainable Land Management (SLM)				
Outcome 1.1: 1.1. Caribbean countries use soil data to make informed decisions and contribute to regional and global soil and climate knowledge systems	Increased national and regional capacities for soil analysis through the establishment of the Caribbean Soil Laboratory Network (CARLAN)	Though some soil analytical capability exists in some of the participating Member States, considerable strengthening is required to complement the capability, which resides at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago.	An assessment of the soil analytical capability of the participating Member States has been undertaken, the strengths and weaknesses of these facilities identified, and a Programme to Enhance their Capability outlined and is being implemented.	Caribbean Soil Laboratory Network established and operational at the Soil Science Laboratory of the University of West Indies (UWI), St. Augustine, Trinidad and Tobago at its apex. Soil laboratory capacities (equipment, human talent and harmonization processes) in Caribbean member states are enhanced under GLOSOLAN Soil Samples have been collected, analysed and the data stored in CARSIS under Standard Operation Procedures.
	Caribbean Soil Information System (CARSIS) for monitoring soil health located at a central repository and managed by the Caribbean Soil Support Group	The participating countries do not possess soil information systems, although recent projects have allowed for collection of new soil data. Furthermore, the information is not organised on a Sub-regional basis, particularly in the form of a Caribbean Soil Information System and integrated with Regional and Global Soil Information Systems (e.g. SISLAC and GLOSIS).	The basic infrastructure for the establishment of a Caribbean Soil Information System (CARSIS) is in place integrated to the Regional and Global Soil Information Systems (e.g. SISLAC and GLOSIS) and served by national soil information systems.	The Caribbean Soil Information System (CARSIS) is operational and composed by national soil information systems fully integrated with Regional and Global Soil Information Systems (e.g. SISLAC and GLOSIS). Enhanced capacities on soil survey and digital soil mapping are available in all participating countries.
Output 1.1.1: Caribbean Soil Support Group for SSM/SLM established and collaborating, with the Latin American and Caribbean Soil Partnership (ASLAC)	A Cooperative Framework (e.g. Caribbean Soil Support Group for SSM/SLM) for the Focal Points for the UNCCD and the Global Soil Partnership (GSP) to work together is established and operational.	Currently the Focal Points for the UNCCD and the Global Soil Partnership (GSP) operate independently at the national level.	The Caribbean Soil Support Group for SSM/SLM which comprise of the Focal Points for the UNCCD and the Global Soil Partnership (GSP) is established PISLM discharging its functions as Focal Point of ASLAC-Caribbean	At the national level, the Focal Points for the UNCCD and the Global Soil Partnership (GSP) are merged into National Soil Support Groups.
Output 1.1.2 National soil data including soil organic carbon reviewed and updated supported by integrated field sampling, laboratory analysis and remote sensing in support of local, national and regional planning and international reporting	Number of national soil information systems (NSIS) established)	Comprehensive available soil data for the Caribbean is restricted to the 1950-70s soil surveys, with only a few countries having digitized this information. Data are not representative.	All soil legacy data retrieved, harmonized and stored in the database Soil samples collected, processed and analysed, harmonized and stored in the NIS. Draft thematic maps generated for the main soil threats NSI designed and infrastructure already available.	Open-access National soil information systems available including thematic maps of soil threats and applications including land suitability and land degradation to guide interventions at national and local levels.
	Number of Soil Organic Carbon (SOC) and soil organic carbon potential sequestration maps available as the basis for Soil Organic Carbon Monitoring, with a target of 8 (1 per country)	Little or no information exists on Soil Organic Carbon.	Draft national soil organic carbon maps available	8 SOC maps updated with national data 8 GSOCseq maps published

	Number of Land Suitability maps for crop production (at least 5 crops) with a target of a set of 5 suitability maps per country	Crop requirement and climatic data available	Land suitability assessment model available and preliminary assessment available for validation	Full Land Suitability assessment available including at least 5 main crops depicting the most productive soils for agriculture use.
	Land degradation assessment maps available for participating countries	Available historical climactic data and expert opinion	Draft Land degradation assessment based on the LADA-WOCAT methodology available for validation	Land degradation assessment per country available depicting hot and bright spots of degradation and opportunities for prevention, rehabilitation and restoration of degraded land
Output 1.1.3. Caribbean Soil Laboratory Network (CARLAN) established based on the strengthening of national soil laboratories under the standards of GLOSOLAN	Five National Soil Laboratories fully functioning under standards of CARLAN and GLOSOLAN Caribbean Soil Laboratory network functioning with participation of at least 5 laboratories for enhancing capacities and ensuring harmonization	Currently there are 5 laboratories that carry out soil assessments	National soil laboratories staff trained and equipment procured Protocol for CARLAN available and ready for implementation	National Soil Laboratories functioning and providing soil analysis for agricultural and environmental applications following state of the art methods CARLAN fully operational under the framework of GLOSOLAN
Output 1.1.4. Caribbean Soil Information System (CARSIS) established and integrated with Regional and Global Soil Information Systems (SISLAC and GLOSIS) and digital soil mapping capacities built.	Caribbean soil Information System operational At least 10 national experts fully trained digital soil mapping, its applications and National Soil information Systems	Existing soil maps and national capacities	CARSIS validated as federated system of national soil information systems	CARSIS fully functional as webGIS system depicting the status of soil health in the Caribbean A cadre of Caribbean Digital Soil Mapping experts available
Component 2: Addressing the Drivers of Land Degradation Through the Rehabilitation of Land and Soil Degraded Areas; the Promotion of Integrated Landscape Management and Restoration and the Identification and Implementation of Livelihood Alternatives for Communities.				
Outcome 2.1: Land and Soil Degraded Areas in Haiti, Guyana, St. Lucia; Grenada and Barbados are rehabilitated, ecosystem services restored and sustainable livelihoods built.	Number of hectares of degraded lands rehabilitated and ecosystem services restored, with a target of 25,000 ha	Most of the sites air marked for rehabilitation are heavily denuded and have been identified through the LDN Target Setting exercise.	At least 7,500 hectares (50 percent) of degraded lands rehabilitated and ecosystem services restored,	15,000 hectares of degraded lands rehabilitated and ecosystem services restored,
			Strategies (Community-Private Partnerships etc.) for the engagement of the private in the rehabilitation of degraded lands prepared and being implemented.	
	Greenhouse gas emissions avoided/captured from rehabilitation and restoration activities	0		5 million tonnes GHG emissions captured or avoided
	Number of people that benefit from project activities (i.e. direct beneficiaries and from project upscaling), disaggregated by gender	0	500	1,250 beneficiaries (475 women)

Output 2.1.1 Participatory strategies for rehabilitation and restoration and Intervention plans available and implemented based on the hot and bright spots identified in the land degradation assessment.	Number of hectares covered by Intervention Plans (IP) and Participatory Strategies for Rehabilitation and Restoration (PSRR)	Currently no Implementation Plans for the target sites exist.	Rehabilitation and restoration of degraded land under operation	All 15,000 hectares covered by both IP and PSRR Barbados: 2,000 hectares Grenada: 2,000 hectares Guyana: 4,000 hectares Haiti: 5,000 hectares St Lucia 2,000 hectares
Output 2.1.2–Community Propagation Centres established and/or upgraded to Facilitate the Provision of Plant Materials and Soil Amendments	Number of community propagation centres established or upgraded	Adequate plant propagation facilities are absent at most of the areas targeted for rehabilitation and restoration. Where they already exist, upgrading them as necessary.	100 percent of propagation centres established or up graded.	15 centres established 3 centres upgraded
	Number of plants propagated by country	Limited propagation plant facilities exist in the Implementation Project Sites.	7,500,00 plants propagated (based on a planting density of 1,000 trees per hectare)	15,000,000 plants propagated Barbados: 2,000,000 Grenada: 2,000,000 Guyana: 4,000,000 Haiti: 5,000,000 St Lucia: 2,000,000
Output 2.1.3. Integrated Landscape Management (ILM), including analog forest and agroforestry systems implemented in target areas in five participating States.	Number of hectares under ILM Number of advocacy and awareness raising events on the prevention of land/soil degradation	No Integrated Landscape Management (ILM) Plans currently exist.	At least 7,500 hectares (50 percent) of degraded lands rehabilitated and ecosystem services restored and subjected to ILM	15,000 hectares of degraded lands rehabilitated and ecosystem services restored and subjected to ILM Barbados: 2,000 hectares Grenada: 2,000 hectares Guyana: 4,000 hectares Haiti: 5,000 hectares St Lucia: 2,000 hectares Awareness raising material on prevention of soil/land degradation is available in all countries of the project and government officials trained on this
Output 2.1.4–Cost-Benefit Analysis (goods and ecosystem services) of the restoration strategies are conducted, documented and shared as a basis for scaling out to other locations in participating States and to other SIDS.	Validated restoration strategies based on cost benefit analysis for different farming context are documented and shared through the Caribbean Soil Information System and FAO's regional information communication system	Cost-Benefit Analysis (goods and ecosystem services) of the loss of vegetation cover in the target areas not available.	The methodology for undertaking the Cost-Benefit Analysis (goods and ecosystem services) of the proposed restoration strategies has be decided and tested.	Report released
Comp. 3. Resilience Building to Land Degradation, Natural Disasters and Climate Change through Climate Smart Agriculture and Drought Risk Management				
Outcome 3.1: Soil productivity restored through Climate Smart Agriculture, Model Farms established on selected landscapes in Guyana, St. Lucia, Haiti, Grenada, and Barbados and applied regionally	Hectares of arable lands that have adopted SSM/SLM and CSA measures,	Land suitability assessment produced in Output 1.1.2	Climate risk assessment for all the CSA Model Farms have been undertaken and the information and data accessible to the participating farmers. Good practices adopted according to the Voluntary Guidelines for Sustainable Soil Management, the manual of good practices and others following an ecosystem approach.	A total of at least 20,000ha hectares of agricultural lands converted into farms that employ climate resilient and sustainable soil management/farming practices as follows: Barbados: 3,000 hectares Grenada: 3,000 hectares Guyana:4,000 hectares Haiti: 7,000 hectares St. Lucia: 3,000 hectares
	Greenhouse gas emissions avoided/captured from climate smart farms	0		0.4 million tonnes GHG emissions captured

	Number of people that benefit from CSA/Model Farms (i.e. direct beneficiaries and from project upscaling), disaggregated by gender	0	800	1,800 beneficiaries (750 women)
Output 3.1.1: Climate Change Implications Assessed and Validated at the farm and landscape levels and the Results used and promoted to support climate resilient and viable/ productive farming systems and value chain integration at the regional level.	No. of Climate Risks and vulnerability assessments conducted	Climate Resilient Measures absent	Climate risk and vulnerability assessments carried out in 5 countries (one in each target country), including the identification and implementation of climate resilient measures	5
Output 3.1.2: Climate Resilience Measures Integrated into Model Farms and the Information Gathered Use to Form the Basis of the Regional Guidelines which will Guide Farmers in Transitioning to Climate Smart Agriculture Production at the Regional Level	Number of Climate Smart Model Farms implemented.	Information and data compiled for inclusion into the Regional Guidelines on Climate Smart Agriculture for Caribbean SIDS.	Alternative sources of energy (e.g. solar energy systems etc.) Implemented, where necessary, to alleviate pressure on the resource base	Regional Guidelines on Climate Smart Agriculture for Caribbean SIDS prepared and disseminated to stakeholders.
	No of climate resilient agricultural practices and technologies applied	0	5	10
Output 3.1.3.: Climate Smart Agriculture-baseline and marketing strategy designed and applied and legal agreements established as a basis for scaling out successes, under a gender equality approach	Marketing strategy designed and under application	A marketing strategy designed to assist farmers in finding markets for the potential increased crop productivity is non-existent.	The design and implementation of the Market Analysis to determine which crops/products have the most commercial potential and the results being used to guide the implementation of sustainable agriculture by farmers.	A functional Marketing Strategy is in place to support the marketing of increased production of crops by farmers.
	Number of legal agreements established to scale out CSA	No legal agreements currently exist	All of the participating countries with CSC Model Farms have signed the necessary legal agreements	The CSC Model Farms continues to operate under the same conditions as during the project.
Output 3.1.4. Baselines, indicators and methods for the implementation of Climate Smart Model Farmland and Landscapes established using the High Nature Value Index (HNVI)	Percent of farms that show an increase by the HNVI, by country	Baselines, indicators and methods for monitoring the transition to Climate Smart Agriculture are non-existent, in the participating countries.	The baseline conditions for applying the High Nature Value Farming Index (HNVI) on all the farms participating in the project are established, including the protocols for its application.	The High Nature Value Farming Index (HNVI) is being used by farmers as a tool for monitoring Climate Smart agricultural practices in Caribbean SIDS
Component 4: Enhancement of Food Systems and Alternative Livelihoods through the promotion of innovations in agriculture and livestock production systems and Mobilisation of the Private Sector in Support of LDN Special Climate Change Fund (SCCF)				
4.1. Food production systems and alternative livelihood options implemented with innovative technologies and private sector support are more resilient and adapted to climate change in Belize, St. Lucia, Carricou-Grenada, Jamaica and Barbados	Number of hectares where adapted food production systems and alternative livelihood options are implemented Improvement in on-farm productivity with respect to crops and livestock Percent increase in Annual household income from agricultural activity for project beneficiaries	No recent Land Capability Assessment exist for the sites identified	Assessment of Land Capability of the Selected Sites completed	20,000 ha Adapted Land Use/ Food Production Systems established creating Alternative Livelihood Options using innovative technologies and approaches with private sector support as follows: Barbados: 1,500 hectares Belize: 8,000 hectares St Lucia: 1, 500 hectares Grenada: 2,000 hectares Jamaica: 7,000 hectares
	Number of people that benefit from improved food production systems (i.e. direct	0	500	1,800 beneficiaries (750 women)

	beneficiaries and from project upscaling), disaggregated by gender			
Output 4.1.1. Land use, food and livelihood systems assessed as a basis for identifying alternative options and innovations and setting a baseline for monitoring, as a basis for developing Resilient Food Production Systems and Alternative Livelihood Options	Percent target sites that have a land capability assessment completed (per country) Number of SSM and SLM practices for which their impact is assessed in the framework of the soil monitoring programme	No Action Plan on Options for Resilient Food productions Systems and Alternative Livelihood in Caribbean SIDS exists	Action Plan on Options for Resilient Food productions Systems and Alternative Livelihood completed	Implementation of the Action Plan and practical implementation of Alternative Livelihood actions
	Number of technologies demonstrated and tested with high adaptation potential	0	5	10
	Number of hectares of improved pastures	Heavily degraded pasture lands	Value Chain Analysis Opportunities for the Reorganisation of Livestock production completed including pasture improvement	Report and Action Plan for the Regionalisation of Livestock Production in Grenada
Output 4.1.2: Financial Options for Enhancing SSM and SLM Including Opportunities for Private Sector Collaboration and Potential Financing Identified	Percent of bankable project prepared with project resources financed by private sector investment	There is limited Private Sector direct investments in sustainable soil and land management in the participating countries, notwithstanding concerns about the deterioration of these resources due to overuse and over exploitation No systematic strategy exists for defining bankable investment projects with respect to SSM and SLM	At least 10 bankable projects prepared and submitted for financing to target private sector funds (e.g. Moringa, & Green, LDN fund) (at least two bankable projects from each of the participating countries in this Sub-Component) Compilation of Incentive Scheme for encouraging private sector investment in SSM and SLM	At least 50 % of the project submitted to private sector funds receive financing
Output 4.1.3. Promotion of Innovation in Agricultural Systems, considering a gender approach	Regional Research Facility on New Climate Resilient Adaptation Technologies (RRF-NAT) is operational Number of new climate resilient adaptation technologies tested Number of farmers that have benefitted from information provided by RRF-NAT	Currently, no regional research or advice facilities exist to test and support the application of climate resilient technologies to land management in the participating countries	RRF-NAT is established	The RRF-NAT on the 25 acres farm provided by the UWI is operational and performing the functions for which it was established
Component 5. Mainstreaming SLM and Sustainable Soil Management (SSM), Strengthening Knowledge Management, Enhanced Training and Capacity Development, the Building of Financial Capability to Implement SLM, the Regional LDN Strategy and Monitoring and Evaluation				
Outcome 5.1 Regional capacity development and training programme established	Percent persons trained in SSM, SLM and CMA methods and techniques from the participating countries that contribute to the development of components 1 to 4, disaggregated by gender.	Major gaps exist in Caribbean SIDS with respect to the integration of climate resilient methods and approaches in SSM and SLM training and application. In addition, major gaps in knowledge accessibility of information and data on SSM and SLM as well as investments by the private sector in these areas.	The Regional Infrastructure for addressing these gaps and weaknesses are well established through this project for addressing the identified gaps and weaknesses.	The basic Regional Infrastructure for Mainstreaming SLM and Sustainable Soil Management (SSM), particularly in Regional Policy Frameworks; Strengthening Knowledge Management as it relates to SSM and SLM, the training a cadre of stakeholders in climate resilient methods and approaches, including in Climate Modelling and Projections for

		Insufficient effort is currently directed to regional climate modelling and Projections that can feed into or inform SLM in Caribbean SIDS. Significant capacity gaps exist in Caribbean SIDS with respect to SSM and SLM as well as the integration of these concepts into Regional Policy Frameworks.		SLM; the Building of Financial Capability to Implement SLM the basis for preparing a Regional LDN Strategy is well established and provides a Foundation for other interventions on SSM and SLM.
Output 5.1.1. Capacity of Stakeholders strengthened to (i) undertake national soils surveys, (ii) apply climate resilient methods and approaches (iii) apply Risk Assessment and CC adaptation best practices for Agriculture	Number of technicians from Member States supporting the upgrading of national soils surveys trained	Soils data for participating countries have not been updated in a comprehensive manner in the last five decades or so No information on soil carbon currently exists for the participating countries	The Training Needs Assessment has been undertaken and a Regional Training Needs Implementation Plan is prepared and being implemented. The technicians from the participating Member States responsible for supporting the undertaking of the upgrading of national soils' surveys have been trained and assisting with the implementation of Component 1	At least 25 technicians from the participating Member States responsible for supporting the undertaking of the upgrading of national soils' surveys trained. Soils data for the participating countries, including on soil carbon is available and accessible and countries can integrate the data/information into their respective LDN Plans
	No of persons trained under the Train-the-trainers programme including Agricultural Extension officers and other government officials	Limited training of Agricultural Extension officers and other government officials trained in climate change resilient methods and approaches	Trainers have completed a significant part of their training and are assisting stakeholders, particularly with respect to the mainstreaming of climate change resilient methods and approaches in their farming activities	At least 25 trainers from participating countries trained and providing professional advice to stakeholders including on the application of climate change resilient methods and approaches
	No of farmers trained to support the implementation of the various Components of the project, in particular Components 2 to 4	No systematic programme for farmers, particularly on climate change resilient methods and approaches currently exists in the participating countries	At least 500 farmers have completed their basic training under the project of which 40 percent must be women	At least 1000 farmers (40 percent female) trained in Risk Assessment and Climate Change Adaptation (CCA) Best Practices for Agriculture from the participating countries (accounted for in the SCCF tracking tool)
	Number of postgraduate scholarships awarded to young talents to study areas relevant to the issues/problems in SSM and SLM in Caribbean SIDS	A new Programme being launched in collaboration with the University and supported by the Faculty of Food and Agriculture	The Postgraduate Scholarships have been awarded and the recipients are undertaking research relevant to SSM and SLM and the observations, to the extent practicable, being fed into the implementation of SOILCARE	At least 5 PISLM/SOILCARE Postgraduate Scholarships awarded, with a target of at least 3 women
Outcome 5.2. SLM/LDN Knowledge Management, Technical Assistance and Communication in SLM and SSM strengthened and enhanced	Knowledge products/materials produced and disseminated to stakeholders in the region. Social Learning Platform being used to network, share, collaborate and exchange ideas to solve problems. Indigenous Peoples Network established and used by Indigenous Peoples to strengthen Regional Networking	Major gaps exist within Caribbean SIDS with respect to adequacy of information on SLM and SSM as well as an effective mechanism for facilitating the movement of technical expertise to address specific issues and problems relating to LD, SLM and SSM, among many others.	The basic infrastructure for Knowledge Management, technical assistance and communication on SLM and SSM are established	A number of initiatives are launched and operational, namely, the Caribbean LDN and SLM Knowledge Hub which is designed to capture data and information generated through SOILCARE Phase 1 and to facilitate its use and transfer across the region, thus increasing accessibility; and the Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism which will provide a mechanism for the identification and transfer of specific expertise across the region to address specific issues and problems.

Output 5.2.1. Caribbean LDN and SLM Knowledge Hub established and operational	Caribbean LDN and SLM Knowledge Hub operational	Currently the regional compilation and dissemination of information on the region's soil and land management issues, to other earth resources professional as well as to the general, public is non-existent. This Outcome seek to address this gap.	The Feasibility Study to flesh out the elements of the Caribbean LDN and SLM Knowledge Hub and its operational modalities has been commissioned and undertaken and the Hub is established	Caribbean LDN and SLM Knowledge Hub is established and operational, including a Regional Network to support the Indigenous Peoples of the Region and the design and delivery of a Regional SLM and LDN Public Education and Awareness Initiative.
	Number of issues of the Caribbean Land-Soil Outlook 2030 published	Currently no regional publication dealing specifically with SSM and SLM exists in Caribbean SIDS	At least two issues of Caribbean Land-Soil Outlook 2030 published	At least four issues of Caribbean Land-Soil Outlook 2030 published and the publication is being used as for Reference by Universities in Caribbean SIDS and beyond.
Output 5.2.2. Regional Cooperation in SLM and SSM Encouraged and Facilitated	Number of persons in the data base supporting the Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism Number of Cooperation Assistance provided by the mechanism throughout the duration of the project	No formal Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism exists.	The basic infrastructure for the operations of the Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism is in place	The Caribbean SLM/LDN SIDS-SIDS Cooperation Mechanism is established and operational.
Outcome 5.3. Climate Resilient SLM and Regional LDN Strategy Mainstreamed/Integrated into Caribbean Community Regional Policy Frameworks, Decision Making Processes and into National Level planning processes	Number of Caribbean Community Regional Policy Frameworks, reviewed, amended and approved.	Currently SSM and SLM are not sufficiently well integrated into the Caribbean Community Policy Frameworks.	The various Caribbean Community Organs have met and a decision taken to integrated SSM and SLM into the various Caribbean Community Policy Instruments and the necessary revisions in the Policy Frameworks made.	The Outcomes and Outputs of SOILCARE Phase 1 are integrated into the various Community Policy Instruments, namely, the Caribbean Community Agricultural Policy, Draft Community Environment and Natural Resources Policy Framework etc. and adopted by the relevant Community Organ(s), as well as the mainstreaming of adaptation. In addition, the establishment of a sub-regional SSM framework agreement contributing to LDN; an updated sub-regional implementation plan for SSM and LDN, and an operational soil/LDN platform across institutions and decision-making bodies are also established.
5.3.1. Review and Updating of the Caribbean Community Regional Policy Frameworks and Adoption by its Decision-making Processes	Number of Policy Instruments Reviewed, Updated and Approved Number of Joint Meeting of COTED for environment/sustainable development and agriculture convened	SSM, SLM and climate resilience not sufficiently well represented in the various Caribbean Community Policy Frameworks.	At least two Meeting of the combined COTED for environment/sustainable development and agriculture are convened (a) the formally recognised the need for updating the Community's Policy Framework and (b) approval of the changes made and decisions are made to integrate Sustainable and Climate Resilient Soil/ Land Management into National and Regional Policy Frameworks and Decision Making Processes.	The Caribbean Community Regional Policy Frameworks are updated to include issues dealing with SSM, SLM and Climate Resilience.
	Number of countries that update their national policies or legal frameworks ton include SSM, SLM and climate resilience in line with the Caribbean Community Regional Policy Framework	0	3	8

5.3.2. A Sub-regional Sustainable Soil Management (SSM) Framework Agreement Contributing to LDN and Strengthening Regional Efforts to Address Climate Change Established	No of Institution which sign the Framework agreement and participate actively in the Sub-regional Sustainable Soil Management (SSM) Framework Agreement	No such group exists with the mandate as outlined for the Sub-regional Sustainable Soil Management (SSM) Framework Agreement	The Sub-regional Sustainable Soil Management (SSM) Framework Agreement is signed by all the target institutions and they are participating actively in the implementation of the project.	Sub-regional Sustainable Soil Management (SSM) Framework Agreement is operational and SSM, SLM and Climate Resilience are integrated more explicitly into the programming of these organisation
5.3.3. Building Synergies and Strengthening Cooperation Between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals	Number of projects which are facilitated to emphasise the synergies and strengthen Cooperation Between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals	The operational modalities for facilitating synergies and strengthen Cooperation Between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals does not exists.	The operational modalities for facilitating synergies and strengthen Cooperation Between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals is agreed by all Parties involved and Member States are using this modality for the formulation of initiatives which builds synergies and strengthen Cooperation between these two Programmes.	The operational modalities for facilitating synergies and strengthen Cooperation Between SOILCARE Phase 1 and the SIDS Island Programme on Chemicals and project and programmes are being developed and funded this vehicle.
Outcome 5.4. Promotion of Investment and financing in SLM/SSM and climate resilience with Private and Public Sector	The Caribbean SIDS LDN Transformative Fund Mechanism is established and funded.	Currently no such mechanism exist to facilitate the Promotion of Investment and financing for SLM, SSM and Climate Resilience with Private and Public Sector entities.	The Feasibility Study to explore the possibility of establishing the Regional Fund to ensure the necessary resources are available to stakeholders, in particular, small farmers, to incorporate SLM and Climate Smart approaches and methods into their farming systems is undertaken and approved by the participating countries and the PISLM and efforts are under the way to resource it.	The Caribbean SIDS LDN Transformative Fund Mechanism is established and resources mobilised for climate resilient SSM/SLM
	Private and public investment mobilized which mainstream climate adaptation considerations	0		TBD at inception
Output 5.4.1. Caribbean SIDS LDN Transformation Funding mechanism established and resources mobilised for climate resilient SSM/SLM	Caribbean SIDS LDN Transformation Funding mechanism established, resourced and operational.	Currently no such Funding mechanism exists in Caribbean SIDS to promote and finance actions supporting climate resilient SSM/SLM	The operational modalities for the functioning of the Caribbean SIDS LDN Transformative Fund Mechanism is agreed by the participating Member States.	The Caribbean SIDS LDN Transformative Fund Mechanism is operational and resourced.
Outcome 5.5 An effective Gender Sensitive Monitoring and Evaluation Framework in Support of Project Implementation established	Project Monitoring System supports project delivery while following a Results Based Management approach	Currently no such modality for undertaking an effective Gender Sensitive Monitoring and Evaluation Framework for Climate resilient SSM and SLM exists in Caribbean SIDS	The operational modalities for undertaking an effective Gender Sensitive Monitoring and Evaluation Framework in Support of Project Implementation is well established	An effective Gender Sensitive Monitoring and Evaluation Framework in Support of Project Implementation
5.5.1. Monitoring and Evaluation Process for the Project executed in accordance with GEF Guidelines	Gender sensitive project monitoring system established	The modalities for undertaking the Independent Evaluation are worked out between the IA and the EA.	An Independent Mid-Term Evaluation is undertaken and the results inform Project Implementation.	An Independent Terminal Evaluation of SOILCARE Phase 1 is undertaken and the Recommendations are used as the basis for informing SOILCARE Phase 2.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Comment	Response
Germany requests that the following requirements are taken into account during the design of the final project proposal:	
? To ensure an integrated synergetic approach and avoid duplication of efforts, Germany kindly asks to seek close linkages to relevant international stakeholders and processes beyond the GSP, especially regarding the three Rio conventions. For the development of the national and subregional soil information system as well as for capacity building, Germany highly recommends partnering with the land degradation neutrality initiative of the Group on Earth Observations (GEO-LDN). Regarding SLM practices, the project should ensure a close exchange with the World Overview of Conservation Approaches and Technologies (WOCAT). In addition to linkages to GSP, the national soil experts should have linkages and ensure synergies with the Rio conventions and other relevant processes.	Agreed. The proposed project will seek linkages with the 3 Rio Conventions. Some of the project sites include landscapes around protected areas, including restoration work and climate smart farms, therefore relevant stakeholders will be invovled. The GSP will support the development of the subregional soil information system and ensure it is integrated with the regional and global soil information systems (SISLAC and GLOSIS). The process will focus on building national capacities to ensure local stakeholders can develop the data needed for land use planning and to design project investments. GEO-LDN will be approached during project implementation to understand how they can support project activities. FAO works very closely with WOCAT worldwide, and routinely support countries together. There is significant exchange regarding tools and approaches, so their input will be included also during project implementation.

? The current PIF establishes a direct relationship between data availability and meeting LDN targets. However, the link is not that straight forward - many factors impede the use of data for decision making, e.g. political and human factors that play into decisions, lacking capacity to understand and interpret data, inadequate presentation of the data, mistrust in the quality of the data. The final proposal should elaborate on the approach taken to ensure that data will lead to meeting LDN targets. Applying a user- centered design process based on the principles for digital development will be crucial.	Fully Agree. The project team has redesigned components 1 and 5 to ensure that staff in the region have the capacity to develop the necessary data with significant field validation. The project is investing significant resources to ensure that project beneficiaries can collect, validate, and analyze data themselves in order to use it in land use planning and to determine field level investments. The partnership with PISLM and UWI will be key to build the necessary capacities.
? Germany appreciates the detailed elaboration of outcomes, outputs and indicators. For outcome indicator 3.1 Germany suggest linking it to the national monitoring of SDG indicator 15.3.1. Outcome indicator 5.2 "Number of knowledge and training material disseminated in the region" is not meaningful in terms of outcome, Germany suggests revising this indicator to account for quality and impact of the training material.	While outcome indicators for components 2 (restoration), 3 (climate smart farms), and 4 (food systems) are based on the number of hectares under intervention, the project will also collect information on LDN indicators including 15.3.1. This will be used to support national report preparation and will be monitored as part of the project M&E system. Outcome indicators for capacity building have been redefined to account for quality and impact of the training material
United States	
Explain the process put into place to assist project countries with developing targets through the Land Degradation Neutrality Target Setting Process (except for Guyana and Grenada);	LDN target setting processes will be supported under component 5. The project will help countries meet their LDN targets since many of the national implementation sites are priority sites identified during the target setting process. The project will test local level decision-making to meet these targets.
Consider streamlining the baseline projects that this proposal intends to expand on, as the current list seems ambitious;	The list of baseline projects has been revised and is now more targeted.

Expand on how implementation of the project could be impacted by natural disasters and how FAO plans to mitigate this possibility;	Please refer to section 5 (Risks) of the project document which discuses mitigation measures for natural disasters. This includes strengthening the resilience of ecosystems through the adoption of environmentally sound practices including forest restoration, SFM/SLM, agroforestry. The project foresees training of stakeholders to prepare them to take the necessary proactive actions to withstand shocks associated to meteorological events.
Expand upon how FAO will cross-reference the work outlined in this PIF with similar or related programs and projects that are being carried out by other implementers and / or funding, and how FAO will adjust this project to make sure that it is complimentary and not duplicative of ongoing activities;	Please refer to project document section 6, coordination with other relevant GEF financed initiatives and other initiatives. The project will actively look for synergies and opportunities to complement field activities with sister organizations.
Expand on the particulars of stakeholder consultations planned, including which specific stakeholder groups were engaged; and	Please refer to section 2 (Stakeholders) and the stakeholder engagement plan as well as the gender action plan (Section 3)
Expand on ways in which Ministries involved in this project will coordinate with other, including through planned institutional arrangements between Ministries.	Please refer to section 6 Coordination. Project partners include ministries of Environment, Agriculture, Lands, and Survey Commissions. Components 1 and 5 will focus on building the necessary regional and national structures to support land use planning in the context of ASLAC. Joint stakeholder participation will be key to the success of field activities under components 2 to 4.
In addition, we expect that FAO in the development of its full proposal will: ? Provide more information on how beneficiaries, including women, have been involved in the development of the project proposal and will benefit from this project;	Please refer to Section 3 (Gender) and Section 2 (Stakeholders) where we discuss stakeholder participation during project preparation as well as their involvement during project implementation.

? Engage local stakeholders, including community-based organizations, environmental non-governmental organizations and the private sector in both the development and implementation of the program; and	Community based organizations will be key actors, particularly in the field components 2, 3 and 4. The project will dedicate significant resources to build their capacity and to transfer technologies to support adaptation efforts and to improve production and conservation.
? Clarify on how the implementing agency and its partners will communicate results, lessons learned and best practices identified throughout the project to the various stakeholders both during and after the project.	Kindly refer to section 8 (Knowledge management)
? , Thank you again for the opportunity to provide feedback on this important PIF. We look forward to seeing our feedback incorporated in the project proposal at the CEO endorsement stage of the process.	

GEF secretariat comments

Response

1. General Overall Comments

STAP welcomes FAO PISLM project ?CSIDS -SOILCARE Phase1:

The project /initiative aims to strengthen the capacity of the Caribbean SIDS in achieving land degradation neutrality (LDN) - countries? capacities to measure and monitor soil carbon, as well as apply policies and frameworks that support the implementation of LDN at the national and regional level.

STAP is pleased by the innovativeness of the project to i) establish an LDN regional strategy, and ii) to design ?bankable? LD investment projects to mobilise the private sector in support of LDN, iii) the adoption of climate -smart model farms.

This is a well -conceived and well -designed project that responds to increasingly severe current problems and considers solutions that will be resilient to emerging future threats.

STAP welcomes the partnership between countries, research organizations, private sector, farmers, indigenous groups, and other stakeholders.

STAP appreciates the depth of consultation involved in developing the PIF.

By jointly addressing LDN, SSM and SLM challenges together with climate vulnerability and impact challenges provides opportunities for truly efficient and synergetic solutions.

The positive comments made by the STAP on the conception and design of the project and the consultation process undertaken are much appreciated.

2. To strengthen the Project description STAP Recommends

To generate expected **outcomes** requires

•a robust monitoring of the progress being made

•a learning plan to be developed, and

•a Theory of Change is in place that identifies internal and external factors that can affect implementation and delivery of programmed interventions.

•Incorporate in the project elements of the LDN conceptual framework related to ?achieving neutrality (Module D) so that the cumulative effect of national interventions can be properly accounted towards the claimed global environmental benefits to be generated. (See pg. 60-90 of LDN conceptual framework (https://www.unccd.int/publications/scientific-conceptual-frameworkland-degradation-neutrality-report-science-policy

Outputs

The description of products and services lacks evidence/rationale to support the claim of expected outputs and outcomes.

The proposal lacks a good map of landcover/land use thus STAP queries the method applied to derive the quantitative outputs and indicators mentioned (pgs 4-11, pgs 15-18).

All the issues raised by the STAP have been addressed. Systems to monitor progress have been incorporated in the project document, so is a Learning Plan (e.g. *Learning and Data/Information Gathering and Dissemination Mechanism* **that** facilitates the gathering, synthesis and management of information to support a continuous feedback learning loop). A Theory of Change has been formulated that identifies internal and external factors that can affect implementation and delivery of programmed interventions (See Annex??.). In addition, specific reference is made to conceptual framework related to ?achieving neutrality? as the guiding principles for the rehabilitation of degraded lands (See Component 2).

3. To strengthen the Project description STAP Recommends

Separate i) problem statement (problems, trends, root causes and barriers from ii) baseline type activities and iii) project actions

Describe in greater detail the **context of the global environmental problems** i.e. social, economic, climatic and environmental conditions that influence the challenges the project is addressing (partly available for some countries/ the region but would be useful to standardize country context descriptions.

Describe the **barriers** further at country level

Describe lessons learned from other GEF /non GEF projects and identify how the project will draw from this learning.

Develop a theory of change (alternative scenario): i) describe the impact pathway that will lead to the outcomes ? the desired change ii) identify the assumptions required .Ref: https://www.theoryofchange.org

GEBs

Describe the methods that will be used to measure and monitor the 9 benefits listed in the PIF. Some of the benefits are covered by core indicators, others do not appear to have an assigned indicator . Maybe add soil carbon to the list of benefits as included in project description summary.

Apply UNCCD **Scientific Conceptual Framework for Land Degradation Neutrality-** a land use planning tool that guides LDN implementation based on the hierarchy response (avoid, reduce and reverse LD). https://knowledge.unccd.int/knowledge-products-and-pillars/guide-scientific-conceptual-framework-landdegradation-neutrality

See also STAP?s advisory document ?**Managing Soil Organic Carbon for Global Benefits**? that summarizes the scientific and technical understanding of soil carbon management and how this can generate GEBs http://stapgef.org/sites/default/files/stap/wp-content/uploads/2013/08/STAP-SOC-Reportlowres.pdf

All of the issues identified have been incorporated into the project document.

4. To strengthen the Project description STAP Recommends

Innovation: Indicate specific forms and nature of innovation in the various domains e.g. at least some types of technological and business model innovations to be pursued in this project. Ref http://stapgef.org/sites/default/files/publications/STAP%20Innovation%20report_WEB.PDF

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Potential for scaling up: exists but its discussion is rather brief and deserves a more thoughtful treatment by i) identifying the barriers to scaling, such as institutional and governance challenges and ii) addressing those to improve the scaling potential.

Gender equity Women are intended to be one of the major beneficiaries, and women?s organizations will be prominently represented in the project?s steering groups (national and regional). Elaborate further on i) the gender analysis and plan the project will implement with ii) detailed assessment of gender differentiated risks and opportunities and iii) describe related response measures i.e identify the type of gender-responsive interventions that can lead to the expected outputs.

Ref ?Towards a gender responsive implementation of the UNCCD? http://www.unwomen.org/en/digital-library/publications/2018/2/towards-a-gender-responsiveimplementation-of-the-un-convention-to-combat-desertification

Specific forms and nature of innovation is the various domains are identified in the project document in response to STAP. See the Section titled ?Innovation, Sustainability and Potential for Scaling Up.?

See the Section on ?Gender Equality and Women?s Empowerment? in particular the third paragraph. The types of Gender-responsive interventions are also included, for example, in Output 3.1.3: Climate Smart Agricultural-baseline and marketing strategy and *Outcome 5.*1**.,** where provision is made for at least forty percent of the training provided through SOILCARE Phase 1, are for women**.**

5. Stakeholder engagement and social learning STAP Recommends

Engaging stakeholders in project development and implementation will continue to be essential.

Emphasize how the project will implement effective learning by engaging stakeholders and establishing a governance framework for the project. Embed governance arrangements and stakeholder engagement throughout the project as essential for managing knowledge, and the project?s objective.

In developing the knowledge-hub platform (COMP. 5), look into lessons, or the evidence, of social learning (platforms) Key elements (Garard, J. et al.,2019).

1) the selection of participants relevant to the topic and conducive to positive interactions
2) openness as an attitude in both organizers and participants;
3) facilitation of interactions and the role of the facilitator
4) communication and transparency between organizers and participants
5) fostering dialogue between participants through various means.?

Invest in the **design and monitoring of the platform** as a basis for achieving social learning among the groups.

Ref. Garard, J., Koch, L., & Kowarsch, M. (2018). Elements of success in multi-stakeholder deliberation platforms. Palgrave Communications, 4(1), 129.

In developing the Knowledge Hub consideration is given to the design and establishment of a **Social Learning Platform** as an integral part of the system, as a means of enabling social and informal learning, where learners network, share, collaborate and exchange ideas to solve problems, which confront them. This is addressed in ***Output 5.2.1. Caribbean LDN and SLM Knowledge Hub Established:***

6. Knowledge Management STAP Recommends

A key element is to generate new knowledge by preparing / updating soil data (CSIS) that will be the basis of land use planning in subsequent components.

Beyond the comprehensive LDN Knowledge Hub, the rest of KM activities seem somewhat fragmented and include various forms of transferring knowledge, including in-field extension services regional cooperation mechanism and consultative platforms.

Include KM indicators and metrics in order to produce a more systematic synthesis of lessons for sharing within this project and with the rest of the world upon conclusion of the project.

The learning process should put in place mechanisms that gather and manage information to support a continuous feedback learning loop. The theory of change can prove to be a useful tool to track and adjust the project?s progress; thereby, manage knowledge.

As mentioned above

A step in component 5 should be a **mapping of ?current knowledge management and communication hubs? in the Region that GEF and other major donors have invested in to underpin this component, and tap in to existing infrastructure & networks to avoid duplication**.

The proposed activities should not occur in ?silos? around this project, but as part of ongoing initiatives in the Region pursuing complementary outputs. to ensure long term, ?durable? outcomes, beyond the lifetime of the project (e.g. combine solving existing problems with preparing for climate change)

Coordination: **Overlapping partnership with earlier efforts will facilitate feeding lessons into this new project, but look for more systematic ways of channeling results from recent projects.**

The knowledge activities, in particular, the training knowledge activites have been consolidated in Component 5.1.

The Caribbean Soil Outlook which is addressed in 5.2. is one such mechanism which is included in the Project Document through which information can be gathered and processed and made available to wider constitutions.

Addressed in Output 5.2. and

Addressed in Output 5.2. and

7. To Strengthen Risks Analysis STAP Recommends

Risks The identified risks are plausible but far from comprehensive. Climate risk is not included in the risk table, possibly because climate vulnerability and resilience is a main issue in the project.

Provide a thorough risk assessment of the many factors or events that could go wrong and undermine the aspired results of the project?s activities and investments with well-conceived risk mitigation measures

Elaborate on the social (aversion or reluctance of indigenous people or farmers to participation and change) and environmental (natural disasters) potential risks

Develop a more systematic assessment of climate risks, their possible impacts on the baseline and the alternative scenarios, conceivable response measures under these scenarios, etc.

Describe the climate projections (temperature + precipitation) for each country. Ref. Caribbean Community Climate Change Centre (https://www.caribbeanclimate.bz/).

Consider the following questions during the project design:

? How will the project?s objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?

? Has the sensitivity to climate change, and its impacts, been assessed?

? Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?

? What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?

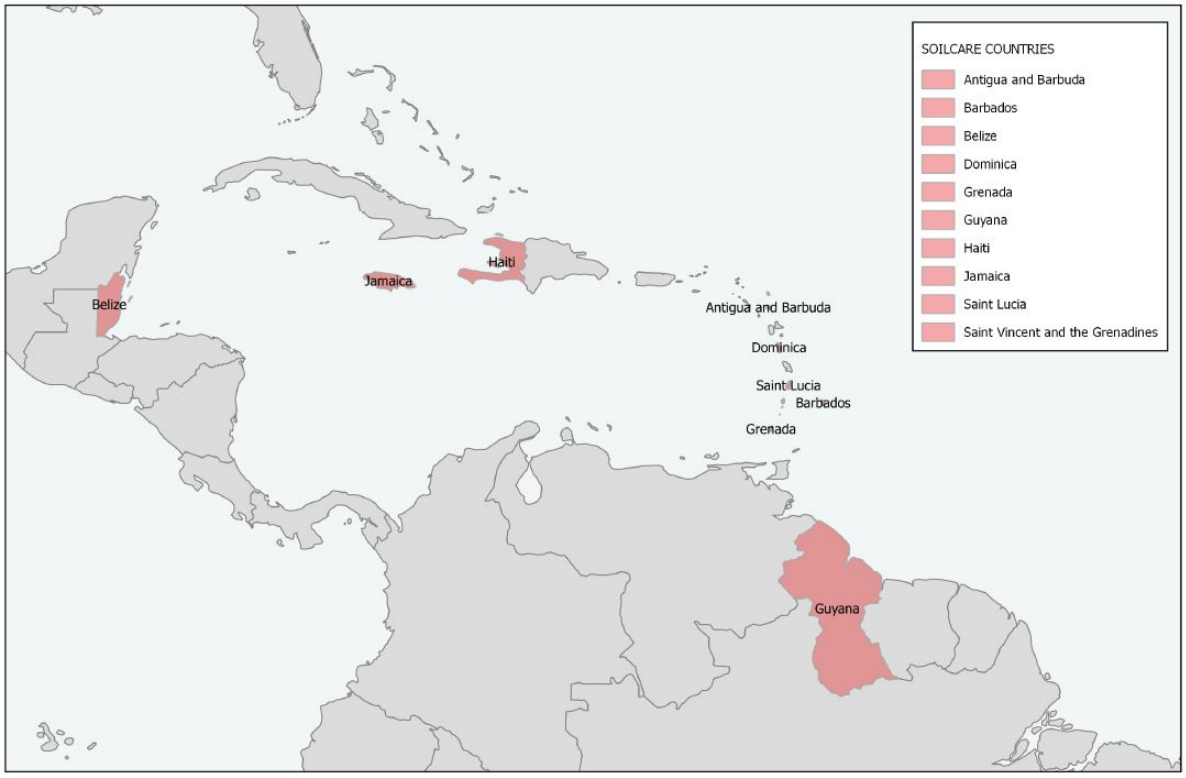
The risks posed by climate variability and climate change impacts have been included as recommended by the STAP as important risks. In addition as an integral part of Component 3 a systematic assessment of climate risks, their possible impacts on the baseline and the alternative scenarios, and conceivable response measures under these scenarios, presented in the form of a Climate Risk Assessment will be undertaken.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF:			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent To Date***	***Amount Committed***
Signature of LOA	34,700	34,700	
- Report from Inception Workshop - Revised workplan fro each project outcome	44,600	44,600	
Completed baseline assessment	33,500	33,500	
- Draft FAO-GEF PRODOC - Validation Workshop	26,000	26,000	
- Final Draft of FAO-GEF PRODOC for internal review and submission to GEFSEC - Final report for LOA	34,700		34,700
	173,500	**138,800**	**34,700**

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.



ANNEX E: Project Budget Table

Please attach a project budget table.

														Expenditure by calendar year					
FAO Budget Line		Unit	Unit cost	No. of units	Component 1	Component 2	Component 3	Component 4	Component 5	Subtotal	Project Management	M&E	Total	2021 Yr 1*	2022 Yr 2*	2023 Yr 3	2024 Yr 4	Total
5013	**Consultants**																	
	PROJECT PERSONNEL																	
	Project Manager	Month	4,000	48						-	192,000		192,000	48,000	48,000	48,000	48,000	192,000
	Procurement Officer	Month	2,000	48							96,000		96,000	24,000	24,000	24,000	24,000	96,000
	Project Secretary & Office Assistant	Month	1,500	48							72,000		72,000	18,000	18,000	18,000	18,000	72,000
	PISLM Liaison Officer	Month	2,500	48					120,000	120,000			120,000	30,000	30,000	30,000	30,000	120,000
	Sub-total				-	-	-	-	**120,000**	**120,000**	**360,000**	-	480,000	**120,000**	**120,000**	**120,000**	**120,000**	**480,000**
	INTERNATIONAL CONSULTANTS																	
	Internation Consultnat - SOILCARE Intergration Specialist	Year	50,000	4		200,000				200,000			200,000	50,000	50,000	50,000	50,000	200,000
	Regional Technical Officer	Month	3,000	48			144,000			144,000			144,000	36,000	36,000	36,000	36,000	144,000
	International Consultant - Soil mapping Expert	Days	300	100	30,000					30,000			30,000	30,000				30,000
	Sub-total International consultants				**30,000**	**200,000**	**144,000**	-	-	**374,000**	-	-	374,000	**116,000**	**86,000**	**86,000**	**86,000**	**374,000**
	NATIONAL CONSULTANTS																	
	National Technical Assistant (one per country)	Month	1,500	384			576,000			576,000			576,000	144,000	144,000	144,000	144,000	576,000
	National Consultant - Investment and Finance Expert in	week	2,125	40		25,000		30000	30,000	85,000			85,000	85,000				85,000
	National - Soil Lab Expert	week	2,000	15	30,000					30,000			30,000	30,000				30,000
	National - Climate Smart & Agri. Marketing Expert	week	2,000	25			50,000			50,000			50,000	50,000				50,000
	National - Land Expert	week	2,000	25			25,000	25,000		50,000			50,000	50,000				50,000
	National - Livelihood and Gender Expert	week	2,000	15		30,000				30,000			30,000		30,000			30,000
	National - Communicatioins Consultant	week	1,500	20					30,000	30,000			30,000	7,500	7,500	7,500	7,500	30,000
	National - Land/Soil Policy Specialist (Land/Soil Outlook)	week	2,000	20					40,000	40,000			40,000	10,000	10,000	10,000	10,000	40,000
	National - Soil Chemical Pollution Reduction Expert	week	2,000	15					30,000	30,000			30,000	7,500	7,500	7,500	7,500	30,000
	National - Capacity/Training Assesment Specialist	Month	2,000	15					30,000	30,000			30,000	7,500	7,500	7,500	7,500	30,000
	National - Indigenous Peoples Specialist	Month	1,400	25					35,000	35,000			35,000	8,750	8,750	8,750	8,750	35,000
	Sub-total National consultants				**30,000**	**55,000**	**651,000**	**55,000**	**195,000**	**986,000**	-	-	986,000	**400,250**	**215,250**	**185,250**	**185,250**	**986,000**
	Subtotal Consultants				60,000	255,000	795,000	55,000	315,000	1,480,000	360,000	0	**1,840,000**	**636,250**	**421,250**	**391,250**	**391,250**	**1,840,000**
	TRAVEL ON OFFICIAL BUSINESS																	
	1601 Staff Travel & Transport	Lumpsum	110,000	1		60,000	50,000			110,000			110,000	27,500	27,500	27,500	27,500	110,000
	Subtotal travel				0	60,000	50,000	0	0	110,000	0	0	**110,000**	**27,500**	**27,500**	**27,500**	**27,500**	**110,000**
	SUB-CONTRACT COMPONENT																	
	SUB-CONTRACTS (MOUs/LOAs for supporting organizations)																	
	Sub-contract to Governmental agencies	Lumpsum	-	0						-			-	-	-	-	-	-
	Sub-contract to UWI: Internship to Research Facility	Lumpsum	220,000	1	220,000					220,000			220,000	55,000	55,000	55,000	55,000	220,000
	Sub-total				**220,000**	-	-	-	-	**220,000**	-	-	220,000	**55,000**	**55,000**	**55,000**	**55,000**	**220,000**
	SUB-CONTRACTS to private firms																	
	Sub-contract with Farmer Organizations	Lumpsum								-			-	-	-	-	-	-
	Sub-contract with CSO Farmer Groups	Lumpsum	50,205	1		50,205				50,205			50,205	25,103	25,103			50,205
	Sub-total				-	**50,205**	-	-	-	**50,205**	-	-	50,205	**25,103**	**25,103**	-	-	**50,205**
	EVALUATION																	
	Mid Term Evaluation	Lumpsum	80,000	1						-		80,000	80,000		80,000			80,000
	Terminal Evaluation	Lumpsum	80,000	1						-		80,000	80,000				80,000	80,000
	Measurement of Project Indicators	Lumpsum								-		-	-	-	-		-	-
	Audit	Annual	7,000	4						-	28,000		28,000	7,000	7,000	7,000	7,000	28,000
	Sub-total				-	-	-	-	-		**28,000**	**160,000**	188,000	**7,000**	**87,000**	**7,000**	**87,000**	**188,000**
	Subtotal contracts				220,000	50,205	0	0	0	270,205	28,000	160,000	**458,205**	**87,103**	**167,103**	**62,000**	**142,000**	**458,205**
	TRAINING COMPONENT																	
	GROUP TRAINING																	
	Training	Lumpsum	419,000	1					419,000	419,000			419,000	104,750	104,750	104,750	104,750	419,000
	Capacity Development	Lumpsum	435,000	1					435,000	435,000			435,000	217,500	108,750	108,750		435,000
	Projct Developent Support Facility (PDSP)	Lumpsum								-			-	-				-
	Sub-total				-	-	-	-	**854,000**	**854,000**	-	-	854,000	**322,250**	**213,500**	**213,500**	**104,750**	**854,000**
	MEETINGS/CONFERENCES																	
	Inception Workshop	Workshop	21,600	1						-		21,600	21,600	21,600				21,600
	Regional Project Steering Committee	Meeting	21,600	4						-		86,400	86,400	21,600	21,600	21,600	21,600	86,400
	Caribbean Soil Support Group	Meeting	22,500	4	90,000					90,000			90,000	22,500	22,500	22,500	22,500	90,000
	Sustainable Land/Soil Management Framework Group	Meeting	22,000	4					88,000	88,000			88,000	22,000	22,000	22,000	22,000	88,000
	Regional Network Supporting Indigenous Peoples	Lumpsum	40,000	1					40,000	40,000			40,000	40,000				40,000
	Joint COTED Meeting [Env. & Agri.]	Meeting	42,333	3					127,000	127,000			127,000	42,333		42,333	42,333	127,000
	Sub-total				**90,000**	-	-	-	255,000	345,000	-	108,000	453,000	170,033	66,100	108,433	108,433	453,000
3999	Component total				**90,000**	-	-	-	#######	1,199,000	-	108,000	1,307,000	**492,283**	**279,600**	**321,933**	**213,183**	**1,307,000**
	4100 EXPENDABLE EQUIPMENT																	
	4101 Office supplies and consumables (paper and other supplies)	Lumpsum	10,000	1						-	10,000		10,000	3,333	3,333		3,333	10,000
	4102 Office supplies and consumables (Computers, Printers, etc.)	Lumpsum	48,000	1						-	48,000		48,000	48,000				48,000
	4103 Laboratory supplies and consumables (fees for soil testing)	Sample	250	4000	1,000,000					1,000,000			1,000,000	1,000,000				1,000,000
	4105 GIS and Data Base Development	Lumpsum	180,000	1	180,000					180,000			180,000	180,000				180,000
	Total expndables				**1,180,000**	-	-	-	-	**1,180,000**	**58,000**	-	1,238,000	**1,231,333**	**3,333**	-	**3,333**	**1,238,000**
	4200 NON-EXPENDABLE EQUIPMENT																	
	4201 Equipment and materials for Soil Labs	Lab	40,000	5	200,000					200,000			200,000	200,000				200,000
	4202 Equipment for hosting Caribbean Soil Information System	Lumpsum	50,000	1	50,000					50,000			50,000	50,000				50,000
	4203 Vehicle	Vehicle		1						-			-	-				-
	4204 Equipment Farm/Land Operations									-			-	-				-
	4206 Equipment and plant material-Communtiy Propergation Centres	Centre	60,000	5		300,000				300,000			300,000	75,000	150,000	75,000		300,000
	4207 Equipment and plant material-Reforestation activity	Country	80,000	5		400,000				400,000			400,000	100,000	200,000	100,000		400,000
	4208 Climate Smart Agriculture Farm Equipment	Country	171,375	4			685,500			685,500			685,500	171,375	342,750	171,375		685,500
	4209 Food Production Farm Equipment	Country	157,100	5				785,500		785,500			785,500	196,375	392,750	196,375		785,500
	4210 Equipment for Innovative Farming	Lumpsum	200,000	1				200,000		200,000			200,000	50,000	100,000	50,000		200,000
	4215 LDN/SLM Knowledge Hud	Lumpsum	60,000	1					60,000	60,000			60,000	60,000				60,000
	4299 Sub-total				**250,000**	**700,000**	**685,500**	**985,500**	**60,000**	**2,681,000**	-	-	2,681,000	**902,750**	**1,185,500**	**592,750**	-	**2,681,000**
	4300 FACILITIES																	
	4301 Office Premises	Month	2,000	48						-	96,000		96,000	24,000	24,000	24,000	24,000	96,000
	4302 Research, Advisory & Capacity Building Facility	Lumpsum	260,000	1				260,000		260,000			260,000	65,000	65,000	65,000	65,000	260,000
	4399 Sub-total				-	-	-	260,000	-	260,000	**96,000**	-	356,000	**89,000**	**89,000**	**89,000**	**89,000**	**356,000**
50	**MISCELLANEOUS COMPONENT**																	
	5100 **OPERATION AND MAINTENANCE OF EQUIPMENT**								0									
	5101 Equipment Maintenance									-	-		-	-	-	-	-	-
	5199 Sub-total				-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5200 **REPORTING COST**																	
	5201 Publication, Translation, Dissemination and reporting costs	Lumpsum	120,000	1					120,000	120,000			120,000	40,000	40,000		40,000	120,000
	5299 Sub-total				-	-	-	-	**120,000**	**120,000**	-	-	120,000	**40,000**	**40,000**		**40,000**	**120,000**
	5300 **SUNDRY**																	
	5301 Communications (tel, fax, e-mail, etc..)	Annual	5,000	4						-	20,000		20,000	5,000	5,000	5,000	5,000	20,000
	5302 Utilities	Annual	6,250	4						-	25,000		25,000	6,250	6,250	6,250	6,250	25,000
	5399 Sub-total				-	-	-	-	-		45,000	-	45,000	**11,250**	**11,250**	**11,250**	**11,250**	**45,000**
5999	Component total				-	-	-	-	**120,000**	**120,000**	**45,000**	-	165,000	**51,250**	**51,250**	**11,250**	**51,250**	**165,000**
99	**GRAND TOTAL**				**1,800,000**	**1,065,205**	**1,530,500**	**1,300,500**	**1,604,000**	**7,300,205**	**587,000**	**268,000**	**8,155,205**	**3,517,469**	**2,224,536**	**1,495,683**	**917,517**	**8,155,205**

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used

by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).